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Parenting Other Men's Children
Costs, Benefits, and Consequences

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A basic issue in the life history of the human male is his patterned allocation of resources available for reproduction. He is faced with two fundamental tradeoffs (Low 1978; Sterns 1992; Trivers 1972). The first is between investment in himself (somatic effort or future reproductive effort) or in producing offspring (present reproductive effort), and the second is a tradeoff within reproductive effort between investment in mating opportunities and parental investment in offspring already produced (Clutton-Brock 1991). Mating effort promotes higher numbers of offspring and parental investment promotes higher quality of offspring.

For higher primate species, investment in self (somatic effort) mostly involves good nutrition, which promotes healthy immune function, stable growth, and large completed body size in combination with the acquisition of social networks and resource acquisition skills (Charnov 1993; Charnov and Berrigan 1993; Kaplan 1996). For humans, however, we speak more formally of the concept of embodied capital, that is, the stock of attributes embodied in an individual that can be converted, either directly or, more commonly, in combination with other forms of capital, into fitness-enhancing commodities (Becker 1991, 1993; Kaplan 1994; Kaplan et al. 1995). Embodied capital includes investment in body mass and complexity, skills and knowledge, and social capital. Parental investment in the embodied and social capital of offspring can affect their survival, future income, and social status. The latter two, in turn, form the budget for each offspring's investment in its own and the next generation's reproduction.

Among humans the combination of determinant growth (that is, growth which does not continue indefinitely) and the particular pattern of intergenerational support in which parental and senior generations are committed to feed juveniles tends to concentrate the acquisition of embodied capital into the juvenile and early adult years (Borgerhoff Mulder 1992; Kaplan 1994, 1996; Lancaster and Lancaster 1987). This leads to a life history strategy in which resources that early on are exclusively invested in somatic growth eventually become largely diverted into reproduction. The timing of this shift from somatic growth to finding mates and

producing offspring varies according to environmental conditions that determine how rapidly embodied capital can be acquired and how much is sufficient to the tasks of reproduction in the local context. Our interest here is to analyze the fertility and parental investment patterns of men living in a contemporary city in the United States (Albuquerque) to see how well these two tradeoffs describe issues faced by contemporary men in a world with a monetized economy, competitive labor markets, and very low fertility based on birth control.

Following Lazarus (1990) we propose that a fundamental tradeoff faced by these contemporary men can be directly linked to the conflict between investing resources in finding mates who will bear children and investing in children already produced. Since the number of children that a man can produce may be increased by having more than one mate (because of the inevitable limitations placed on each woman by her reproductive biology), men who desert and do not help to raise their own children have the opportunity to produce more offspring with other women. We have taken "ceasing to live with a child" as a measure we can use to capture the withdrawal of male parental resources both in terms of time and money during a child's development. Of course, we recognize that many men are conscientious about investing time and financial resources in their children even after divorce; however, marital breakup does lead to a reduction in the total time a man spends with his genetic offspring (Cooksey and Fondell 1996). Furthermore, the longitudinal study by Bloom, Conrad, and Miller (1996) of men in the United States has shown that men who fail to pay court-ordered child support are more likely to remarry and have more children than men who comply with their child support orders. "Ceasing to live with a child" cannot lead to future investment in more children if the man does so because of his own death. Therefore, our measure is about the withdrawal or reduction of male parental investment because of desertion or divorce. It is generally recognized that desertion, divorce, and remarriage as practiced by a man can both extend the length of his reproductive period, if he marries progressively younger women, and promote his total fertility. In effect, it is a form of polygyny, or serial monogamy, which raises male fertility in the same way as polygyny in more traditional human societies (Lockard and Adams 1981; Mackey 1980).

Figure 9.1 presents a causal pathway that describes the tradeoff that men face between quality and quantity of offspring when they make a decision to remain or to cease to live with a child before it is fully grown. Divorce or desertion has two main effects on a man's children: it may raise a man's completed fertility (quantity) through the formation of additional mateships and the likelihood of producing more children. In turn, it should reduce the total amount invested in each child because of the diversion of resources to mating effort and the probable increase in the total number of children having to share the same limited pot of father's resources (Weiss and Willis 1985).

Such division will reduce the quality of each child as measured by educational and economic outcomes. Hence, the predicted effects of divorce/desertion or ceas-

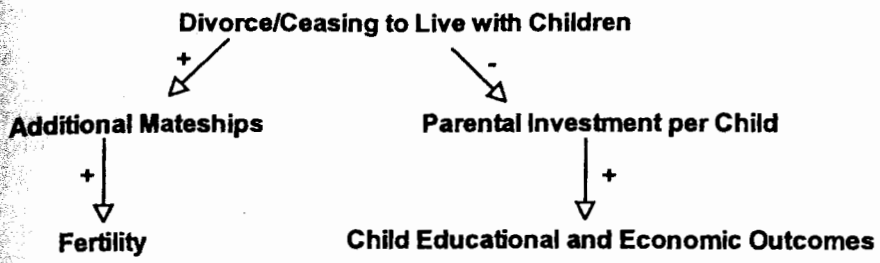

Figure 9.1. Ceasing to live with children as a tradeoff between quantity and quality of offspring.

ing to live with a child are both positive and negative. There is really only one major tradeoff: both the length and intensity of parenting affect child quality, and reductions in investment lower child quality but also have the potential to raise a man's fertility through investment in more mateships.

METHODS: THE ALBUQUERQUE MEN DATA SET

Between 1990 and 1993 Kaplan and Lancaster's Albuquerque Men project completed 7,107 short (4-page) and 1,325 long (96-page) structured interviews with a representative, random sample of men in Albuquerque recruited at the New Mexico Motor Vehicles Division (MVD) (Anderson, Kaplan, and Lancaster, n.d.; Kaplan et al. 1995, 1998). All men who appeared to be over 18 years of age were considered eligible for the initial contact. On the basis of information obtained in the short interview, eligible participants were invited to participate in the long interview. The criteria for eligibility were: (1) having come to the MVD for the purpose of a driver's license origination, renewal, or for a photo ID, and (2) being over 25 for the short interview and over 30 for the long.

The Albuquerque Men data set was designed to test theories of fertility, mating, and parental investment using a representative sample of men living in a modern society with a competitive, skills-based labor market. The short interview sampled a man's current condition. The long interview was a history of employment/training, reproductive relationships, and children produced and parented. A fuller description of the interviews can be found in Kaplan and Lancaster (chapter 14, this volume). The first set of results presented here come from the analysis of the short interview, which was given to 3,762 Anglos, 2,789 Hispanics, and 556 oth-

ers. Our interview requested information on three generations, the man himself, his parents, and the children he produced and/or parented. For the last analyses presented in this chapter on a man's investment in children's education, we used data from the long interview, which was given to 1,325 men. We analyzed data from 615 of these men about their investments in 1,246 children who had received a year or more of higher education.

