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ABSTRACT

What Predicts a Successful Life? A Life-Course Model of Well-Being*

If policy-makers care about well-being, they need a recursive model of how adult life-satisfaction is predicted by childhood influences, acting both directly and (indirectly) through adult circumstances. We estimate such a model using the British Cohort Study (1970). The most powerful childhood predictor of adult life-satisfaction is the child's emotional health. Next comes the child's conduct. The least powerful predictor is the child's intellectual development. This has obvious implications for educational policy. Among adult circumstances, family income accounts for only 0.5% of the variance of life-satisfaction. Mental and physical health are much more important.

JEL Classification: A12, D60, H00, I31

Keywords: well-being, life-satisfaction, intervention, model, life-course, emotional health, conduct, intellectual performance, success

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"The ultimate purpose of economics, of course, is to understand and promote the enhancement of well-being".[1] This sentiment, expressed in 2012 by the Chairman of the US Federal Reserve, is of course directly in line with that of Adam Smith and the other founding fathers of economics. What has been lacking is evidence of the determinants of well-being. That situation is now changing. Cross-sectional data have been analysed for some decades, and show the strong relation between current characteristics and well-being. But we also need to know how those characteristics arose, if we want to decide at what point in the life-cycle interventions would be most cost-effective.

So, if policy is to maximise well-being, the prerequisite is a model of the life-course that captures in a quantitative way the relative impact of all the main influences upon subsequent well-being. Separate studies of the effect of one variable at a time are of little use in thinking about resource allocation. The effects have to be compared.

The need here is not unlike the need of macroeconomic policy for a working model of the economy. So it is not surprising that the OECD, having developed an international standard for the measurement of well-being,[2] are calling for much more research to model what determines it.

1. Why a Life-Course Model?

To be useful, a model must combine the two main strands in previous well-being research. The first of these, pioneered by among others Campbell, Converse and Rodgers, Diener, Kahneman, Oswald, Frey and Helliwell, has focussed on how well-being is affected proximally by other adult outcomes. These include those that can be called 'economic' (income, employment, educational qualifications), those that are 'social' (family status, criminality) and those that are 'personal' (physical and emotional health).[3]

The second strand of work so far has used cohort data to explore the distal influence of childhood and adolescence upon adult well-being. This strand follows the earlier work of economists such as Heckman and Smith[4] on the lifetime determinants of earnings. But, instead, it takes adult well-being as the outcome of interest. Recent leaders in this field of work include Frijters, Johnston and Shields.[5] But their work focusses exclusively on the well-being outcome, and ignores the determination of other adult outcomes like income, employment, family status, criminality and health, which then feed into well-being. Such an approach could lead to an excessive focus on childhood and adolescence as determinants of well-being, with little role left for policies relating to adult life.

[1] Speech by Ben S. Bernanke to 32nd General Conference of the International Association for Research in Income and Wealth, Cambridge, Massachusetts, 6th August 2012.
[2] OECD (2013).
[3] See for example, Campbell et al. (1976); Kahneman et al. (1999); Clark and Oswald (1994); Frey and Stutzer (2002); and Helliwell (2003). Layard et al. (2012) summarise much of this research.
[4] See for example Cunha and Heckman (2008); Cunha et al. (2010); Goodman et al. (2011).
[5] Frijters et al. (2011), see also Richards and Huppert (2011) and Boyce et al. (2013). There is a considerable earlier literature on the determinants of adult malaise e.g. Furstenberg and Kiernan (2001); Knapp et al. (2011a) also examine effects on earnings and employment.

So what is needed is a combination of the two approaches of the kind depicted in Figure 1. In this first attempt at such a combined "path model", we take adult life-satisfaction as the measure of a successful life. This is determined partly by "adult outcomes", and partly by family background and childhood development. But these "adult outcomes" also have to be explained themselves – and childhood development may be crucial to this. Our family background in turn profoundly influences development in childhood.

The key question is how important are the different links in the chain that predicts life-satisfaction. A good model will focus on the following questions

(i) How important are the different adult outcomes (economic, social and personal) for well-being?

(ii) What is the role of the different dimensions of child development (intellectual performance, conduct and emotional health) and of family background? How do they affect adult life-satisfaction, both directly and through their effect on adult outcomes?

(iii) How far can we predict adult life-satisfaction at different earlier points in a person's life? So how far does the child "reveal" the adult? Or can we all be remade in adulthood?

By answering these questions we can have a powerful, new integrated way of thinking about how a satisfying life is constructed and what matters more than what in that process. And from that we should be able to help policy-makers with the huge issues they have to decide: how much to spend (or cut) on schools, children's services, youth services, physical health, mental health and so on. Rational answers should depend on the size of the different influences on well-being, and the cost of affecting these influences.

Ideally what policy-makers need is a fully causal model. With its help they could first identify candidate areas for policy development. Specific policies would then be evaluated by controlled experiment, hopefully followed up over many years. But such long follow-up is expensive and involves delay. So a second use of a causal model is to simulate the long-run effects of interventions where we only know their short-run effects.

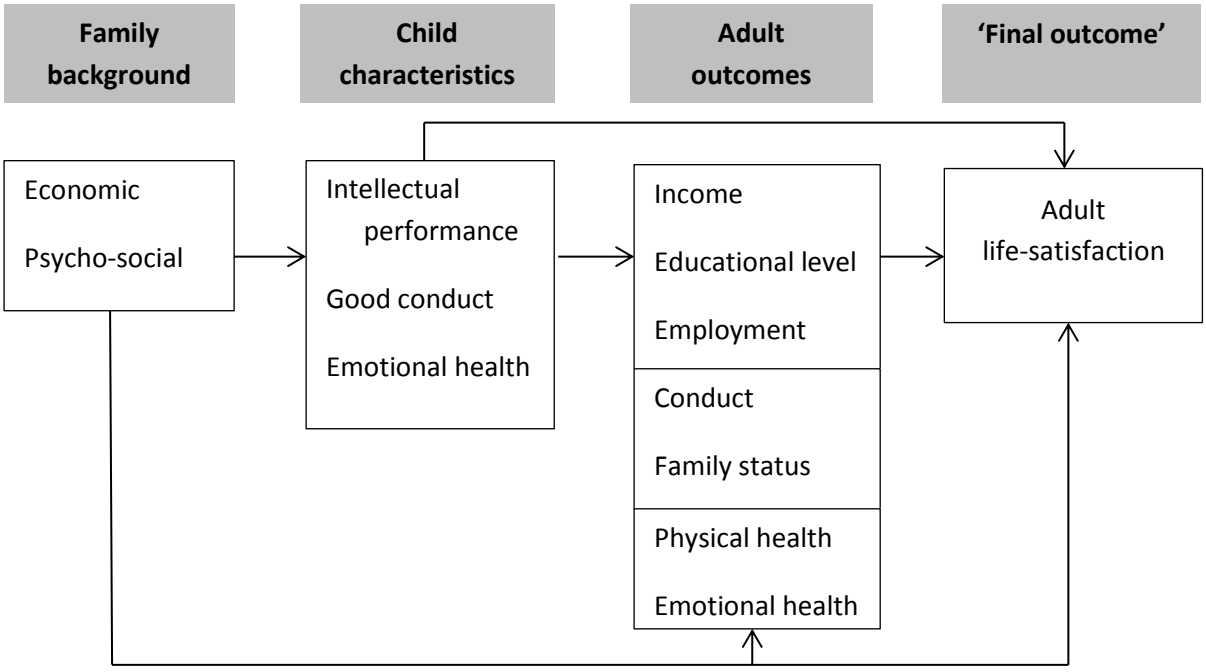

Fig. 1. *A Model of Adult Life-Satisfaction*

To develop a fully causal model will take years more of data-collection and research. In particular it will be crucial to include genetic controls, since omitting variables of this kind can exaggerate the extent to which earlier life determines later life.[6] At the same time, measurement error tends to underestimate the continuities, and better measures need to be developed.

