Unequal Bequests*

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Abstract

Using data from the Health and Retirement Study (HRS), we make two contributions to the literature on end-of-life transfers. First, we show that unequal bequests are much more common than generally recognized, with one-third of parents with wills planning to divide their estates unequally among their children. These plans for unequal division are particularly concentrated in complex families, that is, families with stepchildren and families with genetic children with whom the parent has had no contact (e.g., children from previous marriages). We find that in complex families past and current contact between parents and children reduces or eliminates unequal bequests. Second, although the literature focuses on the bequest intentions of parents who have made wills, we find that many elderly Americans have not made wills. Although the probability of having a will increases with age, 30 percent of HRS respondents aged 70 and over have no wills. Of HRS respondents who died between 1995 and 2010, 38 percent died intestate (i.e., without wills). Thus, focusing exclusively on the bequest intentions of parents who have made wills provides an incomplete and misleading picture of end-of-life transfers.

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1. Introduction

In this paper we investigate bequest behavior using a large and nationally representative US sample drawn from the Health and Retirement Study (HRS) over the period 1995–2010. A distinguishing feature of our work is its focus on complex families, in particular on parents with stepchildren and parents with genetic children with whom they have limited or no contact (e.g., children from previous marriages). We complement our analysis of the bequest intentions of parents with wills by examining actual bequests using reports about the disposition of the estates of HRS respondents who died between one HRS wave and the next. We find that unequal bequests (both intended and actual) are much more prevalent than previously documented, with one-third of parents with wills planning to distribute their estates unequally. Unequal intended bequests are most common in complex families, but contact between parents and children reduces or eliminates unequal bequests. Finally, we find that a substantial fraction of elderly parents report having no wills and a substantial fraction of HRS respondents who died had no wills.

Empirical research has long established that a substantial majority of parents intend to divide their estates equally among their children (Menchik 1980; Wilhelm 1996; McGarry 1999; Cox 2003; Light and McGarry 2004; Behrman and Rosenzweig 2004). Despite the fact that earlier economic models predicted unequal bequests (e.g., Becker 1974; Bernheim, Shleifer, and Summers 1985; Cox 1987), more recent studies have developed theories that attempt to rationalize the prevalence of equal bequests, sometimes also attempting to explain why parents treat their children unequally with respect to inter vivos transfers but equally with respect to bequests (e.g., Andreoni 1989; Bernheim and Severinov 2003).

The proportion of American parents aged 50 and over who reported having wills,[1] in which their children were treated unequally more than doubled between 1995 and 2010, rising from 16 percent to almost 35 percent (Figure 1).[2] This upward trend, which holds for both mothers and fathers, is not simply driven by the ageing of the HRS respondents.[3]

[1]We focus on the bequest intentions of parents with wills because most of the information on bequest intentions collected by HRS is from parents who report that they have wills. See the data description in subsection 3.B.

[2]Throughout the paper, stepchildren are counted as "children". Moreover, although the legal definition of stepchildren is narrow (i.e., a stepchild is the child of a spouse), we use this term broadly, to include the children of a cohabiting partner as well as the children of a legally married spouse.

[3]Between 1998 and 2010 the average age of the HRS sample increased only by four years. This is due

A similar increase can be observed across several cohorts of Americans born since 1890 (Figure 2). In fact, younger cohorts (i.e., those born in 1960 or after) are more likely to intend unequal bequests. The sharpest increases occurred among individuals who are no longer married: widows, widowers, and divorced individuals (Figure 3).[4]

Since the middle of the 1990s the fraction of parents reporting unequal bequest intentions has consistently been 30 percentage points higher among parents with stepchildren than among those with biological children only (Figure 4). Comparing parents who have had no contact with at least one of their genetic children with those who have had at least some contact with all of their genetic children, we find the no-contact parents about 25 percentage points less likely to intend equal bequests.[5] The trends in unequal bequest intentions among parents without contact with their children is the same as the trend observed among parents with stepchildren. Our data indicate that as the proportion of stepparents has risen considerably in the last twenty years, so has the fraction of parents who plan unequal bequests.

When individuals die without a valid will, the intestacy laws of their state provide the default allocation, dividing the decedent's estate between the surviving spouse and the children.[6] After providing a substantial share for the surviving spouse, intestacy laws divide the remainder equally among the decedent's biological and legally adopted children. Unlike surviving spouses, under intestacy laws surviving cohabiting partners inherit nothing. And, unlike biological and legally adopted children, under intestacy laws stepchildren inherit nothing (Fried 1992; Brashier 2004).

Since 1998 the average fraction of HRS respondents without a will has been around 42 percent (Figure 5).[7] Among respondents with stepchildren the average fraction without wills is somewhat greater (49 percent), and it is even greater among parents who have

to a number of reasons, including attrition, death of older respondents and, since 2004, the introduction of new cohorts of individuals aged 51 to 56.

[4]HRS data do not allow us to distinguish between cohabitors and married individuals.

[5]In 1995 the HRS did not ask the question on parent-child contact, while in 2010 the question was asked only to a small fraction of respondents. These are the reasons why in Figure 4 those two years are not shown.

[6]As Rosenbury (2005) shows, there are important differences in intestacy laws across states, but we focus on features that are common across states.

[7]This figure starts in 1998 because the 1995 HRS wave oversampled older people (with an average age of 78 years), while the 1996 wave oversampled younger individuals, whose average age is 59 years. From 1998 onwards, the study comprised both subsamples, and in that year individuals were on average aged 67.

no contact with their genetic children (58 percent). Parents aged less than 70 are much less likely to have wills, perhaps because writing a will is not yet salient for them, but a staggering 30 percent of parents aged 70 and over report not having wills.

Standard economic models ignore complex families. The (usually implicit) assumption is that all children are born to a married couple who remain married to each other. When one spouse dies, the surviving spouse is (usually implicitly) assumed not to remarry. Little is said about divorce, remarriage or repartnering and even less about multiple partner fertility.[8] By ignoring divorce, repartnering, or remarriage, canonical economic models fail to recognize the increased complexity of the family (Bumpass and Lu 2000; Stevenson and Wolfers 2007; Lundberg and Pollak 2014).

In addition to presenting a representative picture of contemporary end-of-life transfers, we make two contributions to the literature. First, we show that unequal bequests are much more common than generally recognized. Unequal bequests are concentrated in complex families, that is, families in which parents have stepchildren and families with genetic children with whom the parent has had no contact (e.g., children from previous marriages). Parents with stepchildren are much less likely to include all children in their wills than parents without stepchildren, and parents with stepchildren who have wills are substantially less likely to plan equal bequests. Similarly, parents who have had no contact with one or more of their genetic children are less likely to include all of their children in their wills. When all children are included in the parent's will, we find that parents with no-contact children are less likely to plan equal bequests. The likelihood of unequal bequests, however, is reduced and often entirely eliminated by longer coresidence of stepparents and stepchildren. We interpret this finding as reflecting the accumulation of family-specific capital (e.g., trust and affection) that triggers norms of equal treatment.

Our second contribution to the literature on end-of-life transfers shifts the focus from individuals with wills to those who die intestate (i.e., without wills). We find that many elderly Americans do not have wills. More specifically, 40 percent of HRS respondents report not having wills and 30 percent of HRS respondents aged 70 and over report not having wills. Of HRS respondents who died, 38 percent died intestate. Hence, the usual

[8] In a traditional nuclear family all the children in the household are joint children, but one or both spouses may have children from previous partnerships living elsewhere.

focus on bequest intentions provides an incomplete and misleading picture of end-of-life transfers.

The paper is organized as follows. Section 2 reviews previous work on bequests and describes the legal environment in which individuals make end-of-life transfers. The data are described in Section 3. Section 4 presents the results of our empirical analysis of bequest intentions and of the actual division of estates. Section 5 provides a simple conceptual framework for interpreting end-of-life transfers. Section 6 concludes.

2. Background and Related Literature

Almost all economic models predict unequal bequests.[9] For example, the altruist model assumes that parents equalize marginal utilities across children (Barro 1974; Becker 1974; Becker and Tomes 1979; Tomes 1981). This assumption, together with some strong assumptions about preferences and inter vivos transfers, implies that parents will bequeath more to their less well-off children. Exchange models assume that bequests are made to children in return for their services such as attention and care (Bernheim, Shleifer, and Summers 1985; Cox 1987; Cox and Rank 1992). Because children face different opportunity costs of providing these services, exchange models predict that children will provide different amounts of services and will receive unequal bequests.[10]

Although both the altruist model and exchange models have some empirical support (Tomes 1988, Cox and Rank 1992; Laitner and Ohlsson 2001), most empirical studies challenge both classes of models finding that an overwhelming majority of parents divide their estates equally among their children (Menchik 1980, 1988; Wilhelm 1996; McGarry 1999; Light and McGarry 2004; Behrman and Rosenzweig 2004).[11] Significant effort has then been devoted to rationalizing equal bequests. For instance, Bernheim and Severinov (2003) propose a model of intergenerational transfers based on the assumption that each

[9]Comprehensive reviews of the extensive economics literature on bequests are given by Behrman (1997), Laitner (1997), Laferrère and Wolff (2006), and McGarry (2008, 2013). For an introduction to the legal literature, see Friedman (2009) and Grossman and Friedman (2011). For a comprehensive treatment of the legal issues, see Dukeminier and Sitkoff (2013).

[10]Bargaining power and bargaining ability will also play a role in the absence of special assumptions (e.g., the ability of parents to make take-it-or-leave-it offers to their children.)

[11]Wilhelm (1996) which use federal estate tax data, does allow for adopted children but not for stepchildren and assumes that parents have equal (symmetric) concern for all their children. To the best of our knowledge, all bequest models driven by altruism or exchange motives ignore stepchildren.

child's perception of parental affection influences his or her subjective well-being. Children cannot directly observe parental preferences, but parents signal affection through their actions, including bequests. Altruistic parents then must consider the possibility that unequal bequests may lead their children to infer that they are loved either more or less than their siblings. The assumption that the division of inter vivos gifts is not observed by all the children, whereas the division of bequests (or the division implied by bequest intentions) is, remains untested. Nor is it clear whether and how parents' stated bequest intentions affect children's actions (e.g., caregiving) regarding the parents. Equal division is also consistent with parents' indifference over how their estates are divided among their children. But indifference is both implausible and theoretically unsatisfying because it is compatible with all possible division patterns.[12]

Evolutionary psychology suggests a suite of hypotheses about end-of-life transfers that are still largely untested (Cox 2003, 2007). The underlying premise is that parents behave so as to maximize the probability of survival of their genes and that children with greater wealth are more likely to pass on their genes. One implication is what we call the "genetic-child hypothesis" — that is, parents will make end-of-life transfers to their genetic children rather than to their social children (i.e., genetically unrelated children such as stepchildren who live in the same household).[13] We consider the implications of this hypothesis in two cases: stepchildren and genetic children with whom the decedent has had no contact (e.g., children from a previous marriage who were very young when the parents divorced). The genetic child hypothesis makes clear predictions in both of these cases. Decedents will favor their genetic children.[14]

[12]Pollak (1988) argues that the credibility of the parents' threat to disinherit a child in the strategic bequest model of Bernheim, Shleifer, and Summers (1985) crucially depends on the assumption that parents are indifferent over how their estates are divided among their children.

[13]Unlike models based on altruism or exchange, which hinge on actions taken individually by parents and children (such as the child's need for support or the frequency of visits to and other contacts with elderly parents), the genetic-child hypothesis relies on one specific trait – the genetic link between decedents and potential beneficiaries. In this respect, the genetic-child hypothesis is similar to models of intrahousehold allocation that emphasize a single (exogenous) attribute, such as birth order (Behrman and Taubman 1986; Chu 1991) or the child's sex (Behrman, Pollak and Taubman 1986). Although these other single-attribute models may be useful for understanding differential inter vivos transfers or bequests related to birth order or sex, they cannot explain unequal bequests or bequest intentions toward genetic and social children.

[14]Evolutionary reasoning also speaks to the distribution of bequests among biological children and, when it does, it seldom predicts equal bequests. For example, a childless post-menopausal daughter would not be predicted to receive bequests. These accounts however are outside the scope of our paper.

The only empirical work that attempts to assess the relative importance of the altruism, exchange, and the genetic-child hypotheses is Light and McGarry (2004). Using intended bequest data for a sample of 45- to 80-year-old mothers drawn from the National Longitudinal Surveys of Young Women and Mature Women, they find that the vast majority of mothers (more than 92 percent) intend to leave equal bequests. The mothers who said they intended to leave unequal bequests were asked to explain why. Some responded with explanations that were consistent with altruism, others with exchange and, among mothers with stepchildren, some with explanations consistent with the genetic-child hypothesis. Light and McGarry find that greater within-family variation in children's incomes (a proxy for altruism), poor maternal health (a proxy for exchange), and the presence of stepchildren (a proxy for the genetic-child motive) are associated with higher probabilities of unequal intended bequests. More specifically, for mothers with at least one genetic child and at least one stepchild, they find that the probability of unequal intended bequests increases from 7.9 to 11.3 percent, a 43 percent increase.

Other studies examine the extent to which the division of end-of-life transfers compensates for caregiving. For example, using data from the first wave of the Assets and Health Dynamics among the Oldest Old, Brown (2006) finds that children who are currently caregivers are 32 percentage points more likely than their noncaregiving siblings to be included in their parents' life insurance policies, while expected caregivers are three percentage points more likely to be included in their parents' wills and 15 percentage points more likely to be included in their parents' life-insurance policies.

Unequal transfers from parents to children and from children to parents have also been documented in divorced families. Analyzing the effects of parental marital disruption on late-life inter vivos transfers, Pezzin and Schone (1999) find that parents (especially elderly men) engage in substantially lower levels of transfers with stepchildren than with their genetic children. Marital disruption is also central in Pezzin, Pollak, and Schone (2008). That study, however, concentrates on "upstream transfers" (i.e., adult children's time and cash transfers to their unpartnered disabled elderly parents) rather than on "downstream transfers" (i.e., transfers of time and cash from parents to their children). They find unequal flows of services to parents in families that experience divorce, with stepchil-

dren providing significantly lower transfers than genetic children. Other than Light and McGarry (2004), however, no previous study has examined bequests to stepchildren.