RESULTS

Men Who Ceased to Live with Their Own Offspring

Men differ in their quality and their ability to invest in mates and offspring (Lancaster and Kaplan 1992). As a result, the impact of tradeoffs between mating effort and parental investment differ for different men, with some men paying higher costs, and others paying lower costs for ceasing to live with a child. One of the most significant reasons why costs should vary between men is variability in their own embodied capital. In other words, the less a man has to offer, the less the cost to the child of withdrawing his presence and financial support. We predict that the following set of three conditions will have strong effects on the values of these tradeoffs. All are measures of embodied capital: (1) a man's education, (2) a man's income, and (3) the age at which the man first started reproduction. In this case an early age of first reproduction means less investment in his own embodied capital by diverting resources from own education and training to acquisition of mates and production of offspring.

We have chosen to look separately at data resulting on separation from a child before age 6 (early childhood), between ages 6 and 16 (school age), and men who stay with their children over the age of 16, presented by child's birth cohort. We also restricted our analyses to the two ethnicities, Anglo and Hispanic, for which we had a large enough sample to control for socioeconomic status and birth cohort. Hispanic refers to all men who identified themselves as Hispanic regardless of race and Anglo (an ethnic classification peculiar to the Southwest) to non-Hispanic men who classify themselves as white and generally speak English in the home. Most Hispanics in our sample are native New Mexicans tracing their family history to the early settlement of the Southwest. The break down of our sample into these ethnic divisions is appropriate to the Southwest and helps us to analyze the impact of socioeconomic status and birth cohort on behavioral differences often assigned to ethnicity and religion.

Father's ethnicity and child's birth cohort. Figure 9.2 presents the effects of the father's ethnicity on the probability of his ceasing to live with a child before the age of 16, presented as a function of the child's birth cohort (the data on sample size, standard deviations and standard errors for Figures 1–6 and Figures 9–10

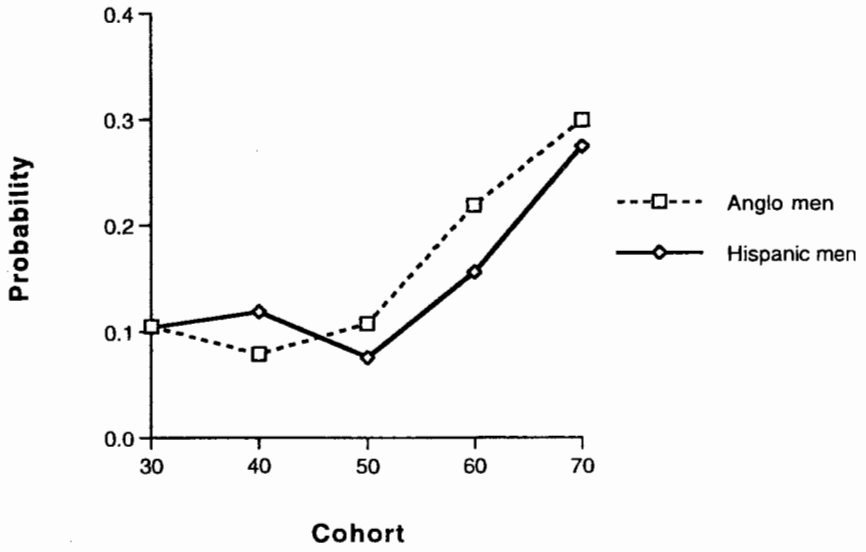

Figure 9.2. Effects of father's ethnicity on the probability of ceasing to live with a child before it reaches age 16.

are given in the appendix). Ethnicity had remarkably little effect although Anglo men showed a slightly greater tendency to cease living with a child after 1950. The most striking result presented in this figure is not in differences between ethnicities but in the general upward trend in ceasing to live with children in each birth cohort since 1950 beginning with a low of 8% in 1950 and rising to 29% in 1980. This striking rise in frequency of father-child separation was found in both Anglo and Hispanic men.

Father's education. Figure 9.3 presents the effects of the father's education on the probability of ceasing to live with his child before the age of 6. It shows the changing likelihood of ceasing to live with a child under the age of six as a function of the child's year of birth and the man's education. A very small percentage of children (about 5%) born before 1960 ceased to live with their father before age 6, regardless of parental education. However, as father/preschool child separation becomes increasingly likely through time, the effects of education become readily apparent. For the cohort of children born in the 1980s, the probability of separating from the father before the age of six increases to about 25% for children whose father has less than a high school diploma, 18% for those whose father has a high school diploma, 12% for children of men with a bachelor's degree, compared to only 8% for children of men with a post-graduate degrees. We could not look at the outcomes for older children in this latest birth cohort because few were over age 6.

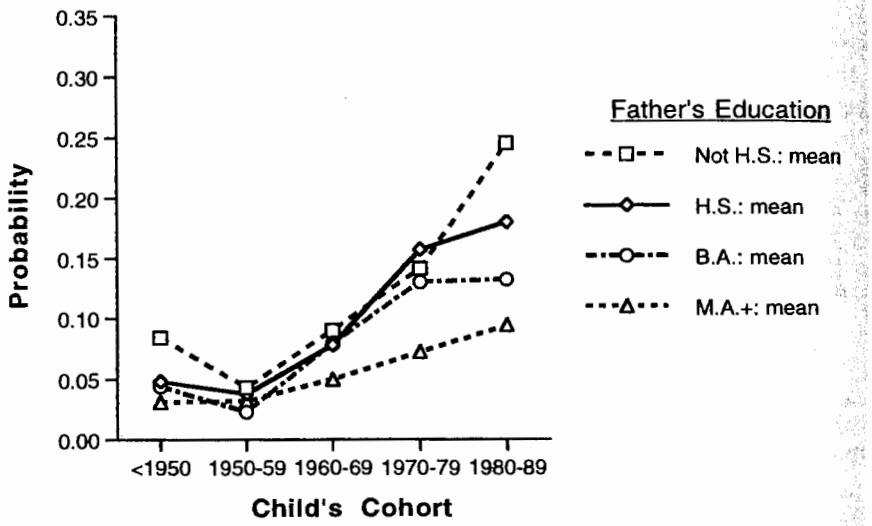

Figure 9.3. Effects of father's education on the probability of ceasing to live with a child before it reaches age 6.