But in the meantime policy-making will continue. At present most of the policy debate is conducted without reference to any quantitative evidence about what matters most for well-being. It would be much better if it were informed by broad orders of magnitude from a quantitative model, even if the model is more properly called predictive than causal. We have to start somewhere and, as we shall see, even from a simple model, some striking conclusions emerge.

[6] See for example, De Neve et al. (2012).

2. Our Model, Data and Methods

The model we develop is a recursive path model in which life-satisfaction at each age can in principle depend on everything that happened before that.[7] As shown in Figure 1, antecedent conditions include seven adult state variables (X_i) that evolve throughout a person's adult life (income, educational level, employment, conduct, family status, physical and emotional health) – or eight if we include life-satisfaction (X_8). During childhood we only have data on three of these characteristics: intellectual performance (corresponding to 'qualifications' in later life); conduct (continuing in later life); and emotional health (continuing in later life).[8] Thus for three of the X_i variables we have data for early life, while for others the data start in adulthood. We also have data on the family background of the individual, characterised by the family's economic status (F^E) and its psychosocial state (F^P).

To explain the evolution of all the X_i variables, we have a recursive or path model, in which the value of each variable may in principle depend on everything that has gone before. Thus

$$X_{it} = f_{it}(F^E, F^P, lags\ of\ X_1, \ldots lags\ of\ X_8) \qquad (i = 1,\ldots,8;\ all\ available\ t)$$

2.1. *Variables*

To estimate this model we use the British Cohort Study, which covers people born in the second week of March, 1970. Well-being is measured by life-satisfaction at age 34. To explain this we have adult outcome variables, three sets of childhood characteristics and the characteristics of the family.

Specifically our **adult outcomes** are as shown in Figure 2. Note that we have measured emotional health and self-perceived health at 26 rather than 34 so as to avoid any charge that these are the same as life-satisfaction rather than predictors of it.

Emotional health and life-satisfaction are in fact very different, which is why life-satisfaction is predicted by so many other influences as well. For life-satisfaction the question is, "How dissatisfied or satisfied are you about the way your life has turned out so far?" For adult emotional health we have 24 yes/no questions relating to tiredness, depression, worry, irrational fear, rage, irritation, tension and psychosomatic symptoms (see Appendix B). These are very different from the life-satisfaction question.

[7] For this type of structural equation modelling, see for example Goodman et al. (2011) and Schoon et al. (2012).
[8] Unfortunately the BCS includes no measure of physical health in childhood, but childhood physical health probably accounts for a relatively small part of the variance of adult outcomes.

Economic	Log income (equivalised)	at 34
	Educational achievement	by 34
	Employed (measured as not employed)	at 34
Social	Good conduct (= -no. of crimes)	at 16-34
	Has a partner	at 34
Personal	Self-perceived health	at 26
	Emotional health	at 26

Fig. 2. *Adult Outcomes*

The **childhood variables** are shown in Figure 3. They include variables relating to the child and to the parents ("family background"). For a child there are three main dimensions of development – intellectual performance, social behaviour and emotional health. Economists have traditionally focussed heavily on intellectual development, but some like Heckman have widened the perspective to include also non-cognitive skills.[9] But by this they usually mean social behaviour or sometimes self-discipline (or grit). They do not usually mean how the children feel – are they anxious or depressed? This is a very important dimension of a person, and psychologists who study child development make a strong distinction between social (externalising) development and emotional (internalising) development.[10] This is reflected in our paper by the distinction between social and emotional learning.

This difference between social behaviour and emotional health is conceptually important, and the two variables are not highly correlated. Questions on social behaviour relate to destroying things, fighting, stealing, disobedience, lying, bullying, being disliked and unsettled and impulsive behaviour. Questions on children's emotional health are more internal, and relate to worry, unhappiness, sleeplessness, eating disorder, bedwetting, fearfulness, school avoidance, tiredness, and psychosomatic pains. These are very different dimensions of personality, with different effects.[11]

We have measurements on the three child variables at 5, 10 and 16. We also have measurements on the family at different ages but for simplicity we consolidate these into the

[9] See Cunha and Heckman (2008); Almlund et al. (2011) and Goodman et al. (2011). Recently Heckman has extended his perspective to the 5 main (OCEAN) dimensions of personality.

[10] On the measurement of children's emotional health and behaviour, see Rutter et al. (2008).

[11] To measure these two variables we take simple aggregates of answers to the individual questions. Clinical psychologists usually do the same. Developmental psychologists often do also, but at other times they carry out factor analysis to extract one or more factors from the multiple answers. The problem with factor analysis is that it relies on the internal coherence of the answers, not on their predictive power. For prediction one could of course enter each answer separately, but the problem then would be different relative weights in every separate regression. For an approach using factor analysis see Richards and Hatch (2011).

two sets of family variables as shown in Figure 3, where age refers to the age of the child.[12] Exact definitions of all variables are in Appendix A.

	Age of child
Child characteristics	
Intellectual performance	5, 10, 16
Good conduct	5, 10, 16
Emotional health	5, 10, 16
Family background	
Economic (F^E)	
Father's socio-economic group	10
Family income	10
Number of siblings	10
Father in work	0, 5, 10 average
Mother's and father's age on leaving full-time education	--
Psycho-social (F^P)	
Mother's emotional health	5, 10 average
Child conceived within marriage	--
Both parents still together	10

Fig. 3. *Childhood variables*

[12] We have sacrificed the purism of a totally recursive model, with the family variables changing from period to period, for a clearer but simpler broad-brush approach where we put together aggregated measures of what the family was like when the child was young.

2.2. *Method of analysis*

We begin in Table 1 by predicting life-satisfaction from other adult outcomes and from childhood variables. Then in Table 2 we examine how the other adult outcomes are determined by childhood variables. In Table 3 we examine the issue of mediation: by what route each childhood variable affects the life-satisfaction of the adult. In Table 4 we focus on the family as the sole predictor, and in Table 5 we examine how far adult life-satisfaction can in fact be predicted by information available at each age. More detailed analyses are available in an online appendix, whose contents are listed in Appendix B.

Analysis is by OLS and variables (except gender) are standardised throughout. Thus all coefficients are standardised regression coefficients (i.e. partial correlation coefficients or β-coefficients). The squared value of each coefficient shows how much the right-hand variable contributes on its own to the variance of the left-hand variable (ignoring its covariance with the other right-hand variables). It is a meaningful measure of the importance of the variable.

However, to see the wood for the trees, some simplification is helpful. Let us take an example. Suppose we want to look at the overall effect of child conduct on adult outcomes. We have measures of child conduct at ages 5, 10 and 16 (C_5, C_{10}, C_{16}). In our first stage regression for adult outcome X_i (shown in the online Appendix) we estimate the effects of each of these conduct variables separately. This gives the following:

$$Y = c_5\, C_5 + c_{10} C_{10} + c_{16} C_{16} + etc.$$

$$= (c_5 + c_{10} + c_{16})\, .SD(C).\frac{C}{SD(C)} + etc.$$

where

$$C = \left(\frac{c_5}{c_5 + c_{10} + c_{16}} C_5 + \frac{c_{10}}{c_5 + c_{10} + c_{16}} C_{10} + \frac{c_{16}}{c_5 + c_{10} + c_{16}}\, C_{16}\right)$$

Thus the coefficient on the composite variable C is the sum of the separate coefficients times the standard deviation of the composite variable, *SD(C)*.[13] This is the procedure we use throughout to calculate the effect of composite variables.

[13] (i) To compute *SD(C)* we use only the observations where there are no missing values on any of the variables in the composite variable, *C*. For obvious reasons *SD(C)*<1 unless all the variables are perfectly correlated.

(ii) To obtain the standard error of the estimate of $(c_5 + c_{10} + c_{16}).SD(C)$ we rerun the equations replacing C_5, C_{10} and C_{16} by C. This gives an estimate of the standard error of the estimate of $(c_5 + c_{10} + c_{16})$ and we then multiply this standard error by $SD(C)$.