End-of-life transfers and bequests have also been analyzed by legal scholars and commentators. Unequal division of estates among genetic children typically generates unease among trust and estates lawyers because they view unequal bequests as invitations to litigation (Collins 2000; Blattmachr 2008; American Bar Association 2013). Stepchildren, however, belong to a different category since the law treats stepchildren as unrelated strangers rather than as family members (Schanzenbach and Sitkoff 2009).

Legal scholars also write on intestacy, a subject thus far entirely neglected by economists. Intestacy statutes divide the estates of married decedents with children between the surviving spouse and the decedent's genetic and legally adopted children.[15] If a stepparent dies without a valid will, stepchildren inherit nothing.[16] As a number of scholars have pointed out, stepchildren have never fared well under intestacy statutes (Mahoney 1989; Gary 2000; Noble 2002; Brashier 2004; Cremer 2011). Stepchildren however may inherit from their absent biological parent, and so it is unclear whether they are truly disadvantaged by intestacy law.[17] This is an issue that cannot be explored with the HRS data and requires additional research.

Some stepparents may intentionally forego writing a will precisely because they know that intestacy laws will mandate an equal division among their biological and adopted children and give nothing to their stepchildren. On the other hand, parents with genetic children with whom they have had no contact might write wills to avoid giving these children an equal share of their estates. Some parents are no doubt aware of the default division imposed by intestacy law while others are not. Unfortunately, HRS provides no information about respondents' knowledge of or beliefs about intestacy law. We can examine, however, for the first time, whether parents are less likely to write a will if they

[15]The Uniform Probate Code treats adopted children as if they were biological children of the decedent (Noble 2002; Cahn 2005).

[16]California provides a narrow exception to this generalization: a stepchild may inherit if it can be shown that the stepparent would have adopted the stepchild but was prevented from doing so by a legal barrier. This exception is available only to a stepchild who satisfies the legal definition of a stepchild (i.e., a child of the decedent's spouse, not of the decedent's cohabiting partner). See Hanson (1995) and Noble (2002) for more details.

[17]At common law, in fact, the relationship of stepparent and stepchild generally confers no rights and imposes no duties (Wypyski 1984).

have stepchildren or if they have genetic children with whom they have had no contact.

3. Data

A. Samples

Our analysis uses data collected between 1995 and 2010 by the Health and Retirement Study (HRS), which contains detailed information about bequest intentions and the actual distribution of estates.[18] The HRS is a longitudinal survey of a nationally representative sample of more than 26,000 Americans over the age of 50 who are interviewed every two years.[19] If a respondent has a spouse or partner, the spouse or partner is invited to become an HRS respondent too. In each survey year, the "core files" provide data from standard questionnaires administered to all respondents. The "exit files" provide information about the actual distribution of the estates of HRS respondents who died since the previous wave; this information is collected from a proxy respondent, such as the surviving spouse, an adult child, or another close family member.

From the core files we select respondents with at least one child and with nonmissing information on intended bequests and other basic variables. This leaves us with an unbalanced panel of 23,984 individuals, for a total of 117,189 person-wave observations. When first observed in the study, 11,221 individuals (47 percent of the sample) report having no will, while 12,763 report having a will. As the survey progresses, the percentage of individuals without a will decreases to 42 percent. Of the 21,140 parents in our sample with more than one child, 11,170 (53 percent) report their plans to distribute their estates among their children. More than one fifth of the whole sample (5,082 parents) report having both biological children and stepchildren.[20] Of these individuals, 2,342 report having a will (about 18 percent of the sample of parents with wills or over 46 percent of the parents with stepchildren).

The HRS also collects information on the frequency of contacts between parents and children. We use this information for the 12,739 individuals who have genetic children

[18] As noted in the Introduction, HRS asks respondents about their bequest intentions only if they report having wills or trusts.

[19] See <http://hrsonline.isr.umich.edu/> for more information about the data.

[20] The HRS does not distinguish between genetic children and adopted children.

only. Just over 17 percent of them (2,178 parents) report having no contact in the previous year with at least one of their children.[21] Among no-contact parents, the proportion without a will exceeds 57 percent. This is substantially greater than that observed among parents who have more frequent contact with all their genetic children (42 percent).

The exit files provide information on the actual disposition of estates and other basic variables for 7,416 individuals (almost 85 percent) of the 8,800 HRS respondents who died over the sample period. There are 2,781 parents (38 percent) who died intestate, a slightly smaller proportion than the 42 percent of HRS respondents in the core files who report having no wills. Of the remaining 4,635 who died with a will, 3,897 had more than one child and 630 (18 percent of the sample of decedents with wills and with more than one child) had both stepchildren and genetic children, representing more than 90 percent of decedents with stepchildren.[22]

B. Outcomes

Table 1 shows the means of our main dependent variables broken down by the presence of stepchildren in both the core and the exit files and by parents' marital status. About 42 percent of the sample in the core files does not have a will (column (a)). The raw difference of 6.9 percentage points between those with stepchildren (column (b)) and those with genetic children only (column (c)) is statistically significant. Almost two-thirds of divorced parents do not have a will. Again, parents with stepchildren are less likely to have a will than parents with genetic children only. The same picture emerges from the exit files, even though the fraction of all parents without a will is almost 38 percent, somewhat less than in the core files. We shall return to this issue in the next section.

As mentioned above and in the Introduction, we focus on parents with wills because most of the information collected by HRS is from parents who report that they have a

[21] Among parents with both stepchildren and genetic children, the proportion of parents with no contact with at least one of their biological children is higher, being around 20%. Since only 450 parents in our sample belong to this category, however, a detailed analysis of their bequest intentions is not possible.

[22] The exit files yield a sample that is smaller than that obtained from the core files. Moreover, at present, it disproportionally represents individuals with lower socioeconomic status and higher mortality risks (Cutler et al. 2011).

will.[23] Conditional on having a will, about three-quarters of the parents from the core files report they include all children in their wills, while only 59 percent of the estates whose distributions are reported in the exit files were divided in a way that included all children. Intended inclusion of all children is substantially less likely among parents with stepchildren regardless of their marital status, but this does not emerge in the exit files, where none of the differences are statistically significant at conventional levels (column (d), panel B).

Finally, in the core files, almost one-third of all parents with a will report that they plan to distribute their estate unequally among their children (column (a), panel C). Intended unequal divisions are much more likely among parents with stepchildren (61 percent for all parents and a staggering 75 percent for divorced parents, column (b)) than among parents with genetic children only (27 and 29 percent respectively, column (c)). In the exit files, however, the proportion of estates that are divided unequally is substantially greater (53 percent). The difference between parents with stepchildren and parents with genetic children only is smaller than that observed in the core files, but is always statistically significant. This may reflect a change in parents' behavior between the time they reported their intentions in the core files and the actual distribution of their estates reported in the exit files. It may also be driven by selection (parents in the exit files are older) or reflect the difference in mortality rates by socioeconomic status (parents in the exit files are less educated and less healthy, and these might be the type of parents who are more likely to distribute unequally their end-of-life resources).

Appendix Table A1 mirrors Table 1 focusing on no-contact parents. As in the case of parents with stepchildren, parents who have had no contact with their genetic children in the past year are much less likely to have a will. About 57 percent of no-contact parents have no will, as opposed to 42 percent of parents who have regular contact with all their genetic children (panel A). Among divorced no-contact parents the proportion of those without a will is nearly 70 percent. Looking only at parents with a will, almost 85 percent of those with regular contacts with all their genetic children report the intention

[23]The exception is in relation to the probability that respondents bequeath a specific amount of money, which is asked to each household independently of whether respondents have a will or not. At the end of subsection 4.B we discuss the results found using that information.

to include all of them in the will. This proportion is 19 percentage points greater than that observed among no-contact parents, and the difference is highly significant (panel B). Finally, parents in regular contact with their children also report they are more likely to divide equally their estate than no-contact parents (79 and 57 percent respectively). The difference between these two groups of parents is even greater when we consider divorced and widowed (panel C). These patterns are consistent with the predictions implied by exchange models.

C. Explanatory Variables

Table 2 reports summary statistics for the explanatory variables we use to model the probabilities of reporting having a will and reporting the intention to leave unequal bequests. We show figures for the sample of elderly parents who report having wills (column (b)) and for the broader sample of 23,984 individuals that also includes parents who report not having wills (column (a)). The table also presents summary statistics for the subsample of all parents who have both genetic children and stepchildren (column (c)) and the subsample of 2,342 parents with stepchildren who report having wills (column (d)).[24]

Our covariates include standard demographic controls for parents' age, sex, race, marital status, and number of marriages. These variables capture basic heterogeneity within and across households. We also include measures of annual family income and total wealth (both expressed in 1995 prices), parents' education (highest grade completed) and employment status. We use these variables as controls for heterogeneity in parental resources. HRS respondents are also asked whether they gave money to at least one child or to all children equally; inter vivos transfers are known to depend more directly than bequests on children's current incomes and thus tend to be divided less evenly (McGarry 1999).

One of our key explanatory variables is an indicator variable for the presence of at least one genetic child and at least one stepchild. The genetic-child hypothesis predicts that parents will treat genetic children and stepchildren differently in allocating resources. Because parents' ability or willingness to make transfers may depend on the total number

[24]For the sake of brevity, summary statistics of the independent variables broken down by parental absence status are not reported.

of children and stepchildren, we include these characteristics as well.

Another key variable is parental absence, proxied by parents' lack of contact with their genetic children. Parents who report having had no contact with at least one of their genetic children over the previous year are defined to be no-contact parents. In subsection 4.F we will also consider parents with infrequent contact. This latter group comprises parents who report having had at least one contact with their children over the last year, while parents with frequent contacts are those who have contact at least once a month. Exchange models predict that children with more regular contacts will be more likely to receive bequests if these children are also more likely to provide care and support to their needy elderly parents (Bernheim, Shleifer, and Summers 1985; Cox 1987).

We use parental health status ("poor or fair" as opposed to "good or excellent") as a proxy for a parent's need for children's services and hence, willingness to pay for them (i.e., the exchange motive). Using the parents' reports of the children's income and wealth would substantially reduce the number of observations, so instead of doing so we predict each child's income using observed characteristics. Following Light and McGarry (2004), we predict incomes using estimated parameters from income models that we fit to the data from the Current Population Survey (CPS) between 1994 and 2006. Our sample consists of all CPS respondents in the same age group as the parents/children in our HRS sample. We estimate separate models for men and women using as regressors a constant, a quartic in age, five dummy variables indicating the highest educational attainment, and indicator variables for race, marital status, number of children, and home ownership. We then use this predicted income variable to construct a measure of income differences, the coefficient of variation (obtained by dividing the standard deviation of estimated income by its mean) among the children of each individual.

For each of our covariates, we observe differences between parents with a will, parents with stepchildren, and parents with stepchildren and a will (columns (b)–(d)). Perhaps unsurprisingly, the most striking differences are between parents in the core files (column (a)) and those in the exit files (column (e)). Compared with the parents in the core files, parents in the exit files are less educated and more likely to report being in poor or fair health in the last wave in which they participated. Parents in the exit files are older (and

thus more likely to be retired), and more likely to have been widowed (and hence to have lower household income).

4. Empirical Results

We present our empirical results in six subsections, emphasizing the roles of stepparents and parents without contact with at least one of their genetic children. We first describe who has a will and who does not (subsection A). Then we analyze whether parents include all children in the will and, if they do, whether they intend to leave equal bequests to all children (subsection B).[25] We next investigate how health, wealth, and previous inter vivos transfers affect the probability that HRS respondents intend to treat their children unequally (subsection C). In subsection D we exploit the longitudinal aspect of the HRS examining changes in bequest intentions, while in subsection E we turn from bequest intentions to the actual division of estates using the exit files. Finally, in subsection F we examine how contacts and interactions between parents and children in complex families are related to end-of-life transfers.

A. Who Has a Will and Who Does Not

As we saw in Table 1, the fraction of HRS respondents who have children but do not have wills is substantial: 42 percent of those in the core files report not having a will. A complication with bequest intention data is right censoring: some parents who will eventually write wills have not done so at the time they respond to the survey. Older and less healthy parents, however, might be more likely than other respondents to write wills. So might unpartnered widows or widowers, who are the last ones to have the responsibility of passing on the family estate to future generations. To account for these possibilities, we control for parental age and health status, and estimate separately the response of widows, widowers and divorced parents. To assess the extent of the right censoring problem more directly, we use data from the exit files.[26]

[25] It is worth keeping in mind that stepchildren are counted as children.

[26] As mentioned in Section 3, 38 percent of parents in the exit files died intestate. This slightly lower proportion than that recorded in the core files may reflect an actual change in parents' behavior or selection driven by differential attrition based on age, health, and socioeconomic status. We leave this interesting issue for future research.

Table 3 presents random effects probit estimates of the impact of the presence of stepchildren on the probability that parents report not having a will. The table, based on data from the core files, shows the results from five specifications. In specification (a) we include our basic set of controls (demographics, education, and employment status) as well as health status indicators. Specification (b) adds measures of money transfers to children, while specification (c) drops these measures but includes controls for parents' expected income and wealth. Specification (d) includes all previous measures, while specification (e) also includes the coefficient of variation between children's income, as an additional regressor. Besides the results for all parents, the table also shows results separately for fathers and for mothers, and reports the pooled and separate effects for the subsamples of widowed and divorced parents.

Although the descriptive statistics show that individuals with both genetic children and stepchildren are less likely to report having wills than those with genetic children only, the estimates in Table 3 imply that our basic control variables largely account for this difference (column (a)), except for widows and for divorced fathers. Widows are indeed 7 percentage points less likely to have a will. This is confirmed when we control for inter vivos transfers and parental income and wealth (columns (b)–(d)), but the relationship becomes weaker and loses statistical significance when we further control for the coefficient of variation between children's predicted income (column (e)).

For divorced fathers with stepchildren we find that the probability of having a will is nearly 8 percentage points greater than the corresponding probability for divorced fathers with genetic children only (column (a)). Controlling for inter vivos transfers and parental income and wealth leads to even greater estimates, ranging from 8 to 12 percentage points (columns (b) to (d)). When we control for within-family income differences, the probability of not having a will goes up to almost 20 percentage points. In the next subsection we examine whether the differential propensities to have a will reflect parental preferences to favor own biological children or preferences to equalize the distribution of estates across all children, including stepchildren.