It may be relevant that the rate of return on embodied capital (education) had a abrupt upward shift when the U.S. labor market restructured during the mid-fifties to the mid-sixties away from semi-skilled and manufacturing employment toward industries requiring specialized and technical training (Herrnstein and Murray 1994; Jorgenson and Fraumeni 1989; Murphy and Welsh 1989). We might expect then that the similarity of behavior of the fathers of the pre-1960 child cohorts regardless of differences in education may reflect similar rates of return on education during that era. As the returns on education in producing male adult income increased, the cost (in terms of child quality) to fathers of ceasing to live with their offspring becomes increasingly differentiated between those with little education and those with more.

Father's income. Figures 9.4a and b present the effects of the father's income on the probability of ceasing to live with his child before it reaches age 6 and age 16. The lowest income quartile is the most different from the others. This means that the effect of father's income on probability of divorce or desertion is not evenly distributed by similar increments through the income quartiles but is strongest at the bottom of the economic scale. In the latest children's birth cohort (1970–79) 43% of fathers ceased to live with a child before it reaches the age of 16. For separation before age 6 the lowest income quartile has a rate nearly double that of the other three quartiles for the 1980–89 birth cohort.

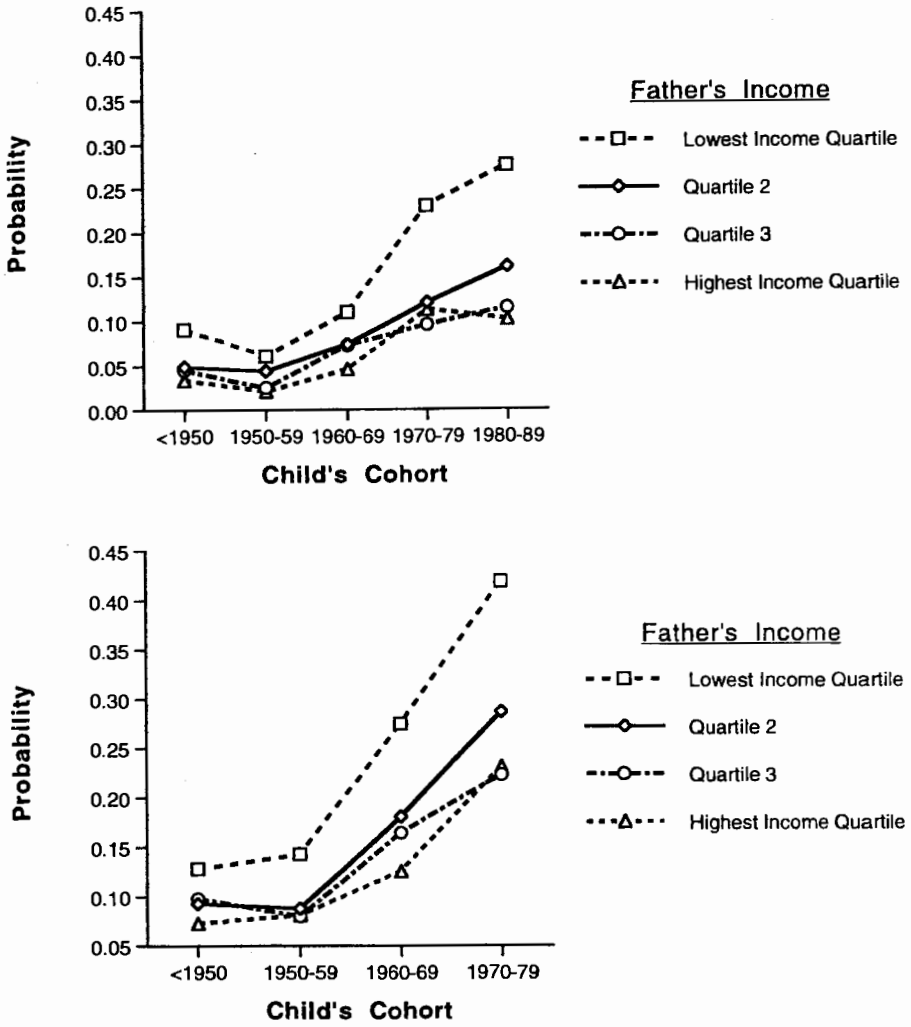

Figure 9.4a–b. Effects of father's income on the probability of ceasing to live with a child before the age of (a) 6 and (b) 16.

Father's age at first reproduction. Figure 9.5 presents the effects of father's age at first reproduction on the probability of his ceasing to live with a child before it reaches the age of 16. This is a separate life history measure of the father's embodied capital because it is a marker of the timing of the shift from somatic to reproductive investment in his life course, whereas education and income are measures

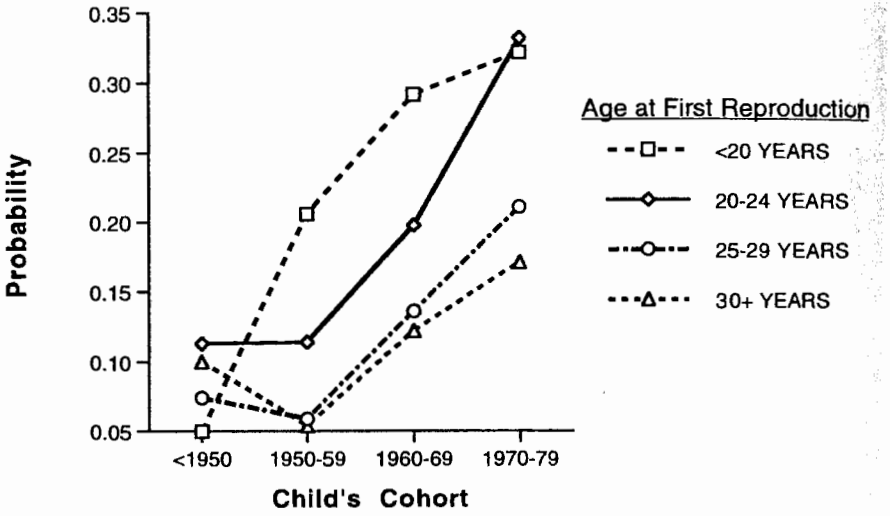

Figure 9.5. Effects of father's age at first reproduction on the probability of ceasing to live with a child before the age of 16.

of the amount of embodied capital he has acquired. Reproduction early in the life course does in fact raise the probability of ceasing to live with a child in both early childhood (<6 years) and during the school-age years (6–16 years) (Brian and Willis 1995; Kaplan and Lancaster, unpublished analyses). The cutoff point for such effects appears to be for fathers aged 25 and over at first reproduction.