Unfortunately there are many missing values of variables. Each regression is performed on all survey members for whom we have a non-missing value of the left-hand variable. When there is no data on a right-hand variable, we include a variable-specific dummy to register the fact (the so-called Missing Indicator method). We have also used as an alternative the Multiple Imputation method and the main results are very similar – see online Appendix. Our discussion of results is consistent with the results of both methods.

Where there are missing values, the R^2 of the equation is biased downwards since all missing values have been assigned the same (dummy) value. To simulate the true R^2, we start from the standard property of all standardised regressions. This is that if

$$Y = \Sigma p_i X_i + e$$

R^2 is given by

$$R^2 = \Sigma Y^2 - \Sigma e^2 = \sum_i \sum_j p_i p_j r_{ij}$$

where r_{ij} is the correlation coefficient between the two variables. So in all tables we compute R^2 using this formula, taking r_{ij} from the correlation matrix in Appendix B.[14]

We can now turn to the results.

3. Results

3.1. *Predictors of life-satisfaction*

We begin by looking directly at the determinants of life-satisfaction. In Table 1, the first column focuses on the **proximal predictors of life-satisfaction** – that is, the effect of the individual's other adult characteristics. Already we find a result quite different from all previous research – the prime factor is emotional health (measured 8 years earlier). All the other six variables also have significant effects and, as usual, education is the least important predictor of life-satisfaction. Income explains on its own about 0.5% of the variance of life-satisfaction – a fairly common finding.

One might of course question the validity of cross-section results like these. Clearly it would be helpful to carry out a panel data analysis, but the BCS data do not permit this. We adopted two strategies here, using the data for age 34 and age 26. In one analysis we regressed the change in life-satisfaction on the change in "having a partner", self-perceived health and emotional health (the only 3 variables for which there are good data on changes). The standardised coefficients for the 3 variables (comparable with those in Column 1) were 0.01, 0.09 and 0.11 – supportive of our earlier conclusions about the importance of emotional health. In the second analysis we introduced lagged life-satisfaction on the right-hand side and measured all 7 other variables at their age 34 level (the idea being that this would remove

[14] In doing so we are attempting to use all available information to proxy the 'true' explanatory power of our equations as it would be in a world without missing observations.

at least part of the fixed effect). The results are shown in the footnote below and are again supportive of the conclusions from Column (1).[15]

What happens if, instead, we look at the **distal predictors of life-satisfaction**, that is the "childhood variables" (family background and child characteristics)? The result is shown in the second column of the table. Again emotional health emerges as the most important variable – in childhood as in adulthood. Next comes behaviour as a child. The intellectual development of the child is the least important of the three dimensions of child development, when we consider life-satisfaction as the outcome of interest.

This ranking is, roughly speaking, the inverse to that of most policy-makers. In popular discussion one encounters two main criticisms of the well-being approach (often from the same people). One is that the concept is meaningless; the other is that, even if we accepted its importance as a policy goal, it would make no difference to policy priorities.[16] As our evidence shows, the second point could not be more wrong.

Two other points emerge from the second column of the table. Family background continues to matter, even after taking child characteristics into account. And women are more satisfied with their lives, by about 8% of one standard deviation.

The next obvious question is, **how does early life exert its influence on adult life-satisfaction?** If the influence were direct, one might wonder why we have so many policies relating to adulthood – employment policy, income redistribution, health and the like. But, as the third column shows, adult life still has an important impact on life-satisfaction even after we have allowed for the influence of family and childhood. In Column (3), which includes both sets of influence, the coefficients on adult characteristics are very little reduced, while those on child characteristics are mostly reduced by about a half.

This means that roughly half the effect of childhood on adult life-satisfaction is mediated through the effect of childhood on adult outcomes and the effect of adult outcomes on life-satisfaction.[17] The other half is a direct, unmediated effect. The exception is intellectual performance, where the direct effect is estimated as somewhat negative but there is a substantial mediated effect through adult outcomes.

[15] Life-satisfaction at 34 = .034 log Income + .619 Educational achievement
(.010) (.009)
+ .065 Employed + .029 Good conduct + .090 Has a partner
(.011) (.012) (.011)
+ .095 Self-perceived health at 34 + .323 Emotional health at 34
(.010) (,012)
+ .258 Life-satisfaction at 26
(.013)

[16] See HM Treasury (2008).

[17] To think about mediation it is helpful to note the following relationships between standardised variables. Suppose $Y = aX + bZ$ and $X = cZ$. Then $Y = (ac+b)Z$. Since all coefficients are less than unity and (we assume) positive, a finding that $ac+b$ is roughly double b can only arise if a is substantially bigger than b.

3.2. *Predictors of adult outcomes*

So the next step is to examine the effect of childhood on the adult outcomes. If we look at economic outcomes (income, unemployment and educational achievement), the most powerful influence is the intellectual development of the child and the child's socio-economic background. These are of course standard findings in labour economics. However, if we turn to the social outcomes (criminality and family formation), the pattern changes. A key thing is how the person behaved as a child.

Finally when we come to the 'personal' outcomes, adult emotional health and self-perceived health, by far the most important influence from childhood is the child's emotional health. This echoes our earlier finding that adult life-satisfaction depends the most heavily on emotional health as a child.

3.3. *More on mediation*

Now that we have charted how childhood affects adult outcomes, it is worth checking the consistency of our earlier findings about mediation (in Table 1). In Table 3 we give the estimated indirect effect of each childhood variable, combining the way it affects adult outcomes (in Table 2) with the way these outcomes affect life-satisfaction (in Table 1, Column 3). The results are given in the left hand column of Table 3. We can now compare these 'simulated' indirect effects with the indirect effects implied in Table 1 (by the difference between columns (2) and (3)). As can be seen, the estimates are close, which confirms that we have a consistent story.

3.4. *The effect of the family*

As we have noted, the effect of family variables is small, once childhood variables are taken into account. But these childhood variables are themselves affected by family influences. So what happens if we look at the reduced form equations, where we include only the effect (direct and indirect) of family characteristics on adult outcomes (see Table 4)?

The family of course emerges as more important, particularly as a predictor of educational performance and income – the variables hitherto most studied by economists. But (in so far as we can measure the family's characteristics) family variables have a relatively more limited impact on life-satisfaction, criminal behaviour, and family formation.

3.5. *Does the child reveal the adult?*

This brings us to a final question. At what stage of a person's development does it become at all possible to predict their adult outcomes? We examine this in Table 5.

It has recently become quite fashionable to argue that by age 5 key experiences (plus genes) have largely determined a person's outcomes as an adult. This is done by showing large odds ratios between the adult outcomes of more and less advantaged children. But the proper test of predictability is the R^2*s*. These are shown in Table 5.

The table shows how well we can predict each adult outcome from information available about a person at different stages of their life – birth (roughly speaking), age 5, age 10, and age 16. As Frijters, Johnston and Shields[18] have pointed out, life-satisfaction is extremely difficult to predict even at age 10 and only slightly easier at age 16. The most predictable feature is educational achievement. But income is extremely difficult to predict, as is life-satisfaction. Almost all outcomes are much easier to predict at age 16 than at age 5, indicating the importance of a balance between earlier and later intervention.[19]

4. Use for Policy Analysis

Any future policy-maker aiming at population well-being will need to use a model of the kind we have been discussing – including genetic controls if possible.[20] A life-course model is the product of the interaction between millions of individuals and the institutions in which they live. It is not a law of nature. But it is the correct starting point for considering how varying an institution or a policy would affect the citizens for better or worse. Our existing model already suggests the need for different policy priorities. But an ideal model would be more detailed, and refined by replication.

How would it be used? Let us assume that the policy-maker wanted to maximise the sum of life-satisfaction of citizens of all ages.[21] This would require a continuous record of life-satisfaction at each age, plus a model of how that path was determined. And that model would immediately suggest key areas for greater or less public policy intervention.