Table 4 shows how the probability that parents have no will is affected by contact between parents and children. The five specifications in this table are those presented in

Table 3. Among all parents with genetic children only, those who have no contact with one or more of their children are nearly 15 percentage points more likely to have no will. The magnitude of this impact varies with the parent's gender and marital status, but the effect is generally robust across specifications and subsamples. Lack of contact, therefore, is associated with a significant reduction in the probability of having a will.

B. Unequal Intended Bequests

Conditional on parents having a will and having more than one child, we now investigate two questions: whether parents *include* all children in their wills and whether they treat all children *equally* in their wills.

Table 5 presents random effects probit estimates of the stepchild variable on the probability that individuals include all children in their wills. The five specifications in columns (a)–(e) and the rest of the organization of the table are the same as in Table 3. Table 5 reveals that for parents with stepchildren the likelihood of including all children in the will is 28–39 percentage points lower than for parents without stepchildren. This impact is stronger in absolute value for mothers than for fathers, although controlling for income dispersion between siblings reverses this result (column (e)). Looking at specification (d), mothers with stepchildren are almost 38 percentage points less likely to report including all children in their wills while fathers with stepchildren are about 27 percentage points less likely to do so. These negative effects are strongest for divorced parents with stepchildren, with estimated impacts ranging between 59 and 63 percentage points lower than for divorced parents without stepchildren. We also find strong negative effects among widows and widowers. This might happen because widows and widowers write new wills after the death of the spouse. In subsection D, where we analyze transitions, we shall return to this possibility.

We repeated the same analysis but focusing on the behavior of parents who have only genetic children but with whom they have no contact. The results are in Appendix Table A2. These are remarkably similar to those reported in Table 5. In particular, parents who have no contact with at least one of their genetic children are 20 percentage points less likely to include all children in the will. Divorced or widowed parents show even smaller

chances of including all of their children in the will. No-contact parents therefore have a substantially greater propensity to treat their genetic children unequally.

Conditional on having a will, we repeated the same analysis for the likelihood of having a will in which all children are treated equally. Table 6 reports the random effects probit estimates for parents with stepchildren, while Appendix Table A3 reports the estimates for no-contact parents. Table 6 indicates that the presence of stepchildren is always associated with a considerably lower probability of equal intended bequests and these differences are always statistically significant at the 1 percent level. For example, having both genetic children and stepchildren as opposed to having genetic children only reduces the probability of a will in which all children are treated equally by 31 percentage points (first row, column (d)). This negative effect is greater for mothers than for fathers (36 versus 25 percentage points, respectively), and the difference is statistically significant at conventional levels. But, as in Table 5, this gender difference is not robust to the inclusion of the coefficient of variation of children's predicted income (column (e)).

Unpartnered parents (either divorced or widowed) are generally less likely to plan equal bequests if they have genetic children and stepchildren. For example, divorced fathers are 52 percentage points less likely to treat all children equally than divorced fathers with genetic children only (column (d)). Similar responses are found for divorced mothers as well as for widows and widowers, and the gender differences are never statistically significant.

Without exceptions, the estimates in Appendix Table A3 reveal that parents who have no contact with their genetic children are also less likely to plan an equal division of their estates. Parental absence is on average associated with a reduction in the probability of equal bequest intentions of 25–30 percentage points. Stronger reductions are observed among all fathers and among those who are divorced or widowed.[27]

In sum, the estimates in Tables 5 and 6 and those in Appendix Tables A2 and A3 tell a consistent story. Parents in complex families are less likely to mention all their

[27]The results in Tables 6 and A3 were found on parents with two or more children *and* a will. An alternative sample selection is to include only parents with two or more children and a will that mentions *all* of the children. This selection clearly leads to smaller samples. But even when this more restrictive definition is used, we find effect estimates that are in line with (albeit of smaller magnitude than) those shown in Tables 6 and A3. They are reported in Appendix Table A4.

children in the will. Among such parents, those who do mention all children are more likely to plan an unequal division of end-of-life transfers. This evidence suggests that stepchildren and genetic children with no contact with their parents appear to face similar chances of inheriting from their stepparents and parents. This result sits at odds with the genetic-child hypothesis, according to which parents favor their own genetic offspring over stepchildren, and seems instead to be driven mainly by other motives. In the next subsection we explore this possibility further.[28]

C. Health, Wealth, and Inter Vivos Transfers

In our analysis we included variables that are meant to proxy altruism and exchange as bequest motives. We also controlled for gifts to children, since parents might adjust their bequest intentions if they made substantial inter vivos transfers. The adjustment could go in either direction. Parents might give less to children who already received inter vivos transfers to equalize lifetime transfers, or they might give more because previous transfers indicate greater need or closer ties. We now briefly discuss these results that can be found in the web appendix.

In families with stepparents and in families with no-contact parents, wealth and income have opposite effects on the probability of having a will. Wealthier parents are more likely to report having a will. But higher income parents are less likely to report having a will, perhaps because such parents are likely to be younger and still in the labor force. In both types of families, having made inter vivos transfers is associated with a 5 percentage point increase in the probability of reporting having a will. Being in fair or poor health

[28]It should be emphasized that we performed several robustness checks. The estimates from these exercises by and large uphold the picture on bequest intentions emerged so far. In one of the exercises, we disaggregated the overall effect of the stepchild (or no contact) indicator variable by the number of genetic children and stepchildren and distinguished among parents with one child in each category, those with two genetic children and one stepchild, those with one genetic child and two stepchildren, and those with two or more children in each category. Virtually all our earlier results are robust to this change. In another check, we took advantage of the fact that, regardless of whether individuals have a will, the HRS asks one respondent per household to report the probability of leaving a bequest worth at least $10,000, $100,000, and $500,000, excluding any inheritance to be left to the surviving partner if he/she is still alive. We banded all answers into six groups, i.e., we distinguished individuals who report a zero probability from those with a positive probability, and these in turn were banded into five quintiles. Using random-effects ordered probit regressions, we then re-analyzed the models of having a will, inclusion of all children in the will, and equal intended bequests. Again, the results from this analysis are qualitatively very similar to those discussed above. These and the previous estimates are reported in the online appendix.

is associated with a 7 percentage point reduction for stepparents, while the estimated decrease is 9 percentage points for no-contact parents. Less healthy parents, who might be more in need of care from their children, may have an incentive to have a will. Finally, larger differences in children's incomes are associated with a lower probability of having a will, although this relationship is not statistically significant.

Wealthier stepparents and no-contact parents are more likely to report including all children in their wills as well as their intention to divide their estates equally among children. For parents with stepchildren, greater parental income, which might be more common among younger (still working) parents, is associated with a reduction in both probabilities. For such parents, we also estimate that parents who have already made inter vivos transfers have a 7 percentage point higher probability of including all children in their wills and 11 percentage point higher probability of intending equal bequests. For no-contact parent families, the negative relationship with income is weaker and the effect of inter vivos transfers is smaller. For instance, having already made inter vivos transfers increases the probability of including all children in the will by 3 percentage points and the probability of equal bequest intentions by 5 percentage points.

For both types of families, greater income dispersion between siblings is associated with a lower probability that wills include all children and a greater probability that parents intend to divide their estates unequally. Although these correlations are not statistically significant, if we assume that parents intend to give more to low-income children, then they are consistent with altruistic behavior.

Parents in poor health are 2 to 3 percentage points less likely to include all children in the will and, conditional on mentioning all children, around 4 percentage points less likely to include all of them equally. If poor health reflects parents' long-term need for child assistance, these results suggest that parents may use their intended future transfers, which they could make known to their children, to elicit a long-term flow of services. This is consistent with the exchange motive postulated by Bernheim, Shleifer, and Summers (1985) and documented by Light and McGarry (2004).

D. Transitions in Bequest Intentions

Exploiting the longitudinal aspect of the HRS, we analyze changes in bequest intentions. In particular, we focus on the transitions from not having a will to having a will, from having a will that does not include all children to having a will that includes all children, and from unequal intended bequests to equal intended bequests. The picture emerging from the nine transitions in the other directions is consistent with that obtained from the three transitions just mentioned. They are therefore not presented, but are available in the web appendix.

Of course, several other transitions might interact with bequest plans and the joint presence of genetic children and stepchildren or the lack of contact with genetic children, such as changes in parental health and changes in children's economic situations. In our analysis we explicitly consider the interaction of the presence of stepchildren or parental absence with changes in parents' marital status (e.g., divorce and death of a spouse).

Table 7 shows the results from a specification similar to specification (d) in Tables 3–6, which includes changes in our basic set of controls, health status, money transfers to children, and parental income and wealth. The estimates of interest are robust to their exclusion. In panel A we look at stepparents, while in panel B we focus on no-contact parents. For each transition, we report two sets of coefficients. In the first column, we present the impact of having stepchildren or genetic children with whom the parent has no contact on the transition under study. In the second we also show the interaction terms of the stepchild or no-contact parent variable with two changes in parental marital status: from marriage to divorce and from marriage to widowhood. This is important because, following divorce or the death of a spouse, an individual might write a new will.

In fact, in panels C and D we analyze this possibility more directly by considering only the subsample of widows and widowers. In this case, we first analyze whether parents write a new will or change an old will after the death of their partner (first column). In the second column we then present the estimates of how the presence of stepchildren or no-contact children changes bequest intentions further.[29]

Panel A of Table 7 reveals that the transition from not having a will to having a will

[29]Other interesting changes in marital status (e.g., remarriage and repartnering) cannot be analyzed separately due to sample size limitations.

is affected in the same way by the joint presence of stepchildren and genetic children as by the presence of genetic children only. This is also the case when the presence of stepchildren is interacted with the two changes in marital status. The joint presence of genetic children and stepchildren significantly reduces the probability of a transition to a will in which all children are included as well as the transition from unequal to equal bequests. Having stepchildren reduces the former transition by almost 9 percentage points (column (c)) and the latter by around 8 percentage points (column (e)). Controlling for changes in parents' marital status does not significantly alter these results (see columns (d) and (f)).

The presence of stepchildren therefore is negatively correlated not only with the probability of equal intended bequests but also with the probability of changing the will from unequal to equal treatment of children. Having lost a partner through divorce or death generally makes this transition even less likely.

Panel B confirms virtually all the previous results for the case of families with no-contact parents. Generally the estimated effects are larger in absolute value among these families than among families with stepparents. The only exceptions are in columns (d) and (f) where the reductions in the probability that no-contact children are included in the will and are mentioned equally are not statistically significant if the no-contact parent's partner dies. This could be driven by the low statistical power of our small samples. We assess this issue more directly in the next two panels in which we focus on the subsample of widows and widowers.

For this subsample we draw attention to four interesting results. First, the estimates for widowed stepparents are similar to those for no-contact parents. Second, widowhood in all complex families increases the likelihood of changing bequest intentions: it increases the transition to writing a will, having a will in which all children are mentioned, and having a will in which all children are equally included (columns (a), (c), and (e)). Third, stepchildren or no-contact children neither increase nor decrease parents' greater propensity of writing a will (column (b)), but offset their parents' greater propensities of including all children in the wills and including them all equally (columns (d) and (f)). Fourth, the presence of stepchildren combined with a spouse loss further reduces the likelihood of

moving to a will with full inclusion by 13 percentage points and the likelihood of moving to a will with equal division by 9 percentage points (panel C). Such further reductions are not observed among no-contact parents (panel D). This evidence is in line with what we found in the top two panels.

E. Actual End-of-Life Transfers: Evidence from the Exit Files

The HRS exit files provide direct information about end-of-life transfers. The exit files contain reports by the surviving spouse or partner or by other close family members of the deceased HRS respondent and they allow us to analyze the actual division of estates rather than bequest intentions. Unlike the core files, the exit files do not suffer from right censoring but they are much smaller than the core files and the HRS respondents who die early are not a random subsample of HRS respondents.

Table 8 gives a summary of our results. For each outcome we show probit estimates from two specifications. The first includes controls for standard demographics (column (a)), while the second further controls for year-of-death fixed effects, an indicator for whether the death was expected, earlier transfers to children, and parental wealth (column (b)).[30]

When looking at the probability of intestate succession (in the first two columns of Table 8), the estimated coefficient of the stepchild variable is always statistically indistinguishable from 0. This result, which holds true across all family types and for both fathers and mothers, confirms the general findings reported in Table 3. From the exit files, however, we detect neither the negative effect for widows nor the positive effect for divorced fathers which were found using the core files. This might reflect an actual change in parents' behavior. But it could also be due to the low statistical power implied by the small sample size of the exit files.

In the next two columns, we consider the probability of including all children in the will. This is estimated on the subsample of HRS respondents who wrote a will, while those who died intestate are not included. We generally find that having stepchildren

[30]The table reports the estimates on the stepchild indicator found among families with stepparents. The exit files do not allow us to perform the same analysis on parents who did not have contacts with their genetic children.

does not affect the likelihood that all children are included (column (a)). This result emerges for the full sample as well as for all the subsamples of mothers and fathers by marital status. It contradicts what we found in Table 5 using the core files. Indeed, in two out of the nine cases under specification (b), we even find a *positive* and significant effect of the stepparent indicator. This result might indicate a strategy according to which stepparents end up including all their children (including stepchildren) in their final will.

Would all children be included *equally*? The last two columns, where we present the estimates for the probability of equal bequests, suggest that they are not.[31] In fact, in line with the bequest intention estimates of Table 6, the results in Table 8 indicate that the presence of stepchildren reduces the probability that actual bequests are equal by 9 percentage points (first line, specification (a)). This impact is roughly a fourth of the magnitude of the corresponding impact on intended bequests. As in the case of the core files, the estimated effect of stepchildren on equal actual bequests is greater for fathers than for mothers, although the relatively large standard errors make this differential response by gender statistically indistinguishable from 0. We also cannot detect differential impacts for the subpopulations of parents who experienced divorce or the death of a spouse or partner. But the probability of equal bequests is particularly low for divorced mothers and widowers, with estimated effects similar to those we found for the intended bequests. Some of these effects lose their statistical significance when we estimate specification (b), but by and large the main pattern of results is confirmed.

In sum, the presence of stepchildren does not affect the probability of writing a will. Stepparents might explicitly decide to rely on intestacy statutes which would leave nothing to stepchildren. For parents who die with a will, there is evidence that they include all children. But the actual bequests observed in the exit files are consistent with the bequest intentions reported in the core files. Unequal bequests are a distinguishing feature of individuals with both step- and genetic children and, in the actual division of estates, genetic children are favored over stepchildren.

[31] As before, this analysis is based only on the subsample of parents who died with a will.

