How do parents affect the life chances of their children as adults? An idiosyncratic review

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April 2003

Abstract

From genes to bequests, parents have important influences on the income, health and general living standards of their children as adults. The purpose of this paper is to review how parents affect the life chances of their children, with a particular focus on my own research in this area.

Paper prepared for the SEDAP Conference, *Moving Towards an Older Society*, 10-11 April 2003, McMaster University, Hamilton, Ontario.

How do parents affect the life chances of their children as adults?

The low fertility associated with an older society means that the economic support of a larger retired population falls on a smaller working population. In these circumstances, productivity-enhancing investment in today's children becomes even more important for the support of the retired population. In addition, because incomes in old age are strongly linked with earnings during a person's working life, parental influences on the life chances of their adult children will eventually affect the latter's economic welfare in their retirement. The purpose of this paper is to review how parents affect the life chances of their children, with a particular focus on my own research in this area.

Section 1 discusses the role of genetic transmission in affecting the health and economic well-being during their children's lifetime. The relatively lengthy second section examines how parents' actions during childhood affect the life chances of children as adults, and the third considers how financial transfers to children and co-residence in young adulthood help them during a period of important human capital investment. The fourth section discusses financial transfers from parents to children beyond young adulthood, possibly in 'exchange' for 'services', and the fifth discusses bequests from parents later in life.

It is well known that various measures of economic welfare of parents and children, such as earnings, income and occupational status are correlated (see Solon 1999). Recent British evidence (Ermisch and Francesconi 2003) suggests that while this intergenerational persistence in economic wellbeing may be weakening somewhat for more recent birth cohorts, it remains significant. The mechanisms through which parents affect their children as adults discussed in the paper are also important in helping to explain this intergenerational correlation in income.

1. Genes

Starting the discussion with genes is not meant to imply that they are the most important channel through which parents affect their children's life chances, but only that they are the most basic. We are learning more each day about how genetic inheritance from our parents affects many domains of human behaviour. Perhaps most well known is the genetic influence on our risks of suffering from various diseases later in life. Thus, genetic transmission is an important influence on a person's health throughout his or her life, and a person's health affects his/her earnings, labour supply, retirement age and the length of life itself.

General cognitive ability (*g*) predicts important social outcomes such as educational and occupational levels (thus, earnings and income) far better than any other *behavioural trait*, and it is also one of the most heritable behavioural traits (Plomin 1999).[1] Estimates (e.g. Plomin 1999 and Devlin *et al* 1997) suggest that about half of the variance in *g* (or IQ test scores) can be attributed to genetic inheritance. Furthermore, this measure of 'heritability' is found to increase with age, from 20% in infancy to 60% or larger later in life (Plomin *et al* 1997; Plomin 1999). This may be because individuals seek out and create environments that are correlated with their genetic propensities, although it may also be partly due to better measurement of *g*.

The heritability calculation can be sensitive to the model used and the environment in which it is undertaken (Feldman *et al* 2000). Furthermore, it tells us nothing about the contribution of the environment to *between-group* differences or

[1] Diverse measures of cognitive ability correlate substantially with each other, and *g* is what these diverse measures have in common (the 'first principal component' in factor analysis of the measures). While cognitive testing has its critics, Plomin (1999, p.C25) summarizes the experts in stating that '*g* is one of the most reliable and valid measures in the behavioural domain; its long term stability after childhood is greater than for any other behavioural trait,…'

changes over time.[2] Height, for example, is a highly heritable trait (90% of the variance attributable to genetic inheritance), but the average height of a population of a given country can increase dramatically over a generation because of better nutrition and other improvements in living standards (i.e. large changes in the environment). As Plomin (1999) emphasizes, average differences in *g* between groups (e.g. ethnic, socio-economic) are small compared with individual differences within groups. General cognitive ability (*g*) is also not immutable, but can be altered by the environment.

Genes also affect 'personality traits', which in turn affect many aspects of social and economic behaviour. For example, consider another aspect of vital behaviour, human fertility. Miller *et al* (1999) develops a theory that suggests that genetic influences on fertility appear to operate, as least in part, through volitional fertility motivations and desires. Their argument is tied to several genetic loci, particularly dopamine receptor genes. When individuals have a wide choice concerning the number of children they have (i.e. 'fertility norms' and birth control technology do little to constrain their choice), these fertility motivations, and therefore genetic influences, may play a large role in fertility outcomes (Kohler *et al* 1999). In other words, the genetic influences are allowed to express themselves in these situations.[3]

Rodgers *et al* (2001) produces evidence consistent with this theoretical position. Estimating an additive genetic-environment model from information on

[2] In analysis of variance language, heritability measures contribution to 'within-group variance', with 'group' defined by 'environment'.