4.1. *Effectiveness of intervention*

But to know whether any particular intervention was cost-effective would ideally require an experiment, with a long follow-up. However, such follow-ups are expensive, and often we only know the short-run effects of an intervention. A model can therefore be extremely useful for simulating the long-run effects of an intervention whose short-run effects we know (but nothing more). For example, if we give parent training to a badly behaved 5-year-old and the effect size is β. We can then go to the model and simulate all the subsequent effects of β standard deviations change in conduct at 5.

4.2. *Costs*

But finding the effects is one thing; assessing the cost-effectiveness of the intervention is another. For that we need to know not only the initial cost of the original intervention but

[18] Frijters et al. (2011).
[19] Clearly all findings in this paper are affected by measurement error.
[20] This may become possible through greater availability of twin and adoptee studies, or better identification of critical gene sequences in DNA (where DNA data are now routinely collected in many studies).
[21] Many people believe more weight should be given to the avoidance of misery than the achievement of the highest levels of life-satisfaction (Layard (2011), Ch.15). This would require a concave social welfare function, based on ethical judgements. The present text ignores that complication.

also any impact it has on subsequent public expenditure. Some impacts will increase subsequent public expenditure – for example, a successful education intervention may lead to more staying on at school. Or the effects on cost may be negative – for example fewer costs of crime and justice.

If the well-being benefits were positive and the net costs were zero or negative, that could be decisive. And indeed much of the discussion of early intervention to date has been of this kind.[22] But public expenditure does not have to have a zero net cost to the taxpayer, and much of it has of course a positive net cost. So many analyses of childhood interventions will use estimates of benefits as well as net cost to get some feel for the level of cost-effectiveness.

4.3. *Cost-effectiveness*

In that case how would we judge if they were cost-effective? It is best to think of the level of public expenditure as being pre-determined, independent of the potential benefits of current policy options. If so, the correct decision rule for evaluating an intervention is to select a cost-effectiveness ratio (λ) such that all interventions with ratios lower than λ would together just exhaust the available funding for public expenditure.

But all of this requires good information on cost. So future models will have to include much more structure than the model in this paper. They will need to include all publicly-financed activities in which the individual becomes involved (be it education, pre-school, health-related, law and order, employment or welfare benefits). In our future work on ALSPAC[23] we plan this degree of detail.

4.4. *When to intervene?*

So can anything be said about where and when to intervene? These are separate issues. The first concerns which areas of life require more intervention or less – for children is it their emotional, behavioural or intellectual life and for adults is it income support, employment policy, or family support?

But the second is when to intervene – earlier or later.[24] If childhood well-being matters as much as adult well-being,[25] then the main issue on the benefit side is how long the effects last. For language learning for example the answer here is clear (it lasts longer if the intervention is earlier). But for emotional learning there is still much to be discovered. On the cost side adult interventions generally produce immediate flow backs to public finance as more people go out to work and earn. Child interventions can produce massive savings to public finances but these are often quite delayed. Clearly we need interventions at all ages and the optimum balance will remain unclear until we have better life-course models.

[22] See for example, Knapp et al. (2011b).
[23] Avon Longitudinal Study of Parents and Children.
[24] Heckman has argued strongly in favour of early intervention.
[25] As argued for example by Layard and Dunn (2009).

5. Conclusions

Policy-makers need models which show them the impact of all the main factors affecting adult life-satisfaction, in a consistent framework using the same metric. We estimate such a model using the British Cohort Study (1970).

Adult life-satisfaction is directly affected by adult circumstances and by childhood characteristics. But, even though childhood characteristics also affect adult circumstances, they have a limited ability to predict adult life-satisfaction.

By far the most important predictor of adult life-satisfaction is emotional health, both in childhood and subsequently. Pro-social behaviour in childhood is the next most important predictor. And the intellectual performance of a child is the least important predictor of life-satisfaction as an adult. These findings have massive implications for educational policy.

Intellectual performance is of course a good predictor of the person's educational achievement and income. But income only explains 0.5% of the variance of adult life-satisfaction.

Family background (economic, social and psychological) is a quite limited predictor of most adult outcomes except educational qualifications.

Table 1
Predictors of life-satisfaction at 34

	(1) Using adult variables only	(2) Using childhood variables only	(3) Using both
Log income	0.055		0.052
	(0.012)		(0.012)
Educational achievement	0.035		0.029
	(0.010)		(0.011)
Employed	0.085		0.082
	(0.013)		(0.013)
Good conduct	0.066		0.061
	(0.014)		(0.014)
Has a partner	0.116		0.113
	(0.012)		(0.012)
Self-perceived health (26)	0.068		0.065
	(0.013)		(0.013)
Emotional health (26)	0.204		0.181
	(0.014)		(0.015)
Intellectual performance (5 10 16)		0.045	-0.035
		(0.016)	(0.020)
Good conduct (5 10 16)		0.085	0.052
		(0.019)	(0.019)
Emotional health (5 10 16)		0.174	0.098
		(0.021)	(0.020)
Family Economic		0.055	0.025
		(0.018)	(0.014)
Family Psychosocial		0.030	0.024
		(0.016)	(0.018)
Female	0.068	0.082	0.072
	(0.021)	(0.022)	(0.021)
Observations	8,868	8,868	8,868
Adj R-square	0.108	0.071	0.142

Robust standard errors in parentheses
Note: Adjusted R^2 excludes the effect of gender on the explained variance and the total variance. All adult variables are measured at 34, unless stated otherwise.

Table 2
Predictors of adult outcomes, using information up to age 16

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Intellectual performance	0.136	0.437	0.028	0.074	0.095	0.086	0.097	0.045
(5 10 16)	(0.014)	(0.012)	(0.015)	(0.012)	(0.016)	(0.015)	(0.013)	(0.016)
Good conduct	0.031	0.078	0.008	0.169	0.089	0.054	0.078	0.085
(5 10 16)	(0.019)	(0.013)	(0.028)	(0.018)	(0.020)	(0.022)	(0.018)	(0.019)
Emotional health	0.069	0.036	0.017	-0.056	-0.023	0.158	0.328	0.174
(5 10 16)	(0.018)	(0.036)	(0.055)	(0.014)	(0.020)	(0.020)	(0.021)	(0.021)
Family Economic	0.081	0.188	0.020	0.087	0.038	0.056	0.075	0.055
	(0.015)	(0.015)	(0.031)	(0.088)	(0.063)	(0.019)	(0.029)	(0.018)
Family Psychosocial	-0.009	0.023	-0.027	0.038	0.030	0.043	0.066	0.030
	(0.064)	(0.013)	(0.015)	(0.015)	(0.028)	(0.016)	(0.018)	(0.016)
Female	0.175	-0.014	0.041	0.409	-0.061	-0.090	-0.306	0.082
	(0.022)	(0.018)	(0.020)	(0.018)	(0.025)	(0.023)	(0.021)	(0.022)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.05	0.376	0.01	0.07	0.029	0.067	0.207	0.071

Robust standard errors in parentheses
Note: See Note to Table 1.

Table 3
Indirect effect of childhood variables upon life-satisfaction at 34

	(1) Simulated	(2) From Table 1 [Col (2) minus Col (3)]
Intellectual performance (5 10 16)	0.068	0.080
Good conduct (5 10 16)	0.049	0.033
Emotional health (5 10 16)	0.079	0.076
Family Economic	0.046	0.030
Family Psychosocial	0.022	0.006

Table 4

Predictors of adult outcomes, using information on family only

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Family Economic	0.124	0.323	0.079	0.134	0.069	0.069	0.114	0.067
	(0.018)	(0.019)	(0.030)	(0.051)	(0.020)	(0.020)	(0.027)	(0.017)
Family Psychosocial	0.032	0.079	0.009	0.068	0.035	0.066	0.115	0.065
	(0.014)	(0.079)	(0.026)	(0.013)	(0.013)	(0.012)	(0.014)	(0.013)
Female	0.183	0.054	0.072	0.477	-0.028	-0.092	-0.326	0.086
	(0.021)	(0.018)	(0.021)	(0.019)	(0.024)	(0.022)	(0.021)	(0.021)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.021	0.0176	0.007	0.028	0.009	0.022	0.051	0.018

Robust standard errors in parentheses

Note: See Note to Table 1.