F. Interactions between Parents and Children

We now focus on how interactions between parents and children are related to the probability that the children are mentioned in the will.[32]

We first look at the stepparent–stepchild interaction and investigate whether stepchildren are less likely to be included in the will of a stepparent when the stepparent also has genetic children. Table 9 presents random effects probit estimates of the probability that a stepchild is mentioned in the stepparent will for the whole sample of stepchildren. The table shows the results from five specifications. In specification (a) we include a basic set of controls (i.e., parent and child's age and gender), the age at which the child became a stepchild, and the number of years spent with the stepparent. Specification (b) also controls for whether the stepparent reported providing care for the stepchild's child(ren), while specification (c) includes an indicator of whether the stepchild was the main recipient of inter vivos transfers from the stepparent. Specification (d) adds a measure of the stepchild's predicted income, which was constructed using the procedure described in Section 3. Finally, in specification (e) we add controls for the within-family difference between the stepchild's predicted income and the genetic child's income (or the income mean when there are two or more genetic children). We distinguish two subgroups, one in which the stepchild's income is more than 50 percent lower than the genetic child's, and the other in which the (negative) difference is between 1 and 50 percent.[33]

Table 9 reveals that for a child whose stepparent also has a genetic child the probability of being included in the will is 3–4 percentage points lower, an average impact of about 15 percent (columns (a)–(e)). This is consistent with the genetic-child hypothesis according to which parents tend to favor children who share their genes. This negative relationship is entirely eliminated, however, if the stepchild's predicted income is lower than the genetic child's, and is more than outbalanced if the income difference is less than 50 percent (specification (e)). Nearly two-fifths of stepchildren in the sample have relatively lower incomes. This finding is consistent with altruism if parents not only are more likely to

[32]We cannot directly focus on the stepchild's or no-contact child's perspectives because in the HRS we have information only on parents and stepparents.

[33]We checked the sensitivity of this cutoff using different partitions, and found results that are essentially identical to those shown in Table 9. These alternative estimates are thus not reported.

mention low-income stepchildren in their wills (as we find here), but also give them more. We cannot test this last point because the HRS does not contain any information about the amount that the respondents intend to bequeath to each child.

Across all specifications, the older the stepparent the higher the likelihood that the stepchild is included in the will: the stepchild penalty is fully offset if the stepparent is 10 years older than the average stepparent. This may indicate a greater need for the stepchild's assistance. These findings mirror the relationship between parents and their genetic children. In particular, they suggest that stepparents may use bequests to elicit a long-term flow of reciprocal services rather than episodic short-term care. It is possible, in fact, that episodic short-term care could be "paid for" by inter vivos transfers. This behavior is consistent with the strategic use of bequests postulated by Bernheim, Shleifer and Summers (1985). Children whose stepparents are in poor/fair health (another possible indicator of need) have however a 5 percentage point *decrease* in the probability of being included in the will.

Table 9 also shows that, regardless of the age at which a child acquired the stepparent, the more years he/she spent with the stepparent the higher the likelihood of being included in the will: 7–9 years of stepchildhood completely eliminate the stepchild penalty. Moreover, a stepchild's probability of inclusion in the will goes up by about 6–8 percentage points if the stepparent reports having provided care for the stepchild's child(ren) (specifications (b)–(e)) and by another 13–14 percentage points if the stepchild is also the main recipient of inter vivos transfers (specifications (c)–(e)). This may reflect trust and bonding, which are strengthened by repeated interactions over longer time periods.

Stratifying the sample by gender (see Appendix Tables A5 and A6), we find that the negative association between the probability of being mentioned in the will and the presence of a step-sibling (i.e., the variable 'stepparent has own genetic children') is concentrated among male stepchildren, who experience a reduction in this probability of about 5–7 percentage points. Female stepchildren experience a reduction of at most 3 percentage points but this reduction is never statistically significant. For female stepchildren the probability of being mentioned in the will is also unaffected by differences in children's predicted incomes. The same pattern of results, with the same gender differ-

ences, persists when we focus on the subsamples of stepchildren of divorced and widowed parents. These results are reported in the online appendix.

We now turn our attention to no-contact parent–genetic child interactions and investigate how contacts in complex families affect bequest intentions. In Table 10 we report how the probability that a child of a no-contact parent is mentioned in the parent's will varies with the frequency of contact and with the fact that the parent's spouse is not genetically related to the child.[34] The first two columns of the table show that parents who have no contact with their genetic children are 21–24 percentage points less likely to mention them in their wills. The lack of parent–child contact therefore more than halves the child's odds of inclusion in the parent's will. Having infrequent rather than frequent contacts also reduces the likelihood of inclusion by 14–15 percentage points, but, as indicated by the p-values at the bottom of the table, the difference between having infrequent contacts and not having them at all is always statistically significant. These results do not change when we add controls for child's income and other parent-child interaction terms (e.g., grandchild's care and inter vivos transfers).

Notice however that the "no-contact genetic child penalty" is fully offset if the child is the main recipient of inter vivos transfers. This might reflect earlier (more frequent) interactions. Similarly, if the no-contact child is a female, her penalty is reduced by 60–90 percent, perhaps reflecting other services expected by the parent but not observed in the HRS.

In columns (c) and (d) we explore how the child's odds of being mentioned in the will change not only when the child has infrequent or no contact with the parent but also if he/she is not the genetic child of the parent's partner. We find that, if the no-contact child is also genetically unrelated to the parent's partner, his/her probability of being included in the will is further reduced by 8 percentage points (column (c)). This means that for no-contact stepchildren the odds of inclusion are essentially reduced to zero. As before, being the main recipient of inter vivos transfers and being a female will reduce the penalty substantially but will not eliminate it entirely.

[34]Due to small sample size we could not estimate a specification which included the within-family coefficient of variation in children's income. We thus cannot use the estimates in Table 10 to assess the role played by altruism.

We also conducted this analysis separately for male and female children, the results of which are shown in web appendix. In general, the effects are similar for both men and women, except that female children who are not the genetic children of the parent's partner face an additional penalty only if they have have no contacts with their parents, but no further penalty if they have infrequent contacts with them.

In sum, parents are more likely to transfer resources to children who share their genes than to stepchildren who are genetically unrelated to them. But a simple evolutionary story, such as the genetic-child hypothesis, does not seem appropriate to explain what we observe in the data as, for example, in the case of no-contact parents. Furthermore, bequests to stepchildren are affected by altruistic and exchange motives. Parents are likely to leave bequests to their low-income stepchildren suggesting altruistic motives. And stepchildren are more likely to be mentioned in their stepparents' wills if the stepparents are older suggesting exchange motives. Trust and bonding seem to be highly relevant too within all complex families: there is no stepchild penalty if stepparents help with child care or have already made other transfers. Similar patterns occur between parents and their no-contact genetic children. The relationship between stepchildren and parents in complex families requires deeper, more subtle explanations than those provided by the genetic-child hypothesis.

5. Theory

Here we provide a simple framework to interpret the results of the previous section. We borrow our key insights from the work by Behrman, Pollak and Taubman (1982, 1986, 1995).

Consider a family comprised of one elderly parent (e.g., the surviving spouse) and two children, child g who is her genetic child and child s who is her stepchild.[35] Suppose the parent has a separable welfare function defined over expected bequests for each child, $W(B_g, B_s)$. The parents maximize W subject to three constraints. The first constraint is the budget constraint that applies to resources devoted to bequests. Such resources are denoted by R, while investments are denoted by H. Assume parents face a fixed price for

[35] Alternatively, child s could be seen as the genetic child with whom the elderly parent has no contact.

their investments and the price is identical for both children. Normalizing the investment price to 1, we can write the constraint as $H_g + H_s \leq R$.

The other two constrains are the bequest production functions, one for each child. One of the arguments of these functions is bequest related investments, H, which include the full history of each child's health and human capital investments as well as material help and money transfers that parents have made over their children's lives and that, in turn, might depend on child attributes, such as age and sex. Child-specific income and family circumstances are also determinants of such investments. Another argument, labeled P, comprises bequest-relevant parental characteristics, such as age, sex, marital status, health, income, and wealth. A final category, labeled T, includes variables that determine the trust relationship between each child and the parent. This takes account of physical proximity, contact, and bonding between parent and child, and is signaled by and shaped by repeated interactions and relative bargaining powers. Putting together these arguments leads us to a child-specific bequest production function of the form, $B_k = B(H_k, P_k, T_k)$, $k = g, s$.

Provided the constrained maximization faced by the parent has an interior solution, the first-order condition for parental bequest related investment for child k is

$$\frac{\partial W}{\partial B_k}\frac{\partial B_k}{\partial H_k} - \lambda = 0,$$

where λ is the Lagrange multiplier for the budget constraint that applies to resources devoted to bequest related investments for the two children. Expressing the first-order conditions in ratio form yields

$$\frac{\partial W/\partial B_s}{\partial W/\partial B_g} = \frac{\partial B_g/\partial H_g}{\partial B_s/\partial H_s}.$$

This expression, which does not include the unobservable λ, corresponds to the standard tangency condition for a constrained maximum, i.e., the slope of the parental welfare function equals the slope of the bequest possibility frontier for child s versus child g. This is illustrated by point A in Figure 6. In this figure, we assume equal concern for both children, so the indifference curves are symmetrical around the 45 degree line from the

origin. We also assume a symmetric bequest possibility frontier. Taken together, these two assumptions imply equal bequests in equilibrium, $B_g^* = B_s^*$.

Because in the previous section we found strong evidence of unequal bequest intentions that favor biological children over stepchildren, we consider changes in the assumptions underlying Figure 6. A straightforward change is to allow for unequal concern. This case is illustrated in Figure 7, with parental preferences favoring the child genetically linked to the parent, that is child g. If the production possibility frontier remains symmetric, a parent with unequal concern favoring the genetic child will divide the estates unequally, in such a way that $B_g^* > B_s^*$.

Another departure from the benchmark of Figure 6 is through a change in the production possibility frontier, while keeping the assumption of equal concern. Parents might have skewed bequest related investments in favor of their genetic children, or genetic children might have greater bargaining power (emotional capital) toward their parents than stepchildren do. Point E^* in Figure 8 illustrates this case. Clearly, if parents also have unequal concern favoring their genetic children, then the bequest division between the stepchild and the genetic child could be even more unequal, as illustrated by point E' in the figure.

The results in subsection 4.F suggest that the situation is less unfavorable to stepchildren if there is greater bonding and trust between them and their stepparents and if stepparents have greater access to the stepchildren's family-specific capital. This bonding and trust is signaled and fostered by the stepparent providing care for the stepchild's children or making direct transfers to the stepchild. When this happens, the bequest possibility frontier can shift and the household will reach the new equilibrium E'' in Figure 8 (under the assumption of equal concern).

6. Conclusion

In the last thirty years, American families have experienced massive changes: a retreat from marriage, increased divorce and remarriage, and growth in cohabitation and nonmarital childbearing. Stepparents and no-contact parents in complex families may be less motivated than parents in traditional families to provide resources to children with whom

they do not share their genes or have not shared their homes. And children in complex families may be less willing than children in traditional families to assist disabled elderly parents, especially those with whom they have no genetic connection or only briefly shared a home.

For younger cohorts, nonmarital fertility of cohabiting couples who break up and repartner will substantially increase the prevalence of complex families. Those in the HRS cohort are older, and their complex families are generally a by-product of divorce and remarriage. The implications for intergenerational transfers of these changes in family structure are difficult to predict because complex families created by cohabitation and nonmarital fertility in younger cohorts may behave differently from those created by divorce and remarriage in older cohorts.

We have shown that bequests are much more unequal now than in the recent past and much more unequal than generally recognized. In noncomplex families (i.e., families with neither stepchildren nor no-contact children), equal bequests are the dominant pattern. In complex families, however, we find substantial inequality in both bequest intentions and actual bequests. We cannot assess the relative importance of genetic ties and contact by studying noncomplex families because in such families all of the children have the same genetic ties with their parents. But the bequest patterns we find in complex families imply that contact trumps genetic ties.

The economics literature on end-of-life transfers assumes that individuals, or at least elderly individuals, make wills. We find instead that parents often fail to write wills and, either by design or default, rely on intestacy law to determine the distribution of their estates. For parents with stepchildren, the effect of relying on intestacy law is to leave everything to genetic and legally-adopted children and nothing to stepchildren. For no-contact parents, the effect of relying on intestacy law is to treat contact and no-contact genetic children equally. If parents understand the most basic provisions of intestacy law, this finding is puzzling. It implies that parents who have had no contact with some of their genetic children are more likely to treat all of their genetic children equally than are parents who have maintained contact with all of their genetic children. We suspect that the absence of wills reflects the disutility of making wills (and contemplating death)

rather than preferences for the distribution mandated by intestacy law. Unfortunately, HRS provides no evidence that speaks to this issue. Regardless of parents' motivations for not making wills, we have shown that focusing exclusively on bequest intentions (i.e., on parents who make wills) provides an incomplete and misleading picture of end-of-life transfers.