[3] As traits affecting fertility make a strong contribution to 'reproductive fitness', this may appear to contradict Fisher's 'fundamental theorem of natural selection' because for such traits the additive genetic variance will disappear in the long run. But this result holds in the *absence of perturbing forces*. In addition to genetic mutation, such forces are environmental changes that interact with genotype and its expression in phenotypes, and Rodgers *et al* (2001) point out that contraceptive innovation and changes in mating patterns, availability of abortion and norms regarding family size may be just such perturbing forces.

Danish identical and fraternal twins, they find that about one-quarter of the variance in completed fertility is attributable to genetic influence. Importantly for the theory, variance in a measure of fertility motivation, namely the age at which a woman first attempted to get pregnant,[4] also has a major genetic component. It is higher than for completed fertility and higher for women than men. Furthermore, this measure of fertility motivation is linked to completed fertility. Dunne *et al* (1997) have also found strong genetic influences on age at first sexual intercourse among Australians born between 1952 and 1966, accounting for half of the variance for women and 70% for men. Interestingly, they found the genetic heritability component was much lower for earlier cohorts, born before 1952. This may be because the more recent cohorts were subject to fewer social controls when they reached adolescence, thereby allowing inherited personality attributes, such as sociability and impulsivity, and heritable aspects of pubertal hormonal activity, physical development and attractiveness to express themselves more clearly in sexual behaviour.

There also appear to be important genetic influences on divorce, with about one half of the variance in latent divorce risk attributed to genetic inheritance (McGue and Lykken 1992). The authors hypothesize that the genetic influence on divorce risk is mediated largely by inherited personality characteristics.

Bowles and Gintis (2002) note that a number of personality traits, 'such as a sense of personal efficacy, work ethic, or rate of time discount (present orientation)' (p.20), may affect earnings and income. They cite a study by Osborne (forthcoming) that shows that the Rotter Scale, which is a common measure of 'fatalism', has a large negative influence on earnings among a sample of American men (note that the scale was measured before their entry into the labour market). Furthermore, the Rotter

[4] While age at first attempt to get pregnant may reflect constraints as well as motivation, it is a fertility behaviour indicator that is less contaminated by other factors such as contraceptive failure and

scores of parents and children are significantly correlated. Although the extent to which this intergenerational correlation is due to genetic or cultural transmission is unclear, it suggests that parents may shape important aspects of their offspring's personality, which affect their incomes later in life.

2. Actions of parents during childhood

Child health

Actions by parents affecting their children's development and life chances precede the child's birth. For instance, analysis by Devlin *et al* (1997) suggests that the maternal womb environment can account for 20% of the covariance in IQ between identical twins (who share it concurrently), and 5% of that between siblings (who share it serially). The weight of a child at birth is related to a child's health. For example, low birth weight children (less that 2.5 kg.) who survive have high rates of medical and developmental problems. Birth weight is also correlated with IQ, and this may be related to brain growth *in utero* and the effects of the prenatal environment. Rosenzweig and Wolpin (1995) estimate the 'production relationship' between birth weight and eight 'inputs' that the mother chooses, such as age at birth, prenatal care and cigarette smoking.[5] Their estimates of the production function using American data indicate that mother's age has no significant impact on birth weight, but they find that cigarette smoking during pregnancy reduces birth weight and that women who weighed more just preceding pregnancy have heavier babies.[6]

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infertility.

[5] Their estimation method takes into account that there are unobserved "endowments" of the mother (including genetic ones) and of her individual children that also affect birth weight, and these are likely to be correlated with the inputs that a mother chooses.

[6] They also find that women with propensities to have low birth weight children are significantly more likely to have their children when they are younger, and this accounts for the positive relationship between age at birth and birth weight in the raw data. Also, among mothers with the same endowment, those with a better-endowed first child are more likely to have the second child earlier.