Table 5

Adjusted R^2 for equations including different information

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Information on:								
Family only	0.021	0.176	0.007	0.028	0.009	0.022	0.051	0.018
Up to age 5	0.029	0.176	0.008	0.043	0.016	0.027	0.061	0.022
Up to age 10	0.035	0.247	0.009	0.051	0.019	0.029	0.071	0.027
Up to age 16	0.050	0.376	0.010	0.070	0.029	0.067	0.207	0.071

Note: See Note to Table 1.

Appendix A: Adult and child variables[26]

ADULT

Life-satisfaction (34)	"Here is a scale from 0-10. On it "0" means that you are completely dissatisfied and "10" means that you are completely satisfied. Please tick the box with the number above it which shows how dissatisfied or satisfied you are about the way your life has turned out so far."		
Log income (34)	Household disposable income per OECD adult equivalent (extra adults .7; children .5)		
Educational achievement (34)	PhD or masters = 0.750 Degree = 0.486 A level = 0.237 GCSE = 0.188 CSE = 0.043 No qual = 0 (Values taken from a regression of male log full-time earnings on "having a family", childhood emotion and conduct and 5 education dummies.)[27]		
Employed (34)	Not unemployed at time of interview.		
Has a partner (34)	Married/cohabiting with children = 0.685 Married/cohabiting without children = 0.530 Single with children = -0.004 Single without children = 0 (Values taken from a regression of life-satisfaction on 6 "success" variables plus 3 family dummies.)[28]		
Good conduct (16-34)	Minus total times found guilty by a criminal court or formally cautioned at police station.		(subjects' replies)
Self-perceived health (26)	Single Question with answers treated as 1-4		
Emotional health (26)	Sum of replies to 24 questions		(subjects' replies)

CHILD

Intellectual performance	Age 5	Copy designs test score	
	Age 10	British Ability Scales (BAS) total score	
	Age 16	Whether any GCSE pass	
Good conduct	Age 5	Sum of replies to 10 questions	(mothers' replies)
	Age 10	Sum of replies to 10 questions	(mothers' replies)
	Age 16	Sum of replies to 10 questions	(mothers' replies)
Emotional health	Age 5	Sum of replies to 28 questions	(mothers' replies)
	Age 10	Sum of replies to 24 questions	(mothers' replies)
	Age 16	2/3 X replies to 22 questions	(subjects' replies)
		+ 1/3 X replies to 8 questions	(mothers' replies)

[26] See the Online Appendix for the actual questions.

[27] We use this approach in order to derive a single variable which can be used as a left-hand or right-hand variable in a linear model.

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ONLINE ANNEX

Appendix B

OLS Tables

Multiple Imputation tables

Text Tables (as in text)

Appendix tables (as above)

Questionnaires

OLS TABLES

Table B.1
Predictors of adult outcomes, using information up to age 5

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Intellectual performance	0.089	0.170	0.028	0.074	0.095	0.086	0.097	0.045
(5)	(0.012)	(0.010)	(0.015)	(0.012)	(0.016)	(0.015)	(0.013)	(0.016)
Good conduct	0.014	0.060	0.008	0.169	0.089	0.054	0.078	0.085
(5)	(0.014)	(0.012)	(0.028)	(0.018)	(0.020)	(0.022)	(0.018)	(0.019)
Emotional health	0.028	0.010	0.017	-0.056	-0.023	0.158	0.328	0.174
(5)	(0.013)	(0.011)	(0.055)	(0.014)	(0.020)	(0.020)	(0.021)	(0.021)
Family Economic	0.104	0.286	0.020	0.087	0.038	0.056	0.075	0.055
	(0.017)	(0.018)	(0.031)	(0.088)	(0.063)	(0.019)	(0.029)	(0.018)
Family Psychosocial	0.014	0.052	-0.027	0.038	0.030	0.043	0.066	0.030
	(0.016)	(0.012)	(0.015)	(0.015)	(0.028)	(0.016)	(0.018)	(0.016)
Female	0.181	0.041	0.041	0.409	-0.061	-0.090	-0.306	0.082
	(0.021)	(0.018)	(0.020)	(0.018)	(0.025)	(0.023)	(0.021)	(0.022)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.029	0.176	0.008	0.043	0.016	0.027	0.061	0.022

Robust standard errors in parentheses
Note: See Note to Table 1.

Table B.2
Predictors of adult outcomes, using information up to age 10

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Intellectual performance	0.136	0.293	0.038	0.059	0.074	0.058	0.081	0.050
(5 10)	(0.013)	(0.011)	(0.015)	(0.011)	(0.015)	(0.014)	(0.013)	(0.014)
Good conduct	0.019	0.100	0.023	0.146	0.071	0.028	0.062	0.059
(5 10)	(0.016)	(0.013)	(0.050)	(0.016)	(0.018)	(0.016)	(0.016)	(0.017)
Emotional health	0.031	-0.036	0.035	-0.059	-0.023	0.059	0.087	0.053
(5 10)	(0.013)	(0.033)	(0.019)	(0.012)	(0.016)	(0.015)	(0.015)	(0.014)
Family Economic	0.091	0.230	0.070	0.103	0.049	0.074	0.098	0.063
	(0.016)	(0.017)	(0.031)	(0.081)	(0.057)	(0.023)	(0.036)	(0.020)
Family Psychosocial	0.012	0.040	-0.010	0.048	0.034	0.057	0.082	0.039
	(0.033)	(0.014)	(0.017)	(0.015)	(0.023)	(0.016)	(0.017)	(0.016)
Female	0.182	0.040	0.075	0.436	-0.044	-0.095	-0.336	0.074
	(0.021)	(0.018)	(0.021)	(0.019)	(0.024)	(0.023)	(0.022)	(0.022)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.035	0.247	0.009	0.051	0.019	0.029	0.071	0.027

Robust standard errors in parentheses
Note: See Note to Table 1.

Table B.3
Predictors of outcomes at age 5, using information on family only

	(1) Intellectual performance	(2) Intellectual performance	(3) Good conduct	(4) Good conduct	(5) Emotional health	(6) Emotional health
Social class of father	0.109		0.073		0.020	
when child is aged 10	(0.011)		(0.011)		(0.011)	
Log of family weekly	0.093		0.002		-0.006	
income when child is 10	(0.012)		(0.011)		(0.011)	
Total number of siblings	-0.125		-0.018		0.049	
at 10	(0.010)		(0.010)		(0.010)	
Average employment rate	0.018		0.045		-0.003	
of father at birth, 5 and 10	(0.011)		(0.012)		(0.011)	
Age when mother left full	0.059		0.044		-0.035	
time education	(0.014)		(0.012)		(0.012)	
Age when father left full	0.065		0.010		0.003	
time education	(0.010)		(0.012)		(0.012)	
Mothers average mental	0.022		0.295		0.341	
health at 5 and 10	(0.009)		(0.010)		(0.011)	
Post-marital conception	0.022		0.037		0.016	
	(0.009)		(0.008)		(0.009)	
Both natural parents live	0.029		0.031		-0.008	
in household at 10	(0.013)		(0.013)		(0.013)	
Female	-0.016	-0.016	0.282	0.282	0.022	0.022
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Family Economic		0.276		0.119		0.056
		(0.027)		(0.016)		(0.043)
Family Psychosocial		0.075		0.293		0.330
		(0.011)		(0.014)		(0.017)
Observations	12,640	12,640	12,630	12,630	12,738	12,738