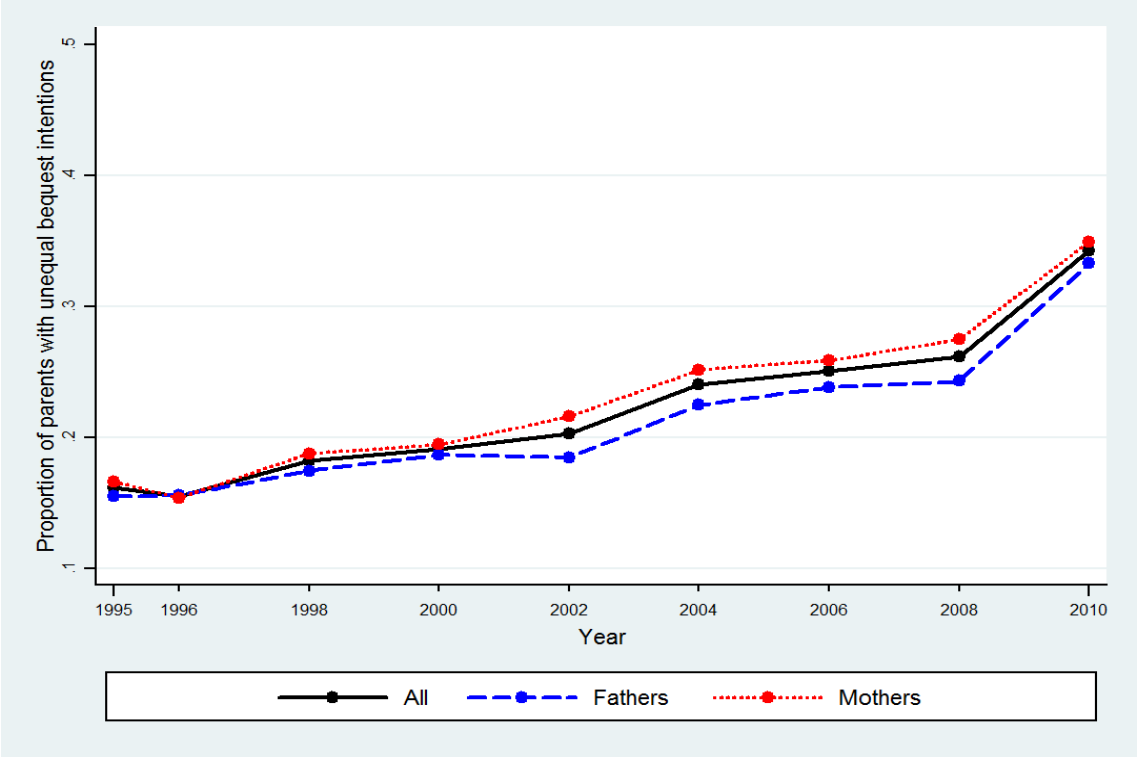

Figure 1: Unequal Bequest Intentions, by Parent's Gender

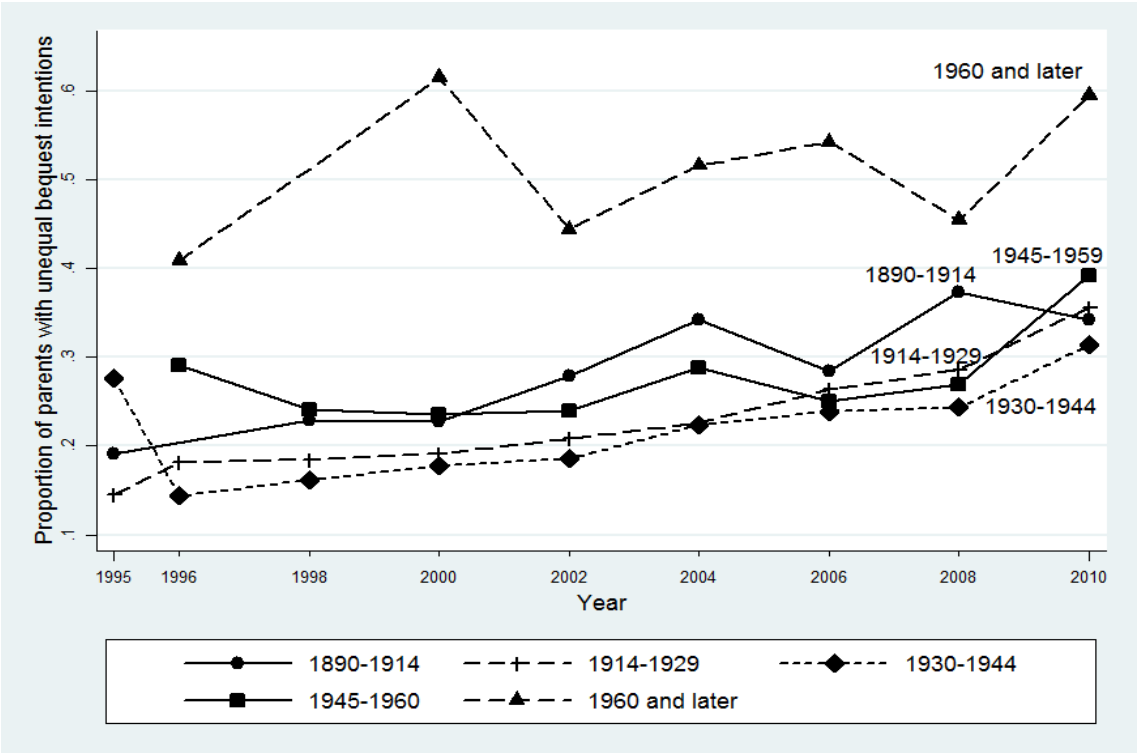

Figure 2: Unequal Bequest Intentions, by Parent's Birth Cohort

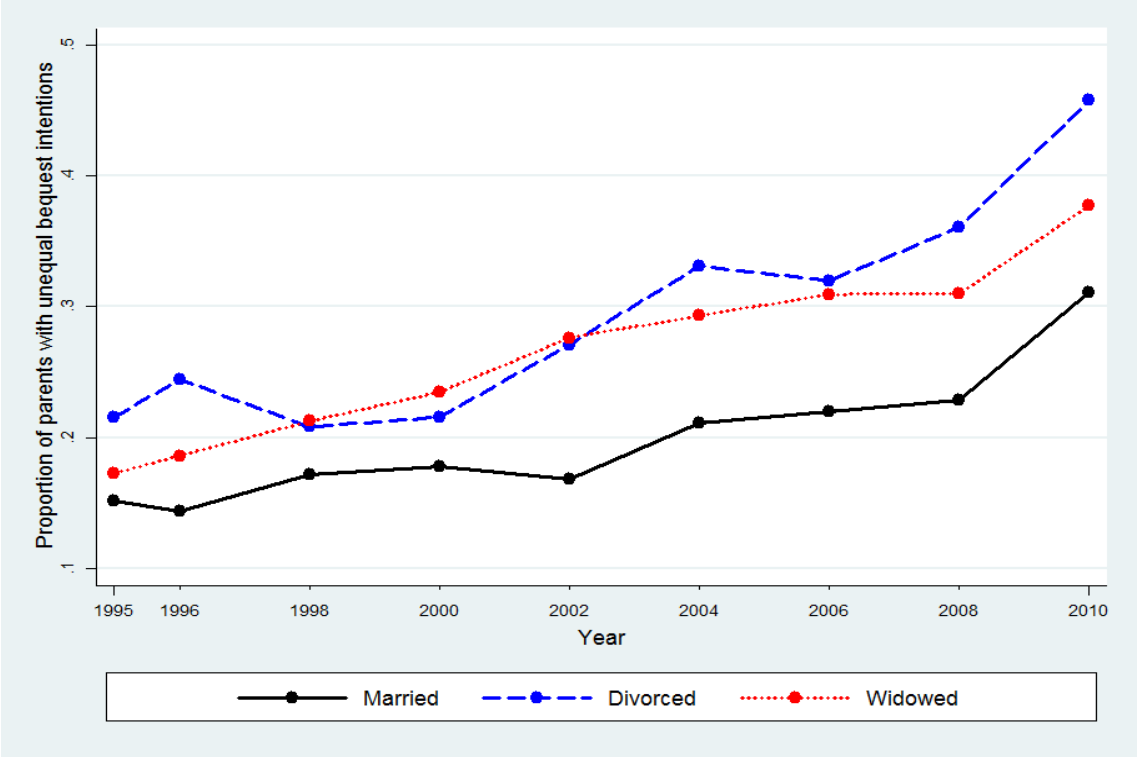

Figure 3: Unequal Bequest Intentions, by Parent's Marital Status

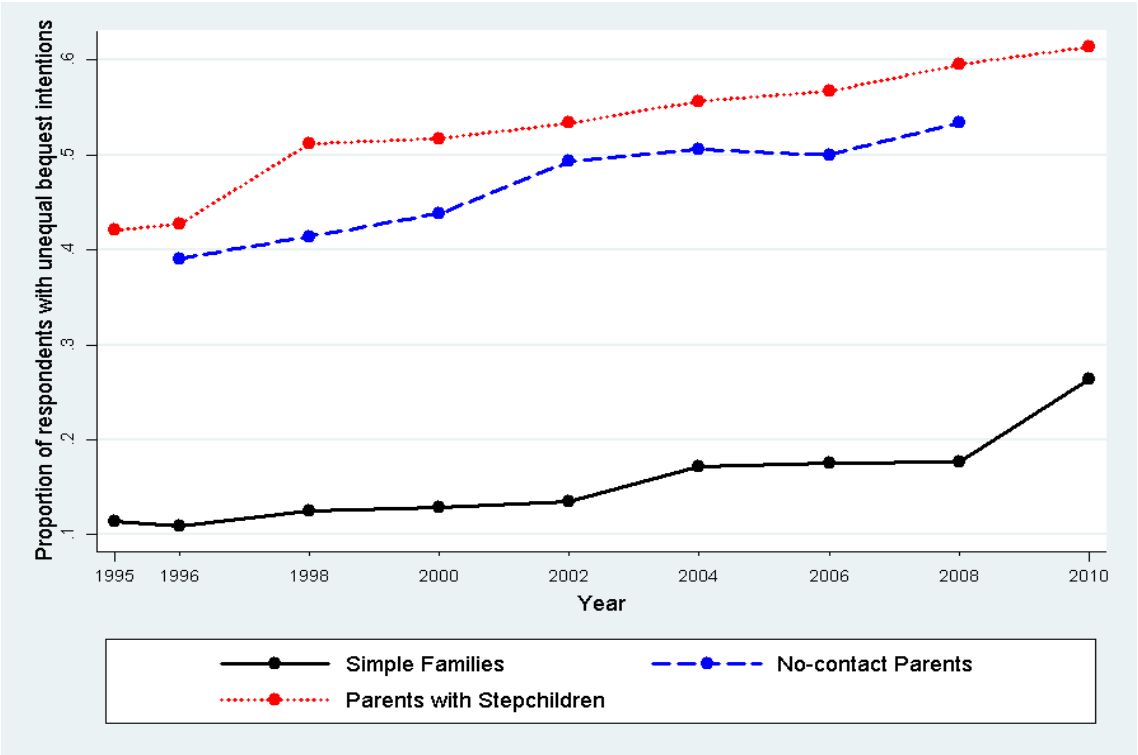

Figure 4: Unequal Bequest Intentions, by the Family Type

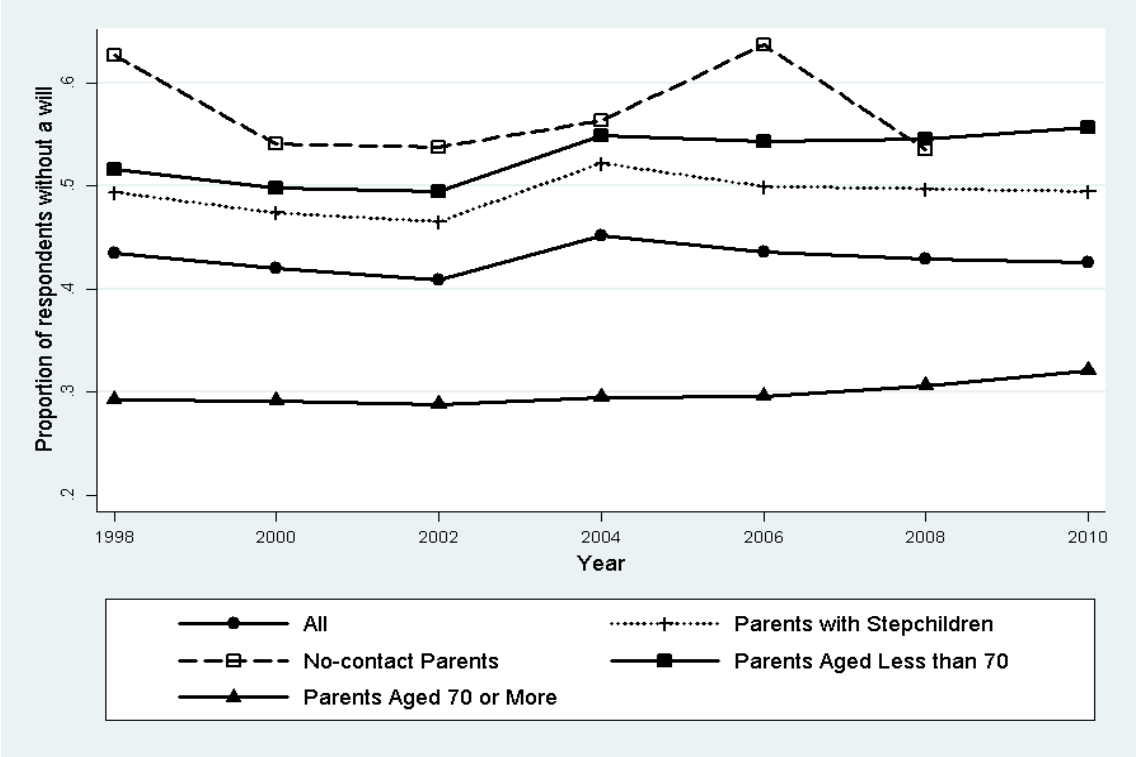

Figure 5: Trends in Intestacy Rates, by Parent's Age and Family Type

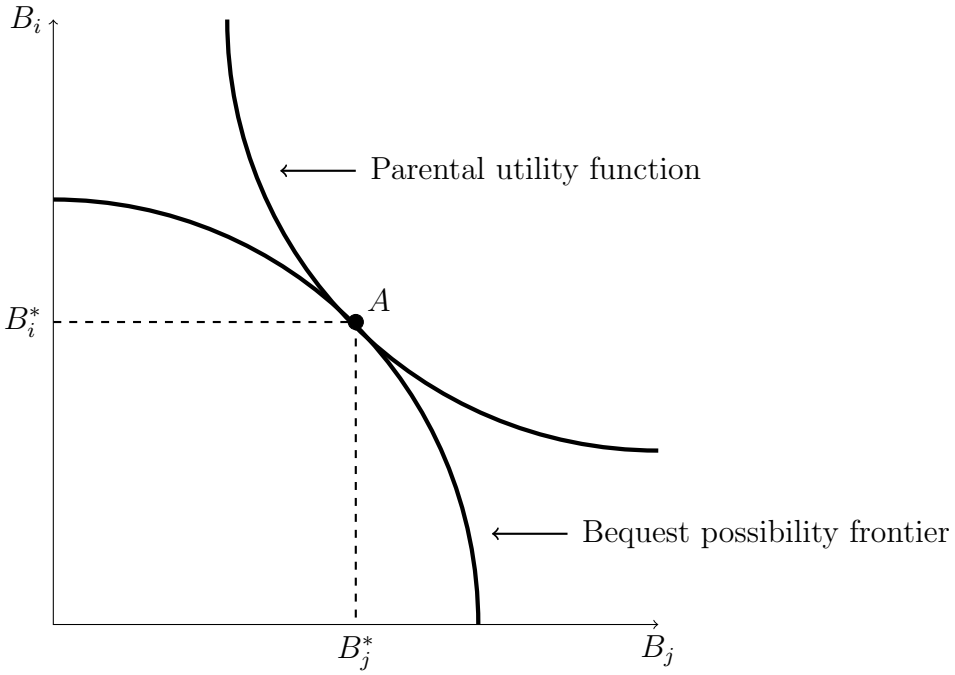

Figure 6: Equal Concern and Symmetric Bequest Possibility Frontier

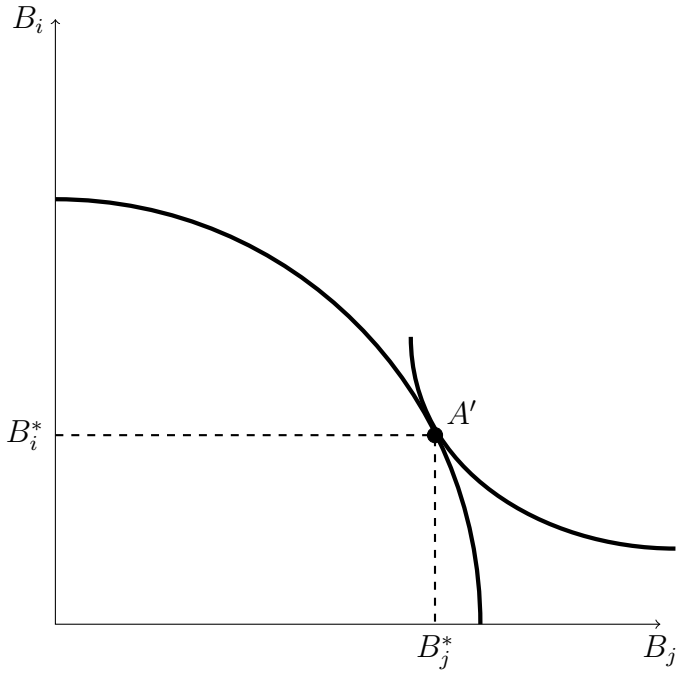

Figure 7: Unequal Concern Favoring Child j and Symmetric Bequest Possibility Frontier

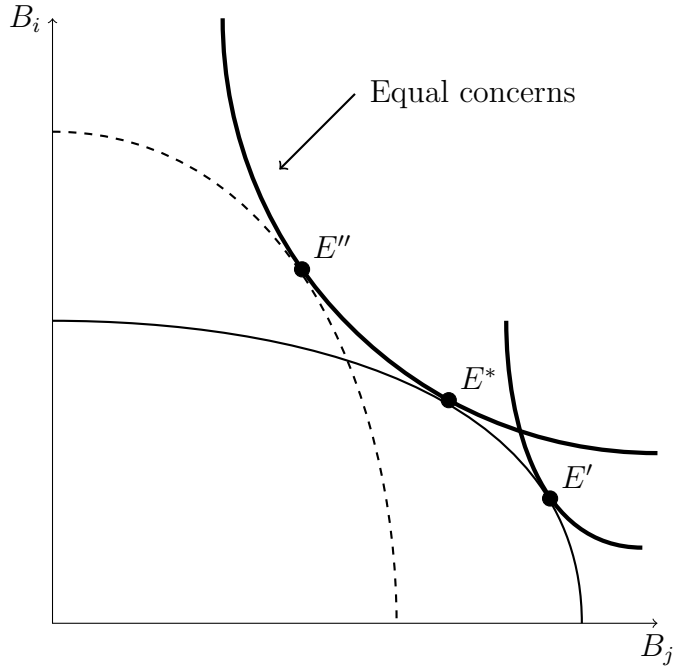

Figure 8: Asymmetric Bequest Possibility Frontiers With and Without Equal Concern

Table 1: Descriptive Statistics – Dependent Variables

	(a)	(b)	(c)	(d)		
	All	Parents with step- and biological children	Parents with biological children only	Difference (b)-(c) (t-value)	N	n
A. No will						
Core files						
All	0.418	0.475	0.406	0.069*** (18.152)	117,189	23,984
Divorced	0.623	0.663	0.617	0.046*** (3.784)	13,703	3,754
Widowed	0.376	0.395	0.373	0.022** (2.580)	27,308	7,679
Exit files						
All	0.375	0.401	0.371	0.030* (1.957)	7,416	7,416
Divorced	0.570	0.587	0.567	0.020 (0.356)	702	702
Widowed	0.348	0.370	0.346	0.024 (0.928)	3,220	3,220
B. Will includes all children						
Core files						
All	0.746	0.462	0.805	-0.343*** (76.840)	60,994	14,275
Divorced	0.734	0.293	0.808	-0.515*** (29.636)	4,363	1,456
Widowed	0.761	0.358	0.834	-0.476*** (52.965)	14,597	4,583
Exit files						
All	0.587	0.618	0.581	0.037* (1.816)	4,567	4,567
Divorced	0.801	0.774	0.806	-0.033 (0.547)	337	337
Widowed	0.856	0.876	0.853	0.022 (0.878)	1,956	1,956
C. Equal intended and actual bequest						
Core files						
All	0.676	0.390	0.735	-0.345*** (71.539)	60,994	14,275
Divorced	0.641	0.245	0.708	-0.462*** (23.747)	4,363	1,456
Widowed	0.679	0.291	0.749	-0.459*** (45.638)	14,597	4,583
Exit files						
All	0.473	0.421	0.484	-0.063*** (2.998)	3,878	3,878
Divorced	0.604	0.453	0.639	-0.186** (2.511)	280	280
Widowed	0.712	0.608	0.729	-0.120*** (3.656)	1,610	1,610

Note: N=number of observations; n=number of individuals. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 2: Descriptive Statistics – Explanatory Variables

	All	Parents with a will	Parents with step- and biological children	Parents with step-children and a will	Parents included in the exit files[a]
	(a)	(b)	(c)	(d)	(e)
1 if has step- and biological children	0.223	0.196	1.000	1.000	0.136
Demographics					
Female	0.564	0.557	0.559	0.573	0.529
Age	68.59	70.76	65.64	68.65	78.17
	(10.59)	(10.32)	(10.81)	(10.66)	(10.39)
1 if white	0.829	0.927	0.797	0.910	0.833
1 if married or partnered	0.644	0.672	0.692	0.699	0.476
1 if separated, divorced or never married	0.123	0.078	0.123	0.082	0.096
1 if widowed	0.233	0.250	0.185	0.218	0.429
Number of marriages	1.355	1.312	1.920	1.951	1.347
	(0.668)	(0.612)	(0.815)	(0.767)	(0.664)
Health					
1 if in poor/fair health	0.297	0.246	0.286	0.242	0.622
Education					
1 if below high school	0.368	0.317	0.350	0.314	0.423
1 if high school	0.341	0.350	0.338	0.349	0.306
1 if college or more	0.292	0.333	0.312	0.337	0.271
Employment					
1 if in the labor force	0.412	0.366	0.459	0.392	0.068
1 if disabled	0.082	0.046	0.099	0.056	0.154
1 if retired	0.506	0.588	0.443	0.551	0.778
Child variables					
Number of children	3.522	3.274	5.004	4.852	3.464
	(2.092)	(1.860)	(2.436)	(2.272)	(2.219)
Number of bio children	3.092	2.889	3.075	2.887	3.129
	(1.791)	(1.551)	(1.878)	(1.691)	(1.993)
Number of stepchildren	0.430	0.384	1.929	1.965	0.335
	(1.149)	(1.077)	(1.741)	(1.682)	(1.102)
Coefficient of within-family variation for children's predicted income[b]	0.411	0.398	0.449	0.433	0.414
	(0.356)	(0.265)	(0.382)	(0.217)	(0.230)

(cont.)

(cont.)

	(a)	(b)	(c)	(d)	(e)
Financial variables					
Real annual household income[c]	26,940 (205,093)	28,271 (157,141)	29,788 (44,663)	32,492 (56,093)	7,630 (18,500)
Real wealth[d]	267,702 (1,268,856)	387,954 (1,543,720)	231,881 (1,084,812)	351,730 (1,370,953)	238,948 (1,521,039)
1 if gave money to at least a child[e]	0.362	0.411	0.379	0.424	0.255
1 if gave money to all children equally[e]	0.079	0.101	0.032	0.415	0.081
N	117,189	68,248	26,111	13,348	7,071
n	23,984	12,763	5,082	2,342	7,071

Note: Figures are means and standard deviations (for continuous variables only) are in parentheses. N=number of observations; n=number of individuals.