There has been significant historical change in the median age of first reproduction for men in this century. Among Anglos in the Albuquerque data set, age at first reproduction was late early in the century, dropped to a minumum among men born in the 1930s, and then began to increase. Median ages of first reproduction for Anglos are: 30.7 (born before 1920), 27.7 (born 1920–29), 25.8 (born 1930–39), 28.2 (born 1940–49), and 31.7 (born 1950–59), respectively. Median ages of first reproduction for Hispanics are: 28.5 (born before 1920), 25.8 (born 1920–29), 25.0 (born 1930–39), 24.4 (born 1940–49), and 25.9 (born 1950–59), respectively. Since 1940, then, differences between Anglos and Hispanics in mean age of first reproduction has increased considerably. There is no national data set available for comparison. Median age of first reproduction is determined for mothers but not for fathers in national surveys. However, the temporal changes we found in male age at first reproduction mirror trends for median age of first marriage in national data sets. Nationally median age of first marriage for men was 22.8 years in 1950, 24.7 in 1980, and 26.3 in 1990 (U.S. Bureau of the Census 1992).

In summary, the four sets of analyses we have presented on the impact of father's ethnicity, education, income, and age of first reproduction, all by birth cohort, point to embodied capital as a critical predictor of a man's likelihood of not fully raising one or more of his children. The prediction that men with less embodied capital (as measured by education, income, and age of first reproduction) may have less to lose from their desertion in terms of reducing child quality and hence, may be more willing to do so is supported.

The Effects of Not Fully Raising Own Offspring on a Man's Fertility

Our path model presented in Figure 9.1 proposed that the diversion of resources from raising children after divorce or desertion would enable men to invest in future mating opportunities and so enhance their completed fertility. Figure 9.6a compares the fertility of Anglo men who did not live with at least one of their children to age 6 with those who lived with all of their children to age 6. Figure 9.6b shows similar results when we compared the fertility of those men who did not live with at least one of their children to age 16 with those who lived with all of their children to that age. Ceasing to live with at least one child has the predicted effect of raising mean male fertility as much as one half a child for cohorts in which the man was born before 1950, providing the man deserted before the child reaches the age of 6. Fertility benefits to deserting children between the ages of 6 and 16 were reduced to approximately one quarter.

The predicted effect is not evident in the younger cohort, that of men born since 1950. The effect is also not evident among Hispanics, except for men born before 1930 (data not shown). However, this is not a clear outcome because many of these men may not have completed their fertility, particularly those who are reproducing in a series of mateships, because reproduction through changing mates may have some cost in startup time between relationships. These younger males born between 1950 and 1960 were only 30–40 years old when they were interviewed, whereas our older cohorts were over 40 and more likely to have completed fertility.

Men Who Raise Other Men's Offspring

Whereas some men in all human societies do not fully raise their offspring, there are always some men who are willing to raise other men's offspring. In the nineteenth century in the United States most women with dependent children who were available for remarriage were widows (Vinovskis 1990, citing Uhlenberg 1980). As late as the beginning of the twentieth century the proportion of children who had one or both deceased parents before reaching the age of 15 was 24%. Today among single mothers only 6.7% are single as a result of their partners' death (Vinovskis 1990), and unrelated men enter mother-child households more often because of single parenthood or divorce. Allocation of male investment from

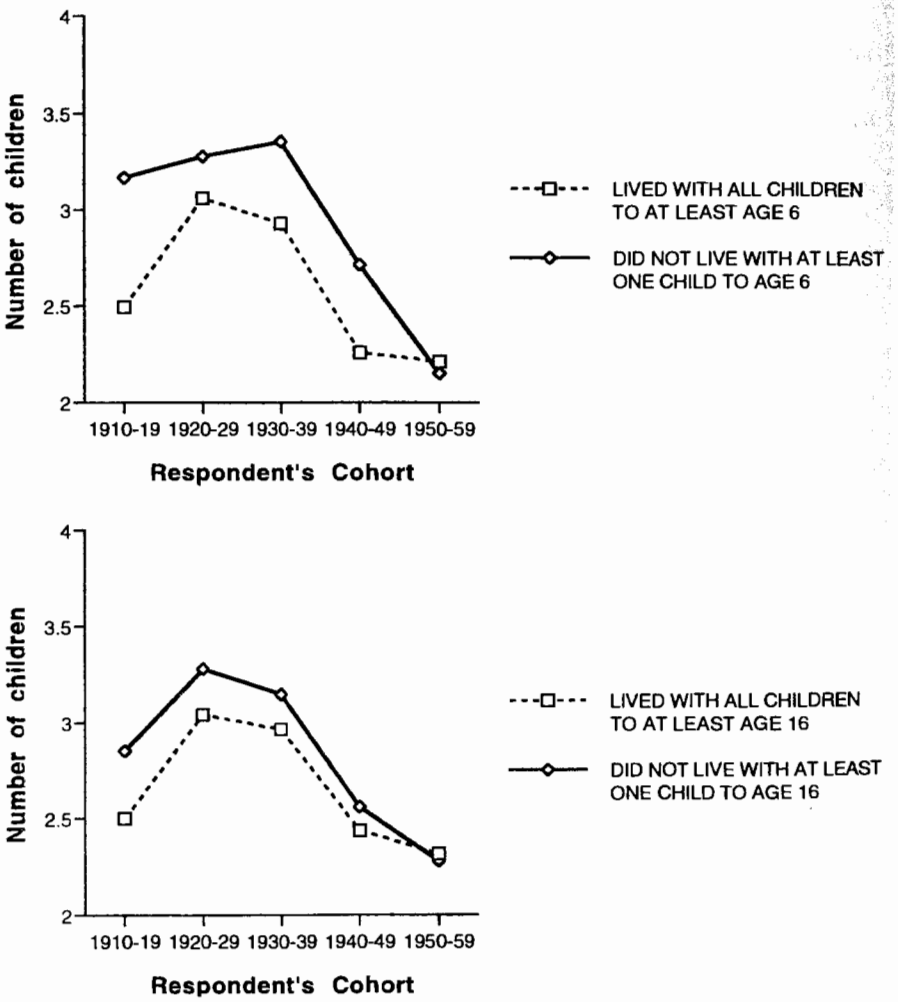

Figure 9.6a–b. Fertility effects of Anglo men not living with at least one child to age (a) 6 and (b) 16.

self and/or own children to other men's children raises intriguing questions about the characteristics of these men (Daly and Wilson 1994, 1996).