Table B.4
Predictors of outcomes at age 10, using information up to age 5

	(1) Intellectual performance	(2) Intellectual performance	(3) Good conduct	(4) Good conduct	(5) Emotional health	(6) Emotional health
Copying designs test score	0.331		0.059		-0.018	
at 5	(0.009)		(0.008)		(0.009)	
Good conduct at 5	0.079		0.352		0.018	
	(0.010)		(0.011)		(0.010)	
Emotional health at 5	-0.000		0.020		0.307	
	(0.010)		(0.010)		(0.011)	
Social class of father	0.146		0.041		0.020	
when child is aged 10	(0.010)		(0.010)		(0.010)	
Log of family weekly	0.060		0.022		0.004	
income when child is 10	(0.011)		(0.010)		(0.010)	
Total number of siblings	-0.093		-0.021		0.044	
at 10	(0.009)		(0.009)		(0.009)	
Average employment rate	0.020		-0.004		-0.019	
of father at birth, 5 and 10	(0.010)		(0.010)		(0.010)	
Age when mother left full	0.109		-0.003		-0.009	
time education	(0.011)		(0.009)		(0.010)	
Age when father left full	0.068		0.013		-0.002	
time education	(0.011)		(0.010)		(0.011)	
Mothers average mental	0.027		0.227		0.260	
health at 5 & 10	(0.010)		(0.010)		(0.011)	
Post-marital conception	0.020		0.004		0.010	
	(0.008)		(0.008)		(0.008)	
Both natural parents live	0.023		0.028		0.010	
in household at 10	(0.012)		(0.012)		(0.012)	
Female	-0.093	-0.093	0.236	0.236	-0.076	-0.076
	(0.016)	(0.016)	(0.015)	(0.015)	(0.016)	(0.016)
Intellectual performance		0.331		0.059		-0.018
(5)		(0.009)		(0.008)		(0.009)
Good conduct		0.079		0.352		0.018
(5)		(0.010)		(0.011)		(0.010)
Emotional health		0.000		0.020		0.307
(5)		(0.010)		(0.010)		(0.011)
Family Economic		0.299		0.063		0.047
		(0.019)		(0.024)		(0.024)
Family Psychosocial		0.041		0.223		0.253
		(0.010)		(0.015)		(0.017)
Observations	11,550	11,550	12,540	12,540	12,640	12,640

Table B.5
Predictors of outcomes at age 16, using information up to age 10

	(1) Intellectual performance	(2) Intellectual performance	(3) Good conduct	(4) Good conduct	(5) Emotional health	(6) Emotional health
Copying designs test score	0.155		0.045		0.046	
at 5	(0.012)		(0.011)		(0.012)	
British Ability Scales	0.278		0.025		0.033	
total score at 10	(0.013)		(0.012)		(0.013)	
Good conduct at 5	0.044		0.187		0.062	
	(0.014)		(0.015)		(0.014)	
Good conduct at 10	0.096		0.365		0.072	
	(0.015)		(0.017)		(0.015)	
Emotional health at 5	-0.007		0.041		0.123	
	(0.013)		(0.013)		(0.014)	
Emotional health at 10	-0.023		0.013		0.243	
	(0.013)		(0.013)		(0.014)	
Social class of father	0.078		-0.008		-0.003	
when child is aged 10	(0.013)		(0.012)		(0.013)	
Log of family weekly	0.035		-0.006		-0.015	
income when child is 10	(0.013)		(0.013)		(0.014)	
Total number of siblings	-0.085		-0.042		-0.000	
at 10	(0.013)		(0.013)		(0.012)	
Average employment rate	0.029		0.012		0.002	
of father at birth, 5 and 10	(0.015)		(0.014)		(0.013)	
Age when mother left full	0.043		0.012		0.005	
time education	(0.011)		(0.010)		(0.012)	
Age when father left full	0.029		0.021		0.022	
time education	(0.011)		(0.011)		(0.013)	
Mothers average mental	0.005		-0.003		0.073	
health at 5 & 10	(0.014)		(0.014)		(0.014)	
Post-marital conception	0.026		0.004		0.006	
	(0.011)		(0.010)		(0.010)	
Both natural parents live	0.033		0.070		0.044	
in household at 10	(0.016)		(0.014)		(0.013)	
Female	0.089	0.089	0.044	0.044	-0.228	-0.228
	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)
Intellectual performance		0.368		0.060		0.066
(5 10)		(0.012)		(0.012)		(0.012)
Good conduct		0.123		0.481		0.115
(5 10)		(0.015)		(0.017)		(0.015)
Emotional health		-0.027		0.048		0.314
(5 10)		(0.013)		(0.014)		(0.014)
Family Economic		0.173		-0.049		0.021
		(0.035)		(0.128)		(0.056)
Family Psychosocial		0.041		0.065		0.085
		(0.015)		(0.020)		(0.015)
Observations	8,303	8,303	8,134	8,134	8,089	8,089

Table B.6
Predictors of adult outcomes, using information up to age 16 (more detail)

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Copying designs test score	0.058	0.067	0.028	0.032	0.033	0.029	0.031	0.040
at 5	(0.013)	(0.010)	(0.012)	(0.011)	(0.015)	(0.013)	(0.012)	(0.012)
British Ability Scales	0.053	0.198	0.008	0.007	0.030	-0.002	0.024	-0.002
total score at 10	(0.013)	(0.011)	(0.014)	(0.011)	(0.016)	(0.015)	(0.014)	(0.014)
Has at least one GCSE	0.071	0.318	0.017	0.055	0.062	0.075	0.071	0.016
graded A-C	(0.013)	(0.011)	(0.014)	(0.012)	(0.017)	(0.013)	(0.012)	(0.014)
Good conduct at 5	-0.003	-0.000	0.020	0.064	0.047	0.006	0.004	-0.002
	(0.015)	(0.011)	(0.016)	(0.015)	(0.017)	(0.016)	(0.015)	(0.014)
Good conduct at 10	0.004	0.055	-0.027	0.064	0.009	-0.010	0.023	0.036
	(0.015)	(0.012)	(0.017)	(0.016)	(0.019)	(0.017)	(0.016)	(0.016)
Good conduct at 16	0.031	0.039	0.041	0.093	0.056	0.058	0.066	0.065
	(0.015)	(0.013)	(0.020)	(0.020)	(0.021)	(0.018)	(0.018)	(0.018)
Emotional health at 5	0.024	0.024	-0.008	-0.041	-0.020	0.017	0.032	0.019
	(0.013)	(0.011)	(0.012)	(0.011)	(0.015)	(0.014)	(0.014)	(0.014)
Emotional health at 10	0.009	-0.030	0.038	-0.028	-0.004	0.039	0.042	0.029
	(0.014)	(0.011)	(0.015)	(0.011)	(0.015)	(0.014)	(0.014)	(0.015)
Emotional health at 16	0.057	0.025	-0.018	0.003	-0.005	0.140	0.309	0.161
	(0.019)	(0.015)	(0.013)	(0.011)	(0.020)	(0.021)	(0.020)	(0.021)
Social class of father	0.018	0.098	0.000	0.018	0.015	0.027	0.001	0.024
when child is aged 10	(0.013)	(0.011)	(0.013)	(0.012)	(0.015)	(0.014)	(0.013)	(0.014)
Log of family weekly	0.054	0.038	0.043	0.004	0.014	0.022	0.035	0.025
income when child is 10	(0.014)	(0.011)	(0.014)	(0.014)	(0.016)	(0.014)	(0.014)	(0.014)
Total number of siblings	0.011	0.000	-0.018	-0.058	-0.016	-0.003	-0.033	-0.001
at 10	(0.012)	(0.011)	(0.014)	(0.014)	(0.015)	(0.013)	(0.014)	(0.013)
Average employment rate	0.021	0.016	0.036	0.048	-0.001	0.017	0.026	0.022
of father at birth, 5 and 10	(0.016)	(0.013)	(0.019)	(0.018)	(0.017)	(0.018)	(0.015)	(0.016)
Age when mother left full	0.035	0.063	-0.016	-0.003	0.027	0.027	0.027	0.013
time education	(0.014)	(0.011)	(0.010)	(0.008)	(0.015)	(0.014)	(0.013)	(0.013)
Age when father left full	0.002	0.067	0.018	0.019	-0.021	-0.005	0.014	0.002
time education	(0.012)	(0.011)	(0.010)	(0.009)	(0.017)	(0.014)	(0.012)	(0.013)
Mothers average mental	-0.007	0.000	-0.009	-0.002	-0.012	0.022	0.064	0.024
health at 5 and 10	(0.014)	(0.012)	(0.015)	(0.013)	(0.017)	(0.015)	(0.015)	(0.015)
Post-marital conception	-0.002	0.011	-0.005	0.028	0.020	0.008	0.010	0.017
	(0.010)	(0.008)	(0.011)	(0.011)	(0.013)	(0.011)	(0.011)	(0.011)
Both natural parents live	0.006	0.021	-0.004	0.027	0.021	0.037	0.015	0.005
in household at 10	(0.016)	(0.012)	(0.016)	(0.015)	(0.019)	(0.016)	(0.015)	(0.017)
Female	0.175	-0.014	0.066	0.409	-0.061	-0.090	-0.306	0.082
	(0.022)	(0.018)	(0.022)	(0.018)	(0.025)	(0.023)	(0.021)	(0.022)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.050	0.376	0.010	0.070	0.029	0.067	0.207	0.071