[a] Values are from the last year of observation in the core files. For some of the variables, N and n are different from the values given at the bottom of the table. They are available from the authors.

[b] Based on 60,055 observations from 8,776 individuals.

[c] In 1995 values, and based on 74,099 observations from 13,323 respondents.

[d] In 1995 values, and based on 52,078 observations from 10,830 respondents; includes values of financial and real estate properties.

[e] Based on 78,773 observations from 15,493 respondents.

Table 3: Effect of Having Stepchildren on the Probability of Not Having a Will

		Specification				
		(a)	(b)	(c)	(d)	(e)
All parents	Estimate	0.006	0.003	-0.017	-0.014	-0.028
	(s.e.)	(0.020)	(0.024)	(0.020)	(0.023)	(0.030)
	N	117,189	78,773	67,615	51,761	32,199
	n	23,984	21,178	16,198	15,041	9,285
Mothers	Estimate	-0.009	-0.017	-0.051*	-0.045	-0.037
	(s.e.)	(0.029)	(0.033)	(0.030)	(0.032)	(0.036)
	N	66,098	52,419	36,763	33,001	25,084
	n	13,498	12,662	9,055	8,824	6,854
Fathers	Estimate	0.024	0.032	0.011	0.019	0.011
	(s.e.)	(0.026)	(0.033)	(0.025)	(0.033)	(0.056)
	N	51,091	26,354	30,852	18,760	7,115
	n	10,509	8,530	7,152	6,225	2,435
Widows and widowers	Estimate	-0.049	-0.052	-0.026	-0.028	-0.007
	(s.e.)	(0.032)	(0.032)	(0.020)	(0.021)	(0.024)
	N	27,308	26,986	21,135	20,972	16,104
	n	7,679	7,638	6,662	6,637	5,248
Widows	Estimate	-0.074**	-0.069**	-0.043**	-0.041**	-0.019
	(s.e.)	(0.033)	(0.034)	(0.019)	(0.020)	(0.024)
	N	22,416	22,196	17,179	17,073	13,152
	n	5,960	5,935	5,158	5,142	4,085
Widowers	Estimate	0.019	-0.007	0.046	0.022	0.044
	(s.e.)	(0.072)	(0.071)	(0.066)	(0.063)	(0.076)
	N	4,892	4,790	3,956	3,899	2,952
	n	1,725	1,709	1,509	1,500	1,166
Divorced parents	Estimate	0.033	0.048	0.106**	0.105**	0.116**
	(s.e.)	(0.031)	(0.034)	(0.048)	(0.051)	(0.056)
	N	13,703	13,140	10,087	9,853	7,006
	n	3,754	3,653	3,034	2,999	2,118
Divorced mothers	Estimate	-0.019	0.020	0.107	0.097	-0.050
	(s.e.)	(0.054)	(0.051)	(0.073)	(0.078)	(0.138)
	N	8,916	8,690	6,496	6,425	4,715
	n	2,346	2,311	1,878	1,872	1,372
Divorced fathers	Estimate	0.076*	0.082*	0.118*	0.121*	0.195***
	(s.e.)	(0.044)	(0.048)	(0.062)	(0.065)	(0.060)
	N	4,787	4,450	3,591	3,428	2,291
	n	1,411	1,344	1,156	1,127	746

Note: The figures are marginal effects of the parent with stepchildren indicator from random effects probit models. The comparison group is given by parents with biological children only. See the text for an explanation of specifications (a)–(e).

N=number of observations; n=number of individuals. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Effect of No Contacts on the Probability of Not Having a Will

		Specification				
		(a)	(b)	(c)	(d)	(e)
All parents	Estimate	0.145***	0.155***	0.148***	0.152***	0.148***
	(s.e.)	(0.033)	(0.032)	(0.036)	(0.036)	(0.039)
	N	41,075	34,127	24,437	22,450	18,118
	n	12,739	11,868	8,767	8,529	6,927
Mothers	Estimate	0.120***	0.128***	0.126***	0.137***	0.144***
	(s.e.)	(0.039)	(0.038)	(0.043)	(0.044)	(0.047)
	N	33,844	27,895	19,196	17,628	14,381
	n	9,847	9,259	6,557	6,401	5,246
Fathers	Estimate	0.213***	0.223***	0.169***	0.167***	0.137**
	(s.e.)	(0.060)	(0.058)	(0.061)	(0.062)	(0.069)
	N	7,231	6,232	5,241	4,822	3,737
	n	2,900	2,615	2,211	2,129	1,682
Widows and widowers	Estimate	0.196***	0.189***	0.087***	0.084***	0.075**
	(s.e.)	(0.044)	(0.044)	(0.032)	(0.032)	(0.033)
	N	14,384	14,291	11,224	11,164	9,198
	n	5,352	5,331	4,653	4,634	3,804
Widows	Estimate	0.190***	0.183***	0.085**	0.082**	0.076**
	(s.e.)	(0.051)	(0.051)	(0.037)	(0.037)	(0.038)
	N	11,887	11,815	9,167	9,121	7,514
	n	4,237	4,220	3,667	3,652	2,992
Widowers	Estimate	0.203**	0.186**	0.088	0.082	0.059
	(s.e.)	(0.083)	(0.080)	(0.065)	(0.063)	(0.064)
	N	2,497	2,476	2,057	2,043	1,684
	n	1,118	1,114	987	983	813
Divorced parents	Estimate	0.073***	0.075***	0.122***	0.127***	0.124**
	(s.e.)	(0.027)	(0.028)	(0.045)	(0.044)	(0.050)
	N	7,897	7,817	5,893	5,847	4,391
	n	2,792	2,776	2,280	2,264	1,699
Divorced mothers	Estimate	0.0488	0.0525*	0.123**	0.130**	0.141**
	(s.e.)	(0.032)	(0.032)	(0.056)	(0.055)	(0.058)
	N	5,483	5,441	4,026	4,005	3,073
	n	1,851	1,848	1,504	1,499	1,150
Divorced fathers	Estimate	0.131**	0.137**	0.120	0.130*	0.103
	(s.e.)	(0.054)	(0.055)	(0.074)	(0.074)	(0.088)
	N	2,414	2,376	1,867	1,842	1,318
	n	943	930	776	765	549

Note: The figures are marginal effects of the no-contact parent indicator from random effects probit models. See the note to Table 3 for further explanations.