Parents also make investments in their children's health by purchasing nutritious foods, medical care and safe environments for them. For this reason we may expect a causal impact of parents' income on children's health, and Case *et al* (2003) indeed find that American parents' long-run average income is positively related to their children's health and the relationship becomes more pronounced as children grow older. It appears that this relationship partly reflects higher-income parents' better ability to manage chronic conditions—poorer children are not more likely to have a particular chronic condition, but are more likely to be in poor health if they have it. This gradient is likely to have implications for their income as adults. The results 'indicate that children from poorer households enter adulthood in poorer general health, with more serious chronic conditions, and having missed more days of school—all of which may compromise their future earnings ability' (Case *et al* 2003, p.1309).

While future research needs to identify better the mechanisms behind the parental income-child health gradient, Case *et al* (2003) rule out several possible ones. They find that health insurance does not play a crucial role in protecting health upon the arrival of a chronic condition, nor is health during childhood a persistent reflection of health at birth, nor can a simple genetic model explain the gradient.

As noted, parents' choices about diets may be reflected to some degree in this gradient. While severe malnutrition is unlikely to be a major factor for these American children observed in the late 1980s and 1990s, it may be important for earlier cohorts, who are now working or in retirement. As Fogel (1994) has shown, better nutrition and other developments affecting the health of children in the first half of the twentieth century, including public health investments, may be affecting the health and life-span of today's older workers and pensioners. Furthermore, poor

nutrition among the children from poor families is also like to affect their health and earnings as adults, and their lifespan.

Educational attainments

The most obvious way that parents affect their children's incomes later in life is through choices that influence their children's educational attainments. These do not only include decisions about the quality and length of formal schooling, but also the place in which they live, educational activities in the home environment and other parent-child interactions that affect a child's emotional and cognitive development, expectations and preferences regarding education. A parent-offspring adoption study (Plomin *et al* 1999) suggests that family environmental factors correlated with parents' general cognitive ability (*g* or IQ) have little effect on children's cognitive ability.[7] In other words, aspects of the family environment *not* correlated with parents' cognitive ability are the important ones for children's cognitive development, which in turn affects their educational attainments and future earnings. Furthermore, other genetic research shows that, whatever they may be, environmental influences important for cognitive development operate to make children growing up in the same family *different*, not similar (Dunn and Plomin 1990). That is, it is aspects of parenting that make siblings different in cognitive abilities that have an impact on children's cognitive development. This suggests that it is a good strategy to use comparisons between siblings to estimate the impacts of family environmental factors on adult outcomes associated with cognitive development, like educational attainments.

[7] This evidence comes from correlations between adoptive parents and their adoptive children, which provide a direct estimate of variance in cognitive abilities accounted for by the environmental transmission from parent to child.

Some of the important choices and patterns of interaction with their children happen relatively early in a child's life. For instance, differences in ability test scores by parents' income appear at early ages. Carneiro and Heckman (2002, p.728) show large differences in PIAT-Math test scores by parents' income quartile at age 6, and these differences widen as schooling proceeds over the next six years.[8] Even conditioning on a large set of background factors, including parental education, early family income and mother's ability test scores, does not eliminate the gaps for the math test score. Most of these gaps represent different 'average environments' for the children with respect to income quartile. Parents' actions in response to the constraints faced by different income groups play a role in shaping these gaps.

These differences cast a long shadow. Carneiro and Heckman demonstrate that the PIAT-Math test score (at age 12) and long-run average family income (over the entire childhood, ages 0-18) have strong effects on the probability of college enrolment in the U.S.A. It is these long run factors that affect college enrolment; average income during adolescence (ages 16-18) has no additional effect. This suggests that the association with parents' income does not just reflect borrowing constraints. Keane and Wolpin (2001) also fail to find an effect of borrowing constraints on college enrolment. It is not because they do not exist, but because students take employment while in college in response to them. Relaxing the constraints would mainly reduce their market work.

Because, as noted above, it is aspects of parenting that make siblings different in cognitive abilities that have an important impact on children's cognitive development, estimates of the impact of family income on educational attainments that compare siblings may be particularly informative. Duncan *et al* (1998, p.420)

[8] The longitudinal data on children comes from the Children of NLSY79 study.

study the effect of family income on completed years of schooling with the American Panel Study of Income Dynamics. In addition to conventional between-family comparisons, they also compare siblings in the same family and obtain consistent positive effects of family income, particularly when the child was under 6, on completed schooling. They conclude that 'early childhood appears to be the stage in which family economic conditions matter most.' This finding is supported by research on British young people by Ermisch, Francesconi and Pevalin (2002), who use a 'parental joblessness' as a measure of poverty and also make sibling comparisons. They find that the experience of childhood poverty reduces the probability of achieving at least one 'A-level' qualification, which is a necessary condition for going on to university. Furthermore, the impact is strongest for poverty experienced at ages 0-5.