Among humans the division between mating effort and parental effort is not so cleanly struck as life history theory might seem to imply. The reason for this is that human females are characterized by a reproductive strategy (the feeding of juveniles) that commits them to the dependency of multiple young of different ages

and needs (Lancaster 1997). For this reason male support for a previously born child can be classified as male parental investment for the genetic father, but it also serves as a form of courtship behavior (mating effort) for either the genetic father or an unrelated male because it raises the probability for either type of man of fathering the next child a woman bears. Such behavior has been reported for nonhuman primates by Smuts and Gubernick (1991) in which young and low-status males who favor and protect infants of other males raise their own probability of mating with the mother when she weans and is ready to conceive again. Similarly in "lonely hearts" advertisements in the United States men who list the fewest resources (no mention of professional career or home ownership) are much more likely to express a willingness to raise other men's children ("Kids OK") (Waynforth and Dunbar 1995).

To begin our analysis using the combined sample of 7,107 men of all ethnicities, we asked all men who had helped rear a child for at least one year what their relationship was to the child to whom they allocated that parental effort. The results are presented in Figure 9.7. Some men had never helped raise a child, either their own or another male's (16.6%), at the time of the interview. Most of the men in our sample had raised only their own children (62.8%), and an additional 16.6% had raised their own and the children of other men as well. This category of others' offspring raised in combination with own offspring included both kin (3.6%) and nonkin (12.3%). Only 4.7% raised only other men's children. Together a total of 20.6% of men in the sample helped to raise some children not their own. Generally, then, men parent their own children, nearly two-thirds in our sample, but an additional 20.6% parent other men's children as well. Only a small minority had reared only other men's children.

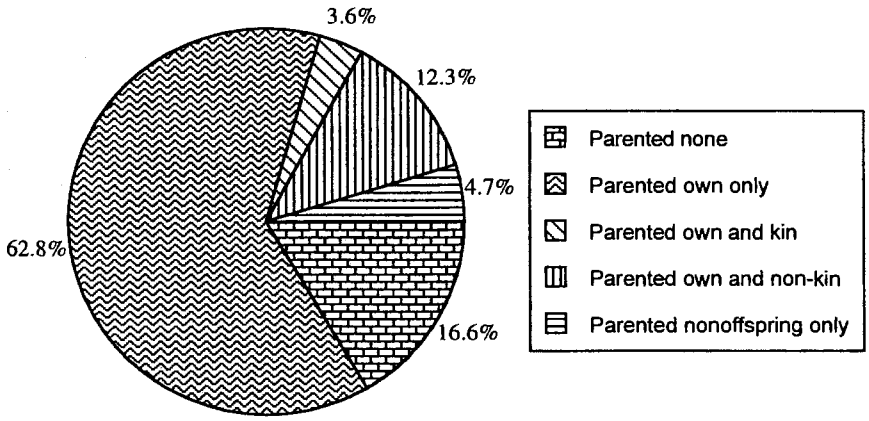

Figure 9.7. Allocation of male parenting effort for all ages of men.

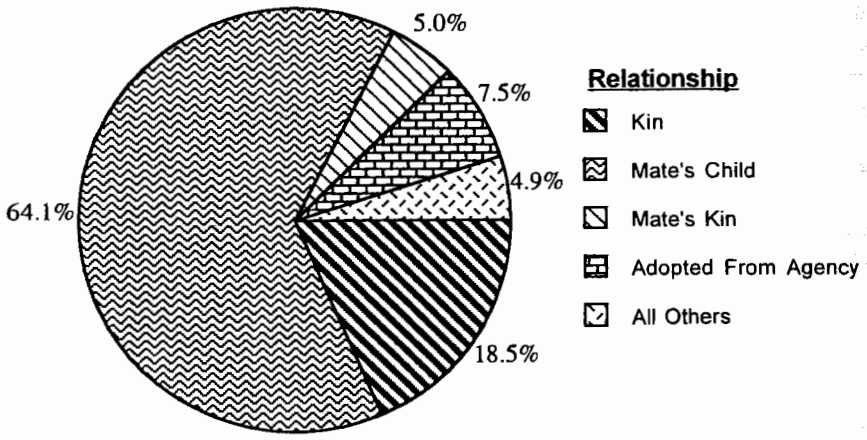

Figure 9.8. Relationship to others' offspring parented by males of all ages and ethnicities.

A closer look at the 20.6% of our men who had raised at least one child not his own for at least a year revealed a variety of relationships between the man and that child. Figure 9.8 presents the relationship of the male to the 2,613 offspring of other men raised by men of all ages in the sample. The vast majority of such relationships in this sample can be attributed to mating effort. In other words 69.1% of the children were related to a man through his current mate, either as her child from a previous relationship (64.1%) or as her dependent kin (5%). As we will show below, this form of parenting comes with sexual access to a woman who has previously reproduced or has dependent relatives, and should sexual access end, investment is dramatically curtailed. A further 18.5% of the children were kin to the man, such as grandchildren or nieces and nephews. This behavior can be classified as kin selection because these children are carriers of the man's genes just as his own children are. The remaining 15% of the offspring children were either adopted from an agency (9%) or the children of friends or neighbors (6%) who tended to be older and only temporarily placed in the man's home.

Our data thus support the hypothesis that, although men do sometimes parent other men's children, this behavior is likely to further the men's own genetic interests. In the modern United States this behavior is by far the most likely to be associated with getting access to a mate who had previously reproduced or had dependent kin of her own. A less frequent but still significant pattern was the parenting of own kin other than offspring. Generally, then, most men in our sample who parented, raised their own children, at least partially. The parenting of other men's children can be interpreted as either mating effort or kin investment. The altruistic parenting of unrelated stranger children is a relatively infrequent event but deserves further attention.

Outcomes for Children of Not Being Fully Raised by Both Parents

Our original pathway in Figure 9.1 predicted a cost to children in not being fully raised by their genetic fathers. We were able to test these effects using three outcome measures: marital stability, education acquired, and adult income of the not fully parented child. We see strong negative effects for all three. As in earlier analyses we separated the effects of early from later desertion/divorce in terms of when it occurred in both the man's and his child's life. Although these analyses are based on the respondents ceasing to live with both parents before a particular age, the vast majority of such cases involved the absence of the father, especially so for the preschool years and before the 1990s when fathers were rarely the custodial parent after divorce.