N=number of observations; n=number of individuals. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Effect of Having Stepchildren on the Probability that the Will Includes All Children

		Specification				
		(a)	(b)	(c)	(d)	(e)
All parents	Estimate	-0.279***	-0.311***	-0.305***	-0.328***	-0.385***
	(s.e.)	(0.017)	(0.020)	(0.021)	(0.024)	(0.029)
	N	60,994	39,761	37,446	28,031	19,435
	n	14,275	12,328	9,762	8,956	6,168
Mothers	Estimate	-0.360***	-0.359***	-0.391***	-0.377***	-0.365***
	(s.e.)	(0.022)	(0.026)	(0.030)	(0.032)	(0.034)
	N	33,529	25,862	19,639	17,535	15,302
	n	7,827	7,243	5,267	5,112	4,589
Fathers	Estimate	-0.190***	-0.251***	-0.215***	-0.266***	-0.435***
	(s.e.)	(0.025)	(0.032)	(0.031)	(0.038)	(0.057)
	N	27,465	13,899	17,807	10,496	4,133
	n	6,460	5,091	4,500	3,848	1,581
Widows and widowers	Estimate	-0.421***	-0.398***	-0.393***	-0.374***	-0.377***
	(s.e.)	(0.040)	(0.041)	(0.042)	(0.043)	(0.045)
	N	14,597	14,402	12,620	12,514	11,075
	n	4,583	4,554	4,207	4,187	3,817
Widows	Estimate	-0.444***	-0.433***	-0.419***	-0.408***	-0.410***
	(s.e.)	(0.044)	(0.045)	(0.046)	(0.047)	(0.048)
	N	11,911	11,776	10,247	10,178	9,064
	n	3,548	3,529	3,247	3,235	2,975
Widowers	Estimate	-0.343***	-0.258***	-0.288***	-0.225**	-0.219**
	(s.e.)	(0.101)	(0.010)	(0.104)	(0.101)	(0.107)
	N	2,686	2,626	2,373	2,336	2,011
	n	1,039	1,029	963	955	843
Divorced parents	Estimate	-0.604***	-0.629***	-0.605***	-0.630***	-0.589***
	(s.e.)	(0.068)	(0.073)	(0.078)	(0.080)	(0.097)
	N	4,363	4,172	3,664	3,573	2,960
	n	1,456	1,413	1,257	1,237	994
Divorced mothers	Estimate	-0.495***	-0.477***	-0.467***	-0.469***	-0.462***
	(s.e.)	(0.117)	(0.132)	(0.147)	(0.154)	(0.166)
	N	2,818	2,741	2,385	2,356	2,042
	n	877	863	763	759	645
Divorced fathers	Estimate	-0.633***	-0.678***	-0.623***	-0.660***	-0.581***
	(s.e.)	(0.086)	(0.088)	(0.095)	(0.097)	(0.137)
	N	1,545	1,431	1,279	1,217	918
	n	580	550	494	478	349

Note: See the note to Table 3.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Effect of Having Stepchildren on the Probability that Stepparents Intend to Divide their Estate Equally Among All Children

		Specification				
		(a)	(b)	(c)	(d)	(e)
All parents	Estimate	-0.285***	-0.310***	-0.288***	-0.311***	-0.375***
	(s.e.)	(0.016)	(0.020)	(0.021)	(0.024)	(0.028)
	N	60,994	39,761	37,446	28,031	19,435
	n	14,275	12,328	9,762	8,956	6,168
Mothers	Estimate	-0.371***	-0.365***	-0.376***	-0.358***	-0.347***
	(s.e.)	(0.021)	(0.025)	(0.028)	(0.031)	(0.033)
	N	33,529	25,862	19,639	17,535	15,302
	n	7,827	7,243	5,267	5,112	4,589
Fathers	Estimate	-0.185***	-0.233***	-0.195***	-0.246***	-0.427***
	(s.e.)	(0.025)	(0.032)	(0.031)	(0.038)	(0.051)
	N	27,465	13,899	17,807	10,496	4,133
	n	6,460	5,091	4,500	3,848	1,581
Widows and widowers	Estimate	-0.404***	-0.386***	-0.382***	-0.362***	-0.357***
	(s.e.)	(0.038)	(0.039)	(0.041)	(0.041)	(0.043)
	N	14,597	14,402	12,620	12,514	11,075
	n	4,583	4,554	4,207	4,187	3,817
Widows	Estimate	-0.422***	-0.413***	-0.404***	-0.392***	-0.386***
	(s.e.)	(0.041)	(0.042)	(0.044)	(0.045)	(0.047)
	N	11,911	11,776	10,247	10,178	9,064
	n	3,548	3,529	3,247	3,235	2,975
Widowers	Estimate	-0.325***	-0.265***	-0.275***	-0.225**	-0.206*
	(s.e.)	(0.096)	(0.100)	(0.102)	(0.103)	(0.111)
	N	2,686	2,626	2,373	2,336	2,011
	n	1,039	1,029	963	955	843
Divorced parents	Estimate	-0.468***	-0.502***	-0.478***	-0.497***	-0.469***
	(s.e.)	(0.060)	(0.064)	(0.069)	(0.071)	(0.085)
	N	4,363	4,172	3,664	3,573	2,960
	n	1,456	1,413	1,257	1,237	994
Divorced mothers	Estimate	-0.368***	-0.370***	-0.324**	-0.303**	-0.284*
	(s.e.)	(0.108)	(0.121)	(0.132)	(0.140)	(0.152)
	N	2,818	2,741	2,385	2,356	2,042
	n	877	863	763	759	645
Divorced fathers	Estimate	-0.468***	-0.510***	-0.493***	-0.523***	-0.524***
	(s.e.)	(0.077)	(0.079)	(0.084)	(0.085)	(0.114)
	N	1,545	1,431	1,279	1,217	918
	n	580	550	494	478	349

Note: See the note to Table 3.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Changes in Parents' Bequest Intentions

	Transition					
	From 'no will' to 'will'		From 'not all children in the will' to 'all children in the will'		From 'not all children in the will' to 'all children equally in the will'	
	(a)	(b)	(c)	(d)	(e)	(f)
Panel A: Parents with Stepchildren						
Parent has stepchildren	0.001	0.016	-0.085***	-0.083***	-0.078***	-0.058**
	(0.009)	(0.017)	(0.016)	(0.027)	(0.015)	(0.025)
Parent has stepchildren ×		0.012		-0.238***		-0.169***
from married to divorced		(0.039)		(0.032)		(0.048)
Parent has stepchildren ×		-0.012		-0.150***		-0.113***
from married to widowed		(0.022)		(0.029)		(0.029)
N	22,455	8,146	8,759	4,243	11,470	5,279
n	7,945	4,076	4,212	2,522	5,290	3,089
Panel B: No-contact Parents						
No-contact parent	-0.007	-0.013	-0.114***	-0.124**	-0.112***	-0.127***
	(0.007)	(0.023)	(0.019)	(0.054)	(0.016)	(0.045)
No-contact parent ×		0.169		-0.311***		-0.205*
from married to divorced		(0.118)		(0.076)		(0.111)
No-contact parent ×		0.090		-0.063		-0.089
from married to widowed		(0.060)		(0.098)		(0.083)
N	10,392	2,402	2,553	867	3,717	1,136
n	4,529	1,455	1,604	647	2,211	840
Panel C: Widowed Parents and Parents with Stepchildren						
Widowed parent	0.099***	0.114***	0.083***	0.147***	0.050**	0.085***
	(0.016)	(0.020)	(0.024)	(0.032)	(0.020)	(0.025)
Parent has stepchildren		0.039*		-0.114***		-0.091***
		(0.022)		(0.035)		(0.031)
Widowed parent ×		-0.032		-0.127***		-0.092***
Parent has stepchildren		(0.021)		(0.035)		(0.033)
N	4,191	4,191	2,336	2,336	2,917	2,917
n	2,167	2,167	1,448	1,448	1,776	1,776
Panel D: Widowed Parents and No-contact Parents						
Widowed parent	0.112***	0.101***	0.168***	0.199***	0.092***	0.128***
	(0.020)	(0.025)	(0.035)	(0.049)	(0.029)	(0.041)
No-contact parent		0.001		-0.141***		-0.133***
		(0.025)		(0.054)		(0.046)
Widowed parent ×		0.070		-0.032		-0.075
no-contact parent		(0.058)		(0.103)		(0.087)
N	2,848	1,979	1,246	786	1,704	1,043
n	1,507	1,183	826	589	1,111	774

Note: See the notes to Tables 3. All figures are computed on the core files.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Effect of Having Stepchildren on Actual Bequest Decisions from the Exit Files

Probability of:		No will		Inclusion of all children in the will		Equal division	
		(a)	(b)	(a)	(b)	(a)	(b)
All parents	Estimate	-0.003	0.007	-0.009	0.075**	-0.093***	-0.043
	(s.e.)	(0.023)	(0.024)	(0.031)	(0.033)	(0.031)	(0.035)
	N	7,674	7,221	3,952	3,753	3,952	3,753
Mothers	Estimate	-0.015	-0.020	0.003	0.033	-0.045	-0.029
	(s.e.)	(0.038)	(0.040)	(0.050)	(0.049)	(0.053)	(0.056)
	N	4,052	3,833	1,951	1,861	1,951	1,861
Fathers	Estimate	-0.013	0.022	0.031	0.102**	-0.077**	-0.043
	(s.e.)	(0.029)	(0.030)	(0.039)	(0.044)	(0.036)	(0.041)
	N	3,622	3,385	2,001	1,890	2,001	1,890
Widowed parents	Estimate	0.022	0.019	0.048	0.032	-0.078	-0.094*
	(s.e.)	(0.039)	(0.041)	(0.032)	(0.036)	(0.053)	(0.057)
	N	3,233	3,134	1,597	1,548	1,597	1,548
Widows	Estimate	0.033	0.018	0.060	0.054	0.004	0.001
	(s.e.)	(0.050)	(0.052)	(0.046)	(0.046)	(0.067)	(0.068)
	N	2,428	2,350	1,169	1,132	1,169	1,132
Widowers	Estimate	-0.035	-0.002	-0.031	-0.068	-0.265***	-0.352***
	(s.e.)	(0.067)	(0.070)	(0.056)	(0.070)	(0.091)	(0.101)
	N	805	783	428	415	428	415
Divorced parents	Estimate	0.022	0.071	-0.071	-0.039	-0.228	-0.216
	(s.e.)	(0.086)	(0.097)	(0.123)	(0.121)	(0.139)	(0.145)
	N	715	684	281	273	281	273
Divorced mothers	Estimate	0.195	0.249	-0.138	-0.137	-0.418*	-0.473**
	(s.e.)	(0.164)	(0.176)	(0.231)	(0.222)	(0.222)	(0.211)
	N	387	376	144	142	144	142
Divorced fathers	Estimate	-0.032	0.018	-0.024	0.049	-0.168	-0.102
	(s.e.)	(0.101)	(0.115)	(0.155)	(0.153)	(0.178)	(0.191)
	N	328	307	137	131	137	131

Note: See the text for an explanation of specifications (a)–(b).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Probability that a Stepchild is Explicitly Mentioned in His/Her Stepparent's Will

	(a)	(b)	(c)	(d)	(e)
Mean of dependent variable	0.254	0.254	0.239	0.262	0.261
Stepparent has own	-0.042***	-0.042***	-0.031**	-0.035**	-0.035***
biological children	(0.014)	(0.014)	(0.014)	(0.017)	(0.017)
Years spent with stepparent	0.005***	0.005***	0.004***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age at marriage: 0-6[a]	-0.006	-0.006	0.040*	0.067**	0.073**
	(0.016)	(0.016)	(0.023)	(0.031)	(0.031)
Age at marriage: 7-12[a]	-0.015	-0.015	-0.001	0.014	0.018
	(0.013)	(0.013)	(0.017)	(0.022)	(0.022)
Age at marriage: 13-18[a]	-0.004	-0.004	0.010	0.010	0.008
	(0.010)	(0.010)	(0.013)	(0.016)	(0.016)
Stepchild is female	0.008	0.008	0.012	0.074***	0.063***
	(0.006)	(0.006)	(0.007)	(0.011)	(0.012)
Age of stepchild	-0.001	-0.001	0.000	-0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stepparent is female	0.001	0.003	0.016	0.002	-0.003
	(0.010)	(0.010)	(0.011)	(0.014)	(0.014)
Stepparent age	0.004***	0.004***	0.003***	0.003***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stepparent is in	-0.045***	-0.045***	-0.057***	-0.059***	-0.056***
poor/fair health	(0.007)	(0.007)	(0.008)	(0.010)	(0.010)
Stepparent takes care		0.064***	0.082***	0.078**	0.079**
of stepchild's child(ren)		(0.019)	(0.029)	(0.032)	(0.032)
Stepchild is main recipient			0.143***	0.128***	0.127***
of inter vivos transfers			(0.021)	(0.024)	(0.024)
Log of stepchild's income				0.103***	0.128***
				(0.011)	(0.013)
Stepchild's predicted income is below biological children's income by:					
1–49 percent					0.061***
					(0.018)
50+ percent					0.037***
					(0.014)
N	26,983	26,983	13,904	11,187	11,106
n	13,288	13,288	8,762	7,305	7,268

Note: Figures are marginal effects from probit regressions. Standard errors are in parentheses. N=number of observations; n=number of stepchildren.