These findings of an impact of family income early in childhood are consistent with analysis of the longer term effects of Head Start, an American public pre-school programme for disadvantaged children. Again using sibling comparisons, Garces, Thomas and Currie (2000) find that, among whites, participation in Head Start is associated with a higher probability of completing high school and attending college, and there is also some evidence of higher earnings in a person's early twenties for the Head Start children.

In line with the importance of what parents do during childhood for subsequent achievement, Keane and Wolpin (1997) find that 90% of the variance in lifetime welfare is attributable to inequality in skills at age 16, which in turn is partly or even mostly related to decisions made by parents from conception to their 16th birthday. They conclude by stating that 'obtaining measurements of investments in children before age 16, including prenatal care and maternal behaviors during

pregnancy, child care, child nutrition, grade school experiences, and so forth, would seem to be a critical endeavor' (p.516).

Parents' employment

In addition to their effect on family income, parents' employment and related child care decisions when their child is a pre-schooler may directly affect the child's development and ultimately his/her educational attainment. Ermisch and Francesconi (2002) study this issue using a sample of siblings born in the 1970s, for whom they can observe the number of months that their parents work in part-time and full-time jobs while they were a pre-schooler (aged 0-5) and their educational achievements at age 18 or older. In particular, they examine the impact of parents' working patterns on the probability that they received at least one 'A-level' qualification. As they compare siblings from the same family, the analysis effectively controls for long-run average family income, and the impact of parents' employment can be interpreted as the parameter of a 'conditional demand function' for children's educational attainments. While a comparison of siblings may eliminate 'endowment' heterogeneity that is common across siblings, it is generally not sufficient to identify the 'effect' of parents' employment.[9] Identification rests on the assumption that the idiosyncratic endowments of children are not revealed to parents at birth (it takes time before parents fully know their children's endowments), and also that the parameters of the children's human capital production function associated with inputs of parents' time and goods change slowly with age.[10]

[9] 'Endowments' are defined to be relevant 'abilities' or 'traits' transmitted from parents to children without regard to economic incentives. They could include aspects of the 'environment' as well as the genes.

[10] Estimation based on comparisons *between* families must also make this assumption, but additional stronger assumptions are required (e.g. no correlation in endowments across generations or no effect of parents' endowments on their employment or educational attainments).

Their analysis finds a negative and significant effect of the months of mother's full-time employment when the child was aged 0-5 on the probability that they received at least one A-level. The effect of mother's part-time employment is also negative but smaller and less well determined. Similarly, the effect of father's employment is small, not always precisely estimated, but again negative. These estimates are likely to reflect the non-parental child care options available to parents in the 1970s. Interestingly, the negative effect of the months of mothers' full-time employment when children were aged 0-5 is smaller for more-educated mothers, and this may reflect these families' ability to afford better child care, as well as other paid help in the home, thereby releasing parents to spend more of their time with their children. Nevertheless, the adverse effects on educational attainments for young people with more highly educated mothers who had worked full-time for longer periods remain substantial. They are even larger for less educated mothers.[11]

Two recent American studies, using in each case very different methods, find significant negative effects of the mother's full-time employment during the first five years of a child's life on his or her reading and math achievement scores when aged 5-7 (see Ruhm 2000, Bernal 2002). Thus, it appears that the impact of parents' employment decisions is evident very early, and the British results suggest that this has an impact on eventual educational achievement.

Personality

These effects of parents' time allocation decisions when their children were pre-schoolers on children's educational attainments, and indeed parents' child-rearing practices more generally, may not only operate by affecting cognitive development

[11] In the context of the conditional demand function framework, these results suggest that a higher 'full' family income would increase the educational attainment of children, because parents would choose to spend more time with their pre-school children when their full income is higher.

but also emotional development. For example, NICHD Early Child Care Research Network (2002) found that the more time children spent in any of a variety of non-parental care arrangements across the first 4.5 years of life, the more externalising problems and conflict with adults they manifested at 54 months of age and in kindergarten, as reported by mothers, caregivers, and/or teachers. These effects remained, for the most part, even when quality, type, and instability of child-care were controlled, and when maternal sensitivity and other family background factors were taken into account. These effects on a child's behaviour may affect them in school and influence subsequent educational attainments.