Robust standard errors in parentheses
Note: See Note to Table 1.

Table B.7

Predictors of adult outcomes, using information on family only (more detail)

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Social class of father	0.043	0.171	0.008	0.042	0.040	0.047	0.028	0.040
when child is aged 10	(0.013)	(0.012)	(0.014)	(0.012)	(0.015)	(0.014)	(0.013)	(0.013)
Log of family weekly	0.066	0.068	0.046	0.013	0.020	0.026	0.040	0.029
income when child is 10	(0.014)	(0.012)	(0.014)	(0.014)	(0.016)	(0.014)	(0.014)	(0.014)
Total number of siblings	-0.008	-0.052	-0.024	-0.079	-0.031	-0.018	-0.055	-0.012
at 10	(0.012)	(0.012)	(0.015)	(0.014)	(0.015)	(0.013)	(0.014)	(0.013)
Average employment rate	0.027	0.030	0.039	0.058	0.005	0.024	0.035	0.026
of father at birth, 5 and 10	(0.016)	(0.013)	(0.019)	(0.019)	(0.017)	(0.018)	(0.016)	(0.016)
Age when mother left full	0.046	0.103	-0.012	0.011	0.039	0.036	0.040	0.017
time education	(0.014)	(0.013)	(0.010)	(0.008)	(0.015)	(0.014)	(0.013)	(0.013)
Age when father left full	0.013	0.093	0.022	0.027	-0.014	0.003	0.026	0.009
time education	(0.012)	(0.012)	(0.010)	(0.009)	(0.015)	(0.014)	(0.012)	(0.013)
Mothers average mental	0.026	0.055	0.008	0.035	0.025	0.067	0.141	0.077
health at 5 and 10	(0.013)	(0.011)	(0.014)	(0.011)	(0.013)	(0.014)	(0.014)	(0.013)
Post-marital conception	0.004	0.025	-0.003	0.034	0.025	0.012	0.017	0.021
	(0.010)	(0.009)	(0.011)	(0.011)	(0.013)	(0.011)	(0.011)	(0.011)
Both natural parents live	0.019	0.049	-0.002	0.046	0.031	0.053	0.039	0.020
in household at 10	(0.016)	(0.013)	(0.016)	(0.016)	(0.019)	(0.016)	(0.016)	(0.017)
Female	0.183	0.054	0.072	0.477	-0.028	-0.092	-0.326	0.086
	(0.021)	(0.018)	(0.021)	(0.019)	(0.024)	(0.022)	(0.021)	(0.021)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.021	0.176	0.007	0.028	0.009	0.022	0.051	0.018

Robust standard errors in parentheses

Note: See Note to Table 1.

Table B.8
Correlations of all variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		Obs.	Mean	S.D.	Min	Max
1	1	.43	.30	.20	.18	.17	.06	.03	.10	.11	.24	.05	.10	.09	.08	.12	.08	.22	.20	-.17	.11	.16	.17	.14	.03	.07	.00	1	13028	0.00	1.00	-2.39	1.65
2	.43	1	.41	.19	.22	.17	.07	.05	.10	.13	.36	.04	.09	.09	.08	.14	.07	.32	.24	-.20	.14	.25	.24	.18	.04	.07	-.03	2	11563	0.00	1.00	-4.91	3.31
3	.30	.41	1	.18	.21	.22	.06	.06	.07	.14	.44	.06	.16	.10	.10	.14	.07	.24	.19	-.15	.11	.17	.17	.15	.04	.08	.05	3	9003	0.00	1.00	-1.59	0.63
4	.20	.19	.18	1	.48	.38	.38	.21	.14	.08	.15	.04	.16	.07	.07	.10	.08	.16	.12	-.07	.11	.11	.10	.33	.06	.07	.14	4	13020	0.00	1.00	-5.02	1.34
5	.18	.22	.21	.48	1	.48	.24	.45	.15	.08	.17	.03	.16	.06	.07	.12	.11	.16	.13	-.09	.10	.09	.09	.38	.04	.09	.17	5	13492	0.00	1.00	-5.41	1.62
6	.17	.17	.22	.38	.48	1	.19	.22	.32	.09	.16	.06	.19	.09	.12	.18	.13	.12	.11	-.08	.08	.08	.08	.23	.03	.12	.09	6	8772	0.00	1.00	-6.63	0.82
7	.06	.07	.06	.38	.24	.19	1	.40	.19	.05	.06	.01	.01	.01	.06	.11	.06	.07	.06	.01	.04	.01	.03	.33	.03	.02	.01	7	13131	0.00	1.00	-5.07	1.51
8	.03	.05	.06	.21	.45	.22	.40	1	.25	.03	.05	.03	.01	.01	.08	.14	.08	.07	.07	.01	.02	.02	.03	.36	.03	.04	-.03	8	13599	0.00	1.00	-5.45	1.58
9	.10	.10	.07	.14	.15	.32	.19	.25	1	.07	.09	.00	.01	.04	.19	.42	.21	.07	.08	-.06	.03	.06	.06	.20	.00	.07	.07	9	4213	0.00	1.00	-5.39	1.82
10	.11	.13	.14	.08	.08	.09	.05	.03	.07	1	.14	.16	.08	.11	.10	.06	.17	.10	.10	-.03	.05	.08	.07	.06	.01	.03	.09	10	9623	0.00	1.00	-5.36	2.32
11	.24	.36	.44	.15	.17	.16	.06	.05	.09	.14	1	.01	.13	.08	.11	.12	.08	.28	.20	-.10	.09	.22	.23	.13	.05	.07	.03	11	11501	0.00	1.00	-1.45	1.78
12	.05	.04	.06	.04	.03	.06	.01	.03	.00	.16	.01	1	.11	.07	.00	.01	.13	.04	.06	-.03	.05	.01	.03	.02	.00	.03	.04	12	9665	0.00	1.00	-7.01	0.14
13	.10	.09	.16	.16	.16	.19	.01	.01	.01	.08	.13	.11	1	.07	.07	.08	.11	.09	.08	-.09	.09	.05	.06	.07	.04	.07	.24	13	11840	0.00	1.00	-12.92	0.31
14	.09	.09	.10	.07	.06	.09	.01	.01	.04	.11	.08	.07	.07	1	.06	.08	.16	.06	.06	-.04	.02	.05	.03	.03	.03	.05	-.01	14	7437	0.00	1.00	-4.41	0.81
15	.08	.08	.12	.07	.07	.12	.06	.08	.19	.10	.11	.00	.07	.06	1	.38	.19	.09	.07	-.04	.05	.06	.05	.09	.02	.05	-.04	15	8957	0.00	1.00	-3.47	1.16
16	.12	.14	.14	.10	.12	.18	.11	.14	.42	.06	.12	.01	.08	.08	.38	1	.26	.11	.11	-.08	.08	.10	.09	.17	.03	.06	-.16	16	8948	0.00	1.00	-5.91	1.14
17	.08	.07	.07	.08	.11	.13	.06	.08	.21	.17	.08	.13	.11	.16	.19	.26	1	.08	.08	-.03	.05	.05	.05	.10	.03	.05	.04	17	9594	0.00	1.00	-4.12	1.44
18	.22	.32	.24	.16	.16	.12	.07	.07	.07	.10	.28	.04	.09	.06	.09	.11	.08	1	.44	-.17	.20	.31	.40	.20	.09	.04	.00	18	12233	0.00	1.00	-2.03	1.94
19	.20	.24	.19	.12	.13	.11	.06	.07	.08	.10	.20	.06	.08	.06	.07	.11	.08	.44	1	-.17	.29	.25	.29	.21	.07	.26	.00	19	12541	0.00	1.00	-2.55	2.13
20	-.17	-.20	-.15	-.07	-.09	-.08	.01	.01	-.06	-.03	-.10	-.03	-.09	-.04	-.04	-.08	-.03	-.17	-.17	1	-.21	-.16	-.13	-.16	.13	-.02	.00	20	16362	0.00	1.00	-1.29	11.16
21	.11	.14	.11	.11	.10	.08	.04	.02	.03	.05	.09	.05	.09	.02	.05	.08	.05	.20	.29	-.21	1	.08	.09	.15	.08	.08	.01	21	9760	0.00	1.00	-6.68	0.35
22	.16	.25	.17	.11	.09	.08	.01	.02	.06	.08	.22	.01	.05	.05	.06	.10	.05	.31	.25	-.16	.08	1	.55	.16	.02	.00	.01	22	17849	0.00	1.00	-7.24	16.00
23	.17	.24	.17	.10	.09	.08	.03	.03	.06	.07	.23	.03	.06	.03	.05	.09	.05	.40	.29	-.13	.09	.55	1	.13	.03	.01	.01	23	17355	0.00	1.00	-6.67	14.48
24	.14	.18	.15	.33	.38	.23	.33	.36	.20	.06	.13	.02	.07	.03	.09	.17	.10	.20	.21	-.16	.15	.16	.13	1	.04	.09	.01	24	11082	0.00	1.00	-5.59	1.68
25	.03	.04	.04	.06	.04	.03	.03	.03	.00	.01	.05	.00	.04	.03	.02	.03	.03	.09	.07	.13	.08	.02	.03	.04	1	.05	.00	25	16827	0.00	1.00	-3.33	0.30
26	.07	.07	.08	.07	.09	.12	.02	.04	.07	.03	.07	.03	.07	.05	.05	.06	.05	.04	.26	-.02	.08	.00	.01	.09	.05	1	.00	26	9079	0.00	1.00	-2.22	0.45
27	.00	-.03	.05	.14	.17	.09	.01	-.03	-.20	.09	.03	.04	.24	-.01	-.04	-.16	.04	.00	.00	.00	.01	.01	.01	.01	.00	.00	1	27	17185	0.48	0.50	0.00	1.00