Figures 9.9a and b present the effect of the age at which the respondent father no longer lived with both parents (before the age of 6, between 6–16, or over 16 years) on the probability of ceasing to live with his own child before the age of 6 (Figure 9.9a) or between the ages of 6 and 16 (Figure 9.9b). The results show that by far the strongest effect is found in the likelihood that a man who stopped living with both parents when he was between the ages of 6 and 16 will separate from his own child before it reaches the age of 6. We also note strong cohort effects: whereas before 1960 how long a man lived with both parents had little effect on his own marital stability, after 1960 the impact on men separated from both parents between the age of 6 and 16 nearly doubles, but only in regards to separating from preschool children.

It may seem counter-intuitive that a man's separation from a parent during his school-age years has the strongest effect on his ceasing to live with one of his own children before the age of 6, and that the effects of being separated from a parent during early childhood and of remaining with both parents until 16 or older are virtually the same. Draper and Harpending (1982, 1988) and Belsky, Steinberg, and Draper (1991) present a hypothesis which suggests that during the early years of development both sons and daughters form expectations about family formation strategies based on modeling their parents' behavior. These expectations include relations with the opposite sex and with children based on the perception of how necessary a stable partner is to rearing children as well as how critical an emotional and sexual commitment in marriage is. If our data can be interpreted as supporting this hypothesis, it suggests that the preschool years of life are not important but that a critical learning experience might occur only during the school-age years (Figures 9.9a and b) and that this effect is only expressed in the likelihood of ceasing to live with own child before it reaches the age of 6.

Alternately, this effect of age to which the man was raised by both parents could be mediated through the effects on a man's education and income (an embodied capital effect). Espenshade (1984) has estimated that the cost of raising a child in our society increases as a child matures and nearly doubles in total if

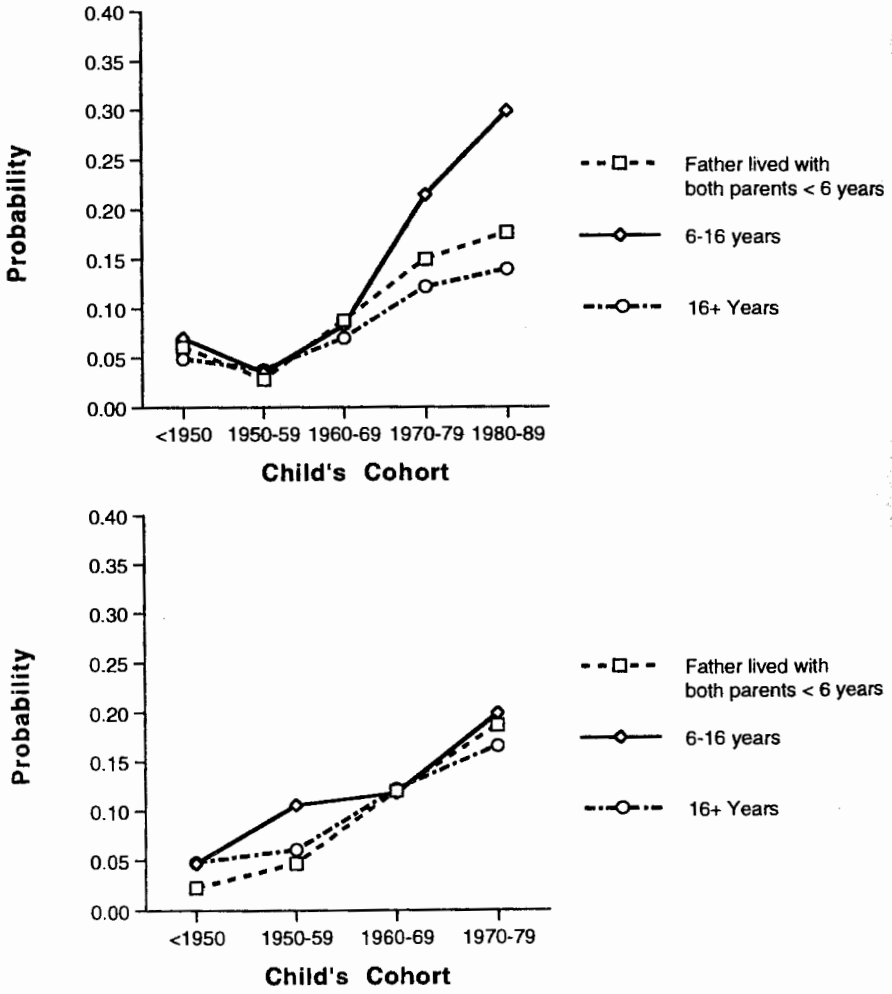

Figure 9.9a–b. Effects of the age to which respondent lived with both parents on the probability of his ceasing to live with a child (a) before the age of 6 and (b) between the ages of 6 and 16.

parents provide support for higher education. Monetary investment in a child should, therefore, become even more important as the child matures so that investment after age 16 may be particularly critical in its impact on a child's adult level of embodied capital. Calculations of lifetime earnings show that workers who do not finish high school can expect to earn $0.6 million whereas holders of professional degrees will earn $3.0 million in spite of their shorter employment careers (Population Reference Bureau 1994).

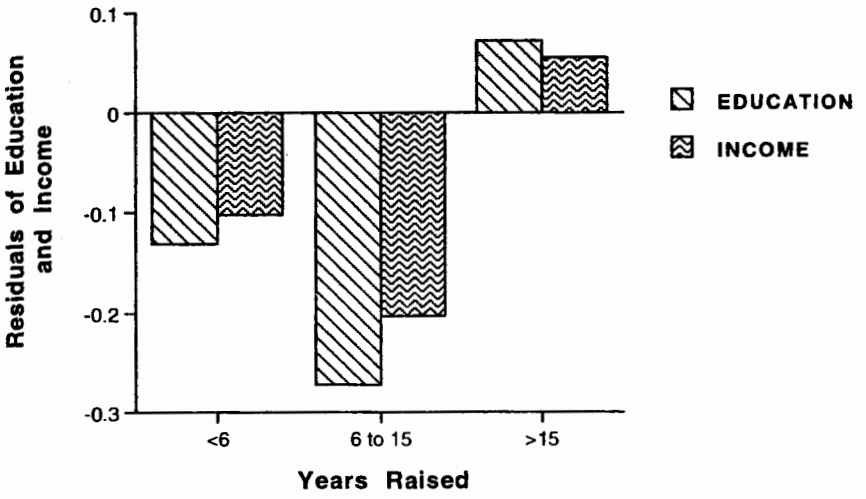

Figure 9.10. Effects of age to which men lived with both parents on their education and income.