More generally, parents' actions may have long-term effects on life chances by affecting the development of a child's personality and social behaviour.[12] In work in progress, David Pevalin and I find that valuations by teachers of a number of aspects of personality/behaviour are related to subsequent behaviour affecting welfare later in life. In the 1970 British Cohort Study, which follows all children born in one week in April 1970, teachers rated members of the study *when the child was aged 10* on his or her popularity with peers, number of friends, co-operation, ability to negotiate behaviour and concentration. These five ratings were combined into a single standardized scale in which higher values are associated with more favourable outcomes (see Ermisch and Pevalin 2003a). Focussing on women, higher values of the scale are significantly associated with higher educational attainments and a lower probability of becoming a teenage mother, and a range of salient characteristics at age 30.[13] In particular, better teaching ratings significantly increase

[12] Some of these personality traits may be genetically linked to the parents, and they may also reflect 'idiosyncratic endowments' of the child, not related to parents' actions.

[13] These estimates control for the age of the woman's mother in 1970, her household's social class at age 10, and her mother's educational attainment. A one standard deviation higher value on the teacher-

a woman's probability of being employed, of having a partner, of *not* being a smoker and of owning her own home, and they also increase her earnings.[14] Ermisch and Pevalin (2003a) also show that having low self esteem at age 10 increases the probability of teenage motherhood, with its attendant consequences (Ermisch and Pevalin 2003b).

Partnership dissolution

The dissolution of parents' marriages and cohabiting unions, and the ensuing period of single parenthood that this entails, is also likely to affect children's life chances because expenditure on children, including investment in their human capital, is smaller after the partnership dissolution. After breaking up, the parent residing with the children, usually the mother, decides the level of expenditure on children. The other parent, usually the father, can only influence it by making transfers to the resident parent, because the father cannot usually monitor the division of his transfer between expenditure on children and the mother's consumption, particularly expenditure on young children. The allocation of resources to child expenditure implied by this arrangement is not efficient, because the mother does not take into account the effect of her choices on the welfare of the father. The inefficiency can be interpreted as an *agency* problem—the father can only indirectly affect child expenditure through the mother's choices. The lower expenditure on children in families in which the parents have split is likely to also mean lower investment in the children's human capital when they are young, which may affect children's development and achievements. This suggests that children who have experienced a

rating scale increases the probability of obtaining at least one A-level by 0.06 and reduces the risk of becoming a teen-mother by 30%.

[14] For example, a one standard deviation higher value on the teacher-rating scale increases the probability of being in employment at age 30 by 0.07, and increases earnings if employed by 16%. It also increases the probability of being an owner-occupier at age 30 by 0.12 and reduces the probability of being a smoker by 0.09.

family break-up may have lower achievements than children brought up in an intact family.

A concern when investigating this empirically is that the estimated association between childhood family structure and children's achievements might be spurious because of the mutual association that family structure and children's outcomes share with some unmeasured true causal factor. For example, the association between having experienced life in a single-parent family and educational attainment may not be necessarily the result of family structure during childhood. Rather, differences in educational success may simply reflect the characteristics of families in which the children of single mothers are brought up, some of which we cannot measure. Ermisch and Francesconi (2001) show that the effect of family structure on outcomes can be identified by comparing siblings in the same family if family structure does not respond to differences between siblings in 'endowments' (e.g. intelligence). On this assumption, estimates that relate differences in achievements between siblings to differences in their family structure experience would measure the causal impact of childhood family structure on young adults' achievements.[15] In any case, the 'sibling-difference' estimates control for more aspects of family background than the traditional estimates that rely on comparisons *between* families, making them less contaminated by unmeasured factors associated with both family structure and children's outcomes.

[15] But note that, in addition to inherent differences between siblings (e.g., one born with a disability), differences between siblings in their 'endowments' include differences over time in parental attitudes and behaviour which may affect both family structure and children's outcomes. For example, the father may develop an alcohol addiction, giving rise to a situation in which an elder sibling spends only a small part of his childhood with an alcoholic father while the youngest has one for most of her childhood. The father's alcohol problem may directly affect investment in the youngest child, and her parents may also divorce because of it, thereby causing correlation between individual 'endowments' and family structure.