[a] The age reported here refers to the age of the stepchild at the time in which his/her parent formed a partnership with his/her stepparent (who writes the will). The reference category is 18 years or more.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Probability that a Genetic Child is Explicitly Mentioned in His/Her No-contact or Infrequent-contact Parent's Will

	(a)	(b)	(c)	(d)
Mean of dependent variable	0.428	0.410	0.431	0.431
Frequency of contacts (base=frequent)				
Infrequent	-0.154***	-0.140***	-0.169***	-0.131**
	(0.007)	(0.009)	(0.045)	(0.053)
No contact	-0.236***	-0.213***	-0.312***	-0.271***
	(0.006)	(0.009)	(0.018)	(0.037)
Parent is female	0.033***	0.016*	0.034*	0.031*
	(0.008)	(0.010)	(0.017)	(0.018)
Parent age	0.020***	0.018***	0.020***	0.020***
	(0.000)	(0.001)	(0.001)	(0.001)
Child is female	0.004	0.127***	0.100***	0.100***
	(0.005)	(0.007)	(0.011)	(0.011)
Child age	0.000	-0.001*	-0.001	-0.001
	(0.000)	(0.001)	(0.001)	(0.001)
Parent is married	0.021***	-0.002	-0.132***	-0.129***
	(0.006)	(0.007)	(0.019)	(0.019)
Parent married more than once	-0.091***	-0.065***	-0.065***	-0.066***
	(0.007)	(0.008)	(0.013)	(0.013)
Parent takes care of child's children		0.002	-0.007	0.000
		(0.009)	(0.013)	(0.013)
Child is main recipient of inter vivos transfers		0.221***	0.189***	0.189***
		(0.010)	(0.014)	(0.014)
Log of child's income		0.205***	0.186***	0.186***
		(0.007)	(0.010)	(0.010)
Child is not spouse's genetic child			-0.084***	-0.065***
			(0.015)	(0.016)
Child is not spouse's genetic child × infrequent contacts				-0.122***
				(0.044)
Child is not spouse's genetic child × no contacts				-0.263***
				(0.031)
N	157,173	94,003	39,300	39,300
n	73,522	54,423	26,902	26,902
p-value[a]	0.0000	0.0000	0.0018	0.0375

Note: Figures are marginal effects and standard errors are in parentheses.

[a] Refers to the p-value of the test of equality between the coefficients of "Infrequent contacts" and "No contacts".

N=number of observations; n=number of children.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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Appendix

Table A1: Descriptive Statistics – Dependent Variables

	(a)	(b)	(c)	(d)		
	All	Parents have no contact w. at least one child	Parents have contacts with all children	Difference (b)-(c) (t-value)	N	n
A. No will						
All	0.446	0.572	0.421	0.152*** (23.282)	41,075	12,739
Divorced	0.627	0.698	0.602	0.096*** (7.759)	7,897	2,468
Widowed	0.391	0.548	0.360	0.188*** (17.377)	14,384	4,073
B. Will includes all children						
All	0.822	0.657	0.849	-0.191*** (24.725)	19,811	5,734
Divorced	0.820	0.603	0.885	-0.282*** (16.104)	2,473	657
Widowed	0.832	0.605	0.868	-0.263*** (21.441)	7,461	2,045
C. Equal intended bequest						
All	0.756	0.570	0.786	-0.216*** (24.937)	19,811	5,734
Divorced	0.742	0.507	0.811	-0.304*** (15.131)	2,473	657
Widowed	0.751	0.508	0.789	-0.281*** (19.765)	7,461	2,045

Note: N=number of observations; n=number of individuals. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$. All figures are calculated on the core files.

Table A2: Effect of No Contacts on the Probability that the Will Includes All Children

		Specification				
		(a)	(b)	(c)	(d)	(e)
All parents	Estimate	-0.194***	-0.204***	-0.227***	-0.226***	-0.192***
	(s.e.)	(0.015)	(0.017)	(0.020)	(0.021)	(0.020)
	N	19,811	15,949	12,460	11,354	10,724
	n	6,920	6,365	4,842	4,680	4,470
Mothers	Estimate	-0.167***	-0.179***	-0.201***	-0.199***	-0.175***
	(s.e.)	(0.017)	(0.019)	(0.022)	(0.023)	(0.022)
	N	16,449	13,116	9,838	8,986	8,572
	n	5,418	5,013	3,632	3,529	3,404
Fathers	Estimate	-0.287***	-0.290***	-0.302***	-0.303***	-0.249***
	(s.e.)	(0.038)	(0.042)	(0.045)	(0.048)	(0.046)
	N	3,362	2,833	2,622	2,368	2,152
	n	1,503	1,353	1,210	1,151	1,066
Widows and widowers	Estimate	-0.258***	-0.255***	-0.236***	-0.230***	-0.194***
	(s.e.)	(0.028)	(0.028)	(0.030)	(0.029)	(0.027)
	N	7,461	7,401	6,515	6,472	6,221
	n	3,075	3,058	2,839	2,825	2,745
Widows	Estimate	-0.230***	-0.229***	-0.209***	-0.204***	-0.168***
	(s.e.)	(0.030)	(0.030)	(0.031)	(0.031)	(0.028)
	N	6,106	6,058	5,303	5,270	5,081
	n	2,415	2,400	2,226	2,215	2,157
Widowers	Estimate	-0.345***	-0.338***	-0.331***	-0.323***	-0.295***
	(s.e.)	(0.076)	(0.076)	(0.088)	(0.089)	(0.087)
	N	1,355	1,343	1,212	1,202	1,140
	n	661	659	613	610	588
Divorced parents	Estimate	-0.243***	-0.244***	-0.240***	-0.240***	-0.198***
	(s.e.)	(0.043)	(0.043)	(0.047)	(0.047)	(0.045)
	N	2,473	2,441	2,115	2,093	1,856
	n	1,012	1,004	899	891	783
Divorced mothers	Estimate	-0.213***	-0.222***	-0.217***	-0.232***	-0.217***
	(s.e.)	(0.052)	(0.053)	(0.059)	(0.060)	(0.060)
	N	1,678	1,661	1,447	1,437	1,313
	n	658	655	591	588	533
Divorced fathers	Estimate	-0.329***	-0.321***	-0.305***	-0.279***	-0.169**
	(s.e.)	(0.077)	(0.078)	(0.080)	(0.077)	(0.073)
	N	795	780	668	656	543
	n	354	349	308	303	250

Note: See the notes to Tables 3 and 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: Effect of No Contacts on the Probability that Parents Intend to Divide their Estate Equally Among All Children

		Specification				
		(a)	(b)	(c)	(d)	(e)
All parents	Estimate	-0.251***	-0.265***	-0.298***	-0.298***	-0.273***
	(s.e.)	(0.016)	(0.018)	(0.021)	(0.022)	(0.022)
	N	19,811	15,949	12,460	11,354	10,724
	n	6,920	6,365	4,842	4,680	4,470
Mothers	Estimate	-0.226***	-0.242***	-0.284***	-0.285***	-0.266***
	(s.e.)	(0.018)	(0.021)	(0.024)	(0.026)	(0.026)
	N	16,449	13,116	9,838	8,986	8,572
	n	5,418	5,013	3,632	3,529	3,404
Fathers	Estimate	-0.334***	-0.338***	-0.327***	-0.325***	-0.293***
	(s.e.)	(0.037)	(0.040)	(0.042)	(0.044)	(0.045)
	N	3,362	2,833	2,622	2,368	2,152
	n	1,503	1,353	1,210	1,151	1,066
Widows and widowers	Estimate	-0.339***	-0.338***	-0.337***	-0.331***	-0.301***
	(s.e.)	(0.029)	(0.029)	(0.031)	(0.031)	(0.031)
	N	7,461	7,401	6,515	6,472	6,221
	n	3,075	3,058	2,839	2,825	2,745
Widows	Estimate	-0.324***	-0.325***	-0.320***	-0.316***	-0.284***
	(s.e.)	(0.032)	(0.032)	(0.035)	(0.035)	(0.034)
	N	6,106	6,058	5,303	5,270	5,081
	n	2,415	2,400	2,226	2,215	2,157
Widowers	Estimate	-0.387***	-0.382***	-0.399***	-0.389***	-0.366***
	(s.e.)	(0.066)	(0.066)	(0.071)	(0.072)	(0.072)
	N	1,355	1,343	1,212	1,202	1,140
	n	661	659	613	610	588
Divorced parents	Estimate	-0.331***	-0.333***	-0.320***	-0.326***	-0.312***
	(s.e.)	(0.042)	(0.042)	(0.047)	(0.047)	(0.049)
	N	2,473	2,441	2,115	2,093	1,856
	n	1,012	1,004	899	891	783
Divorced mothers	Estimate	-0.312***	-0.321***	-0.309***	-0.333***	-0.342***
	(s.e.)	(0.054)	(0.055)	(0.061)	(0.062)	(0.064)
	N	1,678	1,661	1,447	1,437	1,313
	n	658	655	591	588	533
Divorced fathers	Estimate	-0.368***	-0.363***	-0.329***	-0.310***	-0.269***
	(s.e.)	(0.069)	(0.070)	(0.074)	(0.073)	(0.077)
	N	795	780	668	656	543
	n	354	349	308	303	250

Note: See the notes to Tables 3 and 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Effect of Having Stepchildren and No Contacts on the Probability that Parents Intend to Divide their Estate Equally Among All Children — Alternative Sample Selection

		Specification				
		(a)	(b)	(c)	(d)	(e)
A. Parents with Stepchildren						
All parents	Estimate	-0.298***	-0.327***	-0.290***	-0.322***	-0.396***
	(s.e.)	(0.018)	(0.022)	(0.023)	(0.026)	(0.031)
	N	53,105	35,288	33,066	25,207	17,868
	n	13,504	11,528	9,255	8,418	5,870
B. No-contact Parents						
All parents	Estimate	-0.212***	-0.229***	-0.260***	-0.259***	-0.236***
	(s.e.)	(0.017)	(0.019)	(0.023)	(0.024)	(0.023)
	N	17,795	14,482	11,483	10,518	9,956
	n	6,574	6,003	4,624	4,467	4,281

Note: The estimating sample includes only parents with two or more children and a will that mentions *all* of the children. For other explanations, see the notes to Tables 3 and 4.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: Probability that a Male Stepchild is Explicitly Mentioned in His/Her Stepparent's Will

	(a)	(b)	(c)	(d)	(e)
Mean of dependent variable	0.261	0.233	0.259	0.259	0.258
Stepparent has own	-0.060***	-0.060***	-0.048***	-0.065***	-0.073***
biological children	(0.018)	(0.018)	(0.018)	(0.023)	(0.024)
Years spent with stepparent	0.004***	0.004***	0.003***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age at marriage: 0-6[a]	-0.016	-0.016	0.023	0.040	0.047
	(0.021)	(0.021)	(0.029)	(0.039)	(0.040)
Age at marriage: 7-12[a]	-0.000	-0.001	0.040	0.068*	0.073**
	(0.019)	(0.019)	(0.026)	(0.035)	(0.035)
Age at marriage: 13-18[a]	-0.016	-0.015	-0.000	0.003	0.001
	(0.013)	(0.013)	(0.016)	(0.021)	(0.021)
Age of stepchild	0.000	0.000	0.002*	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stepparent is female	0.003	0.005	0.033**	0.015	0.007
	(0.013)	(0.013)	(0.014)	(0.019)	(0.019)
Stepparent age	0.003***	0.003***	0.002**	0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stepparent is in	-0.060***	-0.059***	-0.080***	-0.098***	-0.095***
poor/fair health	(0.008)	(0.008)	(0.010)	(0.012)	(0.012)
Stepparent takes care		0.090***	0.099**	0.073	0.074
of stepchild's child(ren)		(0.030)	(0.045)	(0.048)	(0.048)
Stepchild is main recipient			0.164***	0.165***	0.160***
of inter vivos transfers			(0.031)	(0.036)	(0.036)
Log of stepchild's income				0.095***	0.131***
				(0.015)	(0.018)
Stepchild's predicted income is below biological children's income by:					
1–49 percent					0.103***
					(0.036)
50+ percent					0.046**
					(0.019)
N	13,598	13,598	6,989	5,616	5,562
n	8,198	8,198	5,001	4,112	4,080

Note: Figures are marginal effects from probit regressions. Standard errors are in parentheses. N=number of observations; n=number of stepchildren.

[a] The age reported here refers to the age of the stepchild at the time in which his parent formed a partnership with his stepparent (who writes the will). The reference category is 18 years or more.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Probability that a Female Stepchild is Explicitly Mentioned in His/Her Stepparent's Will

	(a)	(b)	(c)	(d)	(e)
Mean of dependent variable	0.272	0.245	0.265	0.265	0.265
Stepparent has own	-0.028	-0.028	-0.001	-0.005	-0.003
biological children	(0.018)	(0.018)	(0.018)	(0.022)	(0.022)
Years spent with stepparent	0.006***	0.006***	0.004***	0.006***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age at marriage: 0-6[a]	-0.004	-0.003	0.048	0.081*	0.085*
	(0.024)	(0.024)	(0.034)	(0.045)	(0.046)
Age at marriage: 7-12[a]	-0.025	-0.024	-0.029	-0.025	-0.021
	(0.018)	(0.018)	(0.021)	(0.027)	(0.028)
Age at marriage: 13-18[a]	0.001	0.001	0.016	0.009	0.007
	(0.015)	(0.015)	(0.019)	(0.023)	(0.023)
Age of stepchild	-0.002**	-0.002*	-0.001	-0.002	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stepparent is female	0.005	0.007	0.002	-0.006	-0.008
	(0.014)	(0.014)	(0.015)	(0.019)	(0.019)
Stepparent age	0.005***	0.005***	0.005***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stepparent is in	-0.038***	-0.038***	-0.034***	-0.024	-0.021
poor/fair health	(0.010)	(0.010)	(0.011)	(0.015)	(0.015)
Stepparent takes care		0.060**	0.062*	0.081*	0.081*
of stepchild's child(ren)		(0.026)	(0.037)	(0.045)	(0.045)
Stepchild is main recipient			0.156***	0.122***	0.122***
of inter vivos transfers			(0.030)	(0.033)	(0.033)
Log of stepchild's income				0.129***	0.142***
				(0.016)	(0.019)
Stepchild's predicted income is below biological children's income by:					
1–49 percent					0.031
					(0.022)
50+ percent					0.019
					(0.021)
N	13,385	13,385	6,915	5,571	5,544
n	8,198	8,198	5,082	4,173	4,159

Note: Figures are marginal effects from probit regressions. Standard errors are in parentheses. N=number of observations; n=number of stepchildren.

[a] The age reported here refers to the age of the stepchild at the time in which her parent formed a partnership with her stepparent (who writes the will). The reference category is 18 years or more.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.