We first regressed education and income on respondent's age and ethnicity. Figure 9.10 presents the effects of years raised by both parents on the residuals of completed education and current income. As predicted, we found a negative effect of a child having had a parent cease to live with him before age 16 on both his education and adult income. The effect was stronger on education than income. This parallels the strong effect reported above on the probability of ceasing to live with own child; that is, the negative effect is strongest for men who ceased to live with both parents during their school-age years compared with those who ceased to live with a parent during their early childhood.

It is interesting that the negative impact of not being fully raised until the age of 16 is stronger on education than on adult income. At this point we do not know what mediates this effect. Education may be a better proxy for the total value of lifetime earnings than current wages (Kaplan 1994). It might also be that the impact of father loss is strongest during the year it occurs and hence children's educational progress is disturbed and never made up. Children whose fathers leave during the preschool years have time to adjust to their loss before entering school.

This leaves the question as to why being separated from father during the preschool years has such a minimal impact since such a child is also deprived of his father's support during both school-age and later years. One possible answer is that fathers who leave early are more readily replaced by stepfathers who buffer the economic consequences of separation from the genetic father. Remarriage of a young woman without children is more likely than for a woman encumbered with children from her first relationship (Buckle, Gallup, and Rodd 1996). However, remarriage after divorce is only marginally affected by the number of

children the mother had by a previous marriage; by far the most important variable is her age (Mackey 1980). It is quite likely that the relatively low effects of our measure of ceasing to live with a child before the age of 6 on child outcome reflects the probable low age (and probable high fecundity) of the child's mother and the relatively good prospects of her replacing lost investment in the household through her remarriage. For example, Mackey found that in the late seventies, single women aged 14–29 with children by a previous marriage had a 57.2% rate of remarriage. Women aged 30–39 had a 30.9% likelihood of remarriage, and by the age of 40–49 (end of fertility) the rate had dropped to 11%. These data strongly suggest that the men who are willing to help raise the children from a woman's previous relationship (see Figure 9.5) do so when these women still have the capability of producing children in the new relationship.

Outcomes for Children Who Are Raised by Men Not Their Genetic Fathers

As presented above, children who are raised by men not their genetic fathers are most likely to be children of his current mate. As such, this is a form of mating effort. We have two outcome measures that tell us something about men's willingness to invest in children not their own and the complex relationships between genetic relatedness to the child and the presence of the child's mother in the household. These results come from analysis of our long interview, which was given to a subsample of 1,325 men of which 642 men raised 1,246 children who went on to receive at least a year of higher education, about half of whom received some male parental support (Anderson, Kaplan, and Lancaster, 1999; Kaplan and Lancaster, this volume). Table 14.6 (in Kaplan and Lancaster, this volume) presents a logistic regression model of the probability of a man providing financial support for a child's higher education. The effects of genetic relatedness and the respondent's relationship to the child's mother are interesting. Children are divided into four groups. Children who live in intact families (the genetic offspring of the respondent and whose mother is still living with the respondent) are the baseline. Not surprisingly, they receive the most monetary investment.

The next highest level of investment is given to (a) a genetic offspring whose mother is separated from the respondent and (b) to an unrelated child whose mother is living with the respondent; they both receive over $2,000 less investment than the child of an intact family. The very least investment is given to a child who is not the genetic offspring of the respondent and whose mother no longer lives with him, a decrease of $4,600 below the baseline.

This reduction in investment is costly to a child who is raised by a man who is or was living with his mother or whose father no longer lives with his mother. Table 14.7 (in Kaplan and Lancaster, this volume) presents the least squares regression of the number of years of education obtained by children aged 23 and

older raised by the respondent. Again, using intact families as the baseline, we find strong effects of both genetic paternity and the respondent's current relationship to the child's mother. A child who is not genetically related to the respondent but whose mother was living with the man when the child was 18 achieves about .75 years less education than a respondent's genetic offspring whose mother was living with him at 18 years of age. Genetic offspring of the respondents whose mothers ceased to live with the respondent before the child turned 18 achieve about 1.3 years less education, whereas a child who is not a genetic offspring and whose mother ceased to live with the respondent before the child turned 18 achieved 2.6 years less education. In this case the child of a woman who is living with the man does better than his own genetic offspring whose mother did not live with him at age 18.

Taken together, these results suggest that although investment made by a man in his current mate's child from a previous relationship is not as great as he might make if he and the woman were both genetic parents of the child, it is nevertheless significant and not very different from what he might do for his own child after divorce. However, the power of a woman to extract investment for her child from a man unrelated to the child but with whom she was once but is no longer living is greatly diminished. Male parental investment as mating effort clearly depends on the continued presence of his mate.

SUMMARY

1. Between 1990 and 1993 Kaplan and Lancaster's Albuquerque Men project completed approximately 7,100 short and 1,250 long structured interviews with a representative, random sample of men in Albuquerque recruited at the New Mexico Motor Vehicles Division (Kaplan et al. 1995a, b). The short interview sampled a man's current condition: mostly demographic information on three related generations, the man himself, his parents, and the children he produced and/or raised himself. The long interview was a history of employment/training, reproductive relationships, and children produced and raised. Most of the results presented here come from the analysis of the short interview given to 3,762 Anglos and 2,789 Hispanics. Our analyses of men's investment in children's education came from the long interview, which contained much more specific information about investment in each child at specific ages.

2. Men who do not fully parent are more likely to have low amounts of embodied capital as measured by their income, education, and early age of first reproduction and hence inflict lower costs on their offspring for ceasing to live with them than do men with high amounts of embodied capital.

3. The outcome of ceasing to live with a child before it reaches age 16 is a slight elevation in the father's fertility (child quantity) up through the Baby Boom years but not for the succeeding Post-boom cohort. However, this result may be an

artifact of the fact that many of these men may not yet have ceased producing children.

4. Men who raise other men's offspring are more likely to raise a child who belongs to his current mate (mating effort) or his own relative (kin investment). Only 15% of men who raised offspring of other males raised a stranger child or children of friends or neighbors.

5. Outcomes for children who are not raised by both parents show negative effects on both adult education and income of the child and increased likelihood of the child not forming stable reproductive relationships as an adult. The effect of ceasing to live with a father is strongest when it occurs during the school-age years. This is true for both its effects on the probability of ceasing to live with own children and on future educational and economic outcomes of children whose fathers ceased to live with them before adulthood.