Ermisch and Francesconi (2001) and Ermisch, Francesconi and Pevalin (2002) find that young adults who experience single parenthood as children have significantly lower educational attainments.[16] It is also associated with a number of other disadvantageous outcomes for young adults, including a higher risk of unemployment, a higher risk of having a child before a woman's 21st birthday, a higher chance of being a heavy smoker and higher likelihood of experiencing psychological distress in early adulthood. Most of these unfavourable outcomes are more strongly associated with an early family disruption (in pre-school ages), which is in line with the results for the impact of family income and parents' employment on educational attainments.

McLanahan and Sandefur (1994) also found an adverse impact of single parenthood on American children's educational attainments, but they did not use the sibling-difference estimation strategy. More recent research using the sibling-difference approach finds no significant impact of experiencing single parenthood on young Americans' educational attainments (Ginther and Pollak 2000). Björklund and Sundström (2002) also find no significant impact of parental separation on the final educational attainments (measured when aged 33-48) of Swedish children using the sibling-difference method with a sample of full biological siblings, who have all lived with both parents for at least part of their childhood.[17] These results suggest that the negative association between educational attainments and parental separation apparent in between-family comparisons mainly reflects 'non-random selection of families into single parenthood'. Comparison with the British results suggests that 'selection' may differ among countries, and also that the institutional and policy

[16] The more recent study (Ermisch *et al* 2002) has double the number of sibling pairs, because it uses more waves of the British Household Panel Survey, making the estimates more precise. It also is able to focus on more recent cohorts, those born during 1970-83.

context is likely to matter for the longer-term impact of parental break-up on their children. For instance, it is probably the case that Sweden provides more support (in a broad sense) to single parent families than Britain does.

3. Actions by parents in young adulthood

In the years when children are deciding whether or not to leave their parental home they are also likely to be making large investments in their human capital, both in formal education or in their jobs, and they are likely to find it difficult to borrow against their future income. Parents can help out their young adult children by making financial transfers to them and/or by allowing them to live with them. Higher parental income (wealth) should increase the probability that the child lives with his/her parents, while a higher child's income should reduce this probability. When parents do not make financial transfers, higher parental income increases the chances of co-residence because it increases the amount of (joint) housing consumption in the parental home relative to that when living apart. Without transfers, higher child's income means that he/she can more easily afford to purchase his/her own housing. If financial transfers are also made, higher parental income increases the chances of co-residence because parents would like to provide more help to their child when their income is higher and it is cheaper to do so when living together because of the public good aspect of housing. Conversely, when the child's income is higher, parents choose to provide less help to their child, thereby reducing the advantages of co-residence for providing support. In line with this reasoning, analysis of British panel data by Ermisch (1999) indicates that higher child's income increases the probability of living apart from parents, while higher parents' income has the opposite effect.

[17] The analyses by both Ginther and Pollak (2000) and Ermisch and Francesconi (2001) also compare half-siblings.

For reasons similar to the effect of a young person's income, we expect that young adults making larger human capital investments would live with their parents. In some countries, like Britain, certain forms of human capital investment, such as university education, may, however, dictate moving away from home. But financial transfers from parents can respond, such that the probability of a financial transfer should be larger for university students making this large human capital investment. Ermisch (2001) indeed finds that British university students are much less likely to live with their parents than young men in most of the other economic activity categories shown in Table 1, but much more likely to receive a financial transfer when living apart.[18] Other full-time students are the most likely to live with their parents.

Among employed British young men who are not full-time students and who do not have live-in partners, the frequency of either type of parental transfer declines steeply with earnings. For instance, 89% of those with earnings in the lowest quarter of the distribution live with their parents, compared with 46% of those in the highest earnings quartile. The incidence of financial transfers when living apart falls from 2.2% in the lowest earnings quarter to 0.8% in the highest. Interestingly, the unemployed are less likely to live with their parents and also less likely to receive a financial transfer when living apart than employed young people with earnings in the bottom half of the distribution. Thus, while there is some evidence that the family provides a type of unemployment insurance for their offspring, 'low earnings insurance' appears to be even more important. Whereas McElroy (1985) found that unemployed American young men were most likely to live with their parents, followed by the low paid, the evidence here suggests that a British young man with low earnings when he is employed is more likely to receive parental support than when he is unemployed. This

[18] The data come from the British Household Panel Survey, and most interviews are carried out during September-November.

may arise because government benefits are available to unemployed British young men, but not to those with low earnings. Three-fifths of unemployed British young men aged 16-29 without live-in partners received either Unemployment Benefit or Income Support (the main form of means-tested welfare benefit). This percentage was significantly higher for unemployed young men who lived apart from their parents than for those who lived with their parents (70% compared with 54%). Only 6% of young men in the lowest earnings quartile received any government benefits.

Fixed effects estimates, which allow for person-specific influences on living with parents and receiving transfers, confirm these cross-tabulations. In particular, amongst those young men with some earnings, those earning more are less likely to live with their parents, and higher earnings reduce the odds of receiving a financial transfer from parents when living apart. Unemployed young men without a partner are more likely to live with parents than those who have earnings in the upper three-fifths of the male earnings distribution, but the unemployed are less likely to live with their parents than young men who have earnings in the lowest two-fifths. Compared to having mean earnings, being unemployed increases the odds of co-residence by 30%. Analysis of transitions between living with parents and living apart from them in Ermisch (1999) indicates that the average positive impact of an unemployment spell among young men without a partner on co-residence comes about solely because of *returns* to the parental household among unemployed young men. Those experiencing unemployment are *more* likely than others to *leave* their parents' household.[19]

Overall, 80% of all British young men aged 16-29 without partners receive some parental support, either through financial transfers or co-residence. To put this in

[19] The annual home leaving rate is 17% for unemployed young men living with parents in the previous year, compared to 13% among other young men living with parents. The difference in annual return rates between young men living apart from parents experiencing unemployment in the previous year and other young men living apart from parents is 23% compared with 9%

perspective, only 13% of men of these ages receive government support, either in the form of welfare benefits (Income Support) or unemployment benefits. Thus, the incidence of family support for young men is much higher than that of government support.

4. Parent-child interactions beyond young adulthood

It has been estimated that more than one-half of the value of private transfers in the U.S. are transfers between living persons (Kotlikoff and Summers, 1981; Cox and Raines, 1985). It is often assumed that altruism lies behind such *inter vivos* transfers. But adult children can provide 'services' to their parents that do not have clear market substitutes, such as companionship, attention and conforming their behaviour to their parents' wishes. An increase in such services tends to reduce a selfish child's well-being because it undermines his or her independence and may use scarce non-working time. As suggested by Cox (1987), *inter vivos* transfers may have an exchange motive—financial transfers from parents in exchange for services from adult children. In his empirical analysis using U.S. data, Cox (1987) finds that the amount of transfers received increases with the recipient's income among families receiving transfers. This is not consistent with purely altruistic motives for transfers. It is, however, consistent with a more general cooperative framework in which higher amounts of the recipient's income increases their bargaining power, thereby increasing the implicit 'price' of services to parents.[20]

Parental transfers to adult children may also be affected by incentive considerations. A child's earnings are determined in part by the effort that he expends, but also by luck. His effort is not, however, likely be observed by his

[20] See Ermisch (2003, Ch. 9). One particular instance of this being 'dominant' altruistic parents making the child service and transfer decisions in the face of a binding constraint on the child's participation in the service-transfer arrangement.

parents (i.e. it is private information). As suggested by Chami (1998), while parents want to help their children financially when they need it, they also want them to behave responsibly. In other words, the parents' welfare depends directly on the labour market effort exerted by the child as well as indirectly through the income he earns and the disutility that effort causes him or her; that is effort is a 'merit good' for the parents. The parents must balance their desire to shield their child from labour market risk (because of their altruism) with their desire to induce higher effort from their child. Whether transfers increase or decline with a higher adult child's income depends on the relative strength of the two motives. Empirical results, such as those in Cox (1987), which show transfers increasing with the child's income could reflect the dominance of the incentive motive over the altruistic one, although both motives are operating. Conversely, even if transfers are found to decline with higher child's income, it would not imply that *only* altruistic motives are operative at the margin, but rather that they dominate incentive motives.

5. Bequests

As people age, bequests from parents become more important. Much of the research in this area has had to focus on the upper tail of the wealth distribution because the source of information was administrative records from estate files. But the British Household Panel Study provides information that is representative of the general population in terms of bequests. During 1997-2000 in Great Britain, the median age at receipt of a bequest was 46, with one-fourth of recipients being aged 32 or younger and three-fourths being aged 56 or younger. Table 2 shows how the percentage receiving a bequest in a year increases with age up to retirement age and then falls. The average bequest (amongst those receiving one) increases with age. Over all ages, the mean bequest was about £18,000 (2001 prices), which represents about one-half

of mean annual household income. Calculating the bequest-annual household income ratio for each person, on average, the bequest received was approximately the same as annual household income. Thus, the sums received are substantial.