6. Outcomes for stepchildren who are raised by men other than their father are reduced investment compared with children who live with their genetic fathers. However, they do experience nearly equal investment both before the age of 18 and for college education as that of a man's genetic child whose mother does not live with him. However, if the child's mother and stepfather separate, his investment in his stepchild plummets.

7. In sum, there is clear evidence that genetic paternity is relevant to male parental investment. Men invest less in children from their previous mates' unions. While expenditures on young children are not affected by genetic paternity (see Kaplan and Lancaster, this volume), both time investment and support during the college years is greater for genetic offspring than for a mate's child. In addition, full investment in a mate's child is contingent on a continuing relationship with that partner. Men cease to invest in a child after they stop living with the child's mother, unless the child is also the genetic offspring of the man, and even then, support is reduced significantly. The effect of those reduced investments is also seen in child outcomes, with children who are raised by men other than their genetic father or who are not fully raised by their father achieving lower educational outcomes (even after parental income and education are controlled for).

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APPENDIX

Data for Figure 2

	Anglo			*Hispanic*		
Cohort	*N*	*S.D.*	*S.E.*	*N*	*S.D.*	*S.E.*
1930	200	0.31	0.02	86	0.31	0.03
1940	719	0.27	0.01	318	0.33	0.02
1950	1297	0.31	0.01	829	0.27	0.01
1960	1577	0.41	0.01	1614	0.36	0.01
1970	929	0.46	0.02	1193	0.45	0.01

Data for Figure 3

	No High School			*High School*			*B.A.*			*M.A. or Greater*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1930	103	0.22	0.02	140	0.23	0.02	26	0.27	0.05	19	0.32	0.07
1940	232	0.30	0.02	486	0.21	0.01	177	0.20	0.01	142	0.14	0.01
1950	394	0.20	0.01	956	0.19	0.01	429	0.15	0.01	347	0.18	0.01
1960	498	0.29	0.01	1599	0.27	0.01	592	0.27	0.01	502	0.22	0.01
1970	382	0.35	0.02	2014	0.36	0.01	591	0.34	0.01	511	0.26	0.01
1980	208	0.43	0.03	1116	0.38	0.01	371	0.34	0.02	320	0.29	0.02

Data for Figure 4a

	Lowest Income Quartile			*Quartile 2*			*Quartile 3*			*Highest Income Quartile*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1930	72	0.26	0.03	56	0.23	0.03	59	0.22	0.03	42	0.26	0.04
1940	226	0.30	0.02	212	0.21	0.01	228	0.21	0.01	190	0.16	0.01
1950	413	0.24	0.01	457	0.21	0.01	514	0.16	0.01	483	0.14	0.01
1960	665	0.31	0.01	744	0.26	0.01	757	0.26	0.01	762	0.21	0.01
1970	748	0.42	0.02	844	0.33	0.01	875	0.30	0.01	772	0.32	0.01
1980	428	0.45	0.02	453	0.37	0.02	504	0.32	0.01	508	0.30	0.01

Data for Figure 4b

	Lowest Income Quartile			*Quartile 2*			*Quartile 3*			*Highest Income Quartile*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1930	70	0.34	0.04	56	0.29	0.04	59	0.28	0.04	42	0.38	0.06
1940	226	0.34	0.02	212	0.29	0.02	228	0.30	0.02	190	0.22	0.02
1950	413	0.35	0.02	457	0.28	0.01	514	0.27	0.01	483	0.27	0.01
1960	665	0.45	0.02	744	0.39	0.01	757	0.37	0.01	762	0.33	0.01
1970	439	0.49	0.02	523	0.45	0.02	524	0.42	0.02	463	0.42	0.02

Data for Figure 5. Age at First Reproduction

	< 20 years			*20–24 years*			*25–29 years*			*30+ years*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1930	35	0.17	0.03	178	0.34	0.03	55	0.23	0.03	18	0.38	0.09
1940	64	0.24	0.03	406	0.31	0.02	335	0.27	0.01	232	0.29	0.02
1950	160	0.41	0.03	1030	0.32	0.01	526	0.24	0.01	410	0.23	0.01
1960	346	0.46	0.02	1834	0.40	0.01	707	0.34	0.01	304	0.33	0.02
1970	245	0.47	0.03	1167	0.47	0.01	464	0.41	0.02	246	0.38	0.02

Data for Figure 6a

	Lived with all to age 6			*Did not live with one to age 6*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1910	400	1.26	0.06	30	1.66	0.30
1920	316	1.51	0.08	18	2.05	0.48
1930	402	1.41	0.07	65	1.78	0.22
1940	607	1.01	0.04	157	1.53	0.12
1950	388	0.96	0.05	144	1.26	0.11

Data for Figure 6b

	Lived with all to age 16			*Did not live w/ one to age 16*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1910	375	1.26	0.07	54	1.52	0.21
1920	291	1.51	0.09	43	1.75	0.27
1930	347	1.44	0.08	110	1.56	0.15
1940	375	1.10	0.06	232	1.32	0.09
1950	60	1.36	0.18	57	1.52	0.20

Data for Figure 9a. Length of time father lived with both parents

	Until <6 years old			*6–16 years*			*16+ years*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1930	57	0.19	0.02	46	0.36	0.05	185	0.20	0.01
1940	220	0.25	0.02	139	0.20	0.02	678	0.22	0.01
1950	569	0.17	0.01	254	0.19	0.01	1303	0.19	0.01
1960	761	0.28	0.01	350	0.28	0.01	2080	0.26	0.01
1970	845	0.36	0.01	358	0.41	0.02	2295	0.33	0.01
1980	458	0.38	0.02	204	0.46	0.03	1353	0.35	0.01

Data for Figure 9b. Length of time man lived with parents

	<6 yrs			*6–16 yrs*			*16+ yrs*		
Cohort	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
1930	55	0.19	0.03	39	0.22	0.04	175	0.22	0.02
1940	205	0.14	0.01	133	0.21	0.02	644	0.21	0.01
1950	553	0.21	0.01	245	0.31	0.02	1254	0.24	0.01
1960	694	0.33	0.01	321	0.32	0.02	1934	0.33	0.01
1970	444	0.39	0.02	176	0.40	0.03	1214	0.37	0.01

Data for Figure10

	Education			*Income*		
Years Lived	*N*	*SD*	*S.E.*	*N*	*SD*	*S.E.*
<6	1062	1.17	0.04	1062	4.75	0.15
6 to 15	602	1.23	0.05	602	2.50	0.10
>15	4199	1.18	0.02	4199	3.54	0.05