Further analysis indicates that the probability of receiving a bequest in any given year is significantly higher for people with higher income, for homeowners and for women (all of these results are from multivariate analyses that also control for age). Given receipt, homeowners receive larger bequests than tenants, but the amount is not significantly related to income. Bequests are significantly smaller for married recipients (by about £9,000), which is likely to reflect higher bequests to surviving spouses than to offspring (the data do not identify the source of the bequest). Given marital status, they are also smaller for women (by about £5,000).

Behrman and Rosenzweig (2002) use data from twins that is relatively representative of the American population in terms of bequests, and it allows a focus on bequests from parents. They find that bequests are received by 65% of the sample of twins both of whose parents had died, and the average inheritance represented about one-half of current full-time earnings. These data allow analysis of how different offspring are treated by parents in their wills.

According to the so called 'wealth model' of Becker (1981), if the parents are sufficiently wealthy to make financial transfers to each of their children, then parents invest in the human capital of each child up to the point that the marginal return equals its marginal cost. Parents invest more in the human capital of a more able child, who then ends up with higher earnings, but a less able child is *fully* compensated by higher monetary transfers in the form of gifts and bequests. Because *inter vivos* transfers are usually too small to offset much of the differences in lifetime

earnings between siblings, differential bequests would have to be an important element of such compensatory transfers.

Similar to the exchange of services for *inter vivos* transfers suggested by Cox (1987), Bernheim *et al* (1985) propose that parents threaten their child with dis-inheritance if he does not provide his parents with a particular level of child service ('attention') in exchange for a bequest. At the margin, bequests are used to purchase child services.[21] The threat to disinherit must, however, be credible, and because parents are assumed to care about their child's welfare, it is less likely to be so if the parents have only one child. With two or more children, the threat is more likely to be credible because the parents are assumed to care for all of their children, thereby reducing the incentive to renege on the promise to disinherit children who do not comply and to redistribute the estate amongst the other children.

In line with their theoretical model, Bernheim *et al* (1985) find that services provided by their children, measured by frequency of visits and telephone calls, increase with the level of bequeathable wealth in multi-child families, but not in single-child families. Furthermore, services do not increase with non-bequeathable wealth (social security and pension annuities).

But the empirical analysis by Behrman and Rosenzweig (2002) contradicts this model and the wealth model. In particular, they find that there are no significant differences in bequests between siblings, despite significant differences with respect to education, earnings and visits with parents.

[21] The levels of service and bequest are assumed to come from maximizing the parents' utility subject to the utility level that the child would achieve if he did not receive a bequest, which is increasing in his own income. That is, the child's participation constraint is binding, with parents obtaining the entire surplus generated by the transaction between parents and child.

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Table 1:Main Activity and Parental Support

Men aged 16-29 who are neither married nor cohabiting, Row Percentages

State:	Living Apart, No Transfer	Coresiding with Parents	Living Apart, Receiving Transfer	N (person-years) (100%)
University student*	32.1	43.7	24.2	458
Other full-time student*	3.6	95.6	0.8	475
Unemployed	20.9	78.4	0.8	536
Earnings, lowest quarter	8.7	89.1	2.2	1,562
Earnings, second quarter	16.1	82.9	1.0	1,203
Earnings, third quarter	26.7	72.8	0.4	920
Earnings, highest quarter	53.0	46.2	0.8	610
Neither in labour force, nor a student, nor family care	24.6	73.7	1.7	120
Entire sample	20.5	76.5	3.0	5,884

*May also have some earnings.

Source : British Household Panel Study, 1991-99

Table 2:Bequests by Age, Great Britain

State:	Per cent Receiving Bequest*	Mean Amount of Bequest**	N (person-years), Un-weighted
Less than 25	2.4	£4,340	7,807
25-34	2.7	6,850	9,800
35-44	2.5	20,610	9,759
45-54	3.3	21,260	8,290
55-64	3.4	26,670	6,100
65 and over	1.6	29,900	9,471
All adults	2.6	18,140	51,227

*Weighted by each year's cross-section weights.

**Weighted amounts (2001 prices) among those receiving a bequest.

Source : British Household Panel Study, 1997-2000