1	=	Copying designs test score at 5	10	=	Log Income	19	=	Log of family weekly income when child is aged 10
2	=	British Ability Scales (BAS) total sc	11	=	Educational Achievement	20	=	Total number of siblings at 10
3	=	Has at least one GSCE graded A-C	12	=	Employed	21	=	Average employment rate of Father when child is at birth, 5 and 10
4	=	Good Conduct at 5	13	=	Good conduct	22	=	Age when mother left full-time education
5	=	Good Conduct at 10	14	=	Has a partner	23	=	Age when father left full-time education
6	=	Good Conduct at 16	15	=	Self-percieved Health	24	=	Mothers average mental health when child is aged 5 & 10
7	=	Emotional health at 5	16	=	Emotional health (26)	25	=	Post-marital conception
8	=	Emotional health at 10	17	=	Life satisfaction at 34	26	=	Both natural parents live in household at 10
9	=	Emotional health at 16	18	=	Social class of father when cl	27	=	Female

MULTIPLE IMPUTATION TABLES

For the Multiple Imputation method we used Stata's ICE command to create 5 imputed data sets. We then took the average of the coefficients from these 5 data sets, with standard errors computed by Rubin's rule (See Rubin, D.B (1987), *Multiple Imputation for Nonresponse in Surveys*. New York: John Wiley & Sons, Inc). To create each data set we went through 10 cycles. For a description of the method see White, I.R, Royston, P and Wood A.M (2011), *Multiple Imputation using chained equations: Issues and guidance for practice.* Statistics in Medicine, 30: 377-399.

Table 1
Predictors of life-satisfaction at 34

	(1) Using adult variables only	(2) Using childhood variables only	(3) Using both
Log income	0.051		0.045
	(0.013)		(0.012)
Educational achievement	0.027		0.018
	(0.010)		(0.013)
Employed	0.091		0.089
	(0.016)		(0.018)
Good conduct	0.067		0.063
	(0.011)		(0.011)
Has a partner	0.228		0.226
	(0.019)		(0.019)
Self-perceived health (26)	0.070		0.064
	(0.010)		(0.009)
Emotional health (26)	0.213		0.166
	(0.019)		(0.021)
Intellectual performance (5 10 16)		0.031	-0.026
		(0.016)	(0.018)
Good conduct (5 10 16)		0.059	0.029
		(0.019)	(0.019)
Emotional health (5 10 16)		0.193	0.106
		(0.021)	(0.021)
Family Economic		0.061	0.028
		(0.015)	(0.016)
Family Psychosocial		0.044	0.030
		(0.010)	(0.009)
Female	0.118	0.173	0.139
	(0.022)	(0.019)	(0.024)
Observations	18,620	18,620	18.620

Robust standard errors in parentheses

Table 2
Predictors of adult outcomes, using information up to 16

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Intellectual performance	0.146	0.342	0.033	0.073	0.064	0.082	0.087	0.031
(5 10 16)	(0.015)	(0.010)	(0.020)	(0.019)	(0.016)	(0.013)	(0.012)	(0.016)
Good conduct	0.023	0.058	0.089	0.176	0.041	0.041	0.037	0.059
(5 10 16)	(0.020)	(0.014)	(0.044)	(0.024)	(0.017)	(0.034)	(0.023)	(0.019)
Emotional health	0.070	0.031	0.040	-0.058	0.061	0.173	0.372	0.193
(5 10 16)	(0.018)	(0.029)	(0.255)	(0.017)	(0.015)	(0.021)	(0.022)	(0.021)
Family Economic	0.069	0.183	0.082	0.076	0.042	0.052	0.069	0.061
	(0.013)	(0.014)	(0.047)	(0.064)	(0.047)	(0.015)	(0.022)	(0.015)
Family Psychosocial	-0.008	0.023	-0.032	0.053	0.045	0.042	0.049	0.044
	(0.013)	(0.014)	(0.179)	(0.021)	(0.100)	(0.015)	(0.012)	(0.010)
Female	0.213	0.035	0.088	0.414	0.097	-0.033	-0.177	0.173
	(0.034)	(0.020)	(0.020)	(0.024)	(0.018)	(0.023)	(0.017)	(0.019)
Observations	18,620	18,620	18,620	18,620	18,620	18,620	18,620	18,820

Robust standard errors in parentheses

Table 3
Indirect effect of childhood variables upon life-satisfaction at 34

	(1) Simulated	(2) From Table 1 [Col (2) minus Col (3)]
Intellectual performance (5 10 16)	0.063	0.057
Good conduct (5 10 16)	0.043	0.030
Emotional health (5 10 16)	0.109	0.087
Family Economic	0.049	0.033
Family Psychosocial	0.024	0.014

Table 4

Predictors of adult outcomes, using family only

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Family Economic	0.125	0.314	0.098	0.118	0.056	0.082	0.120	0.082
	(0.019)	(0.020)	(0.046)	(0.053)	(0.025)	(0.018)	(0.033)	(0.020)
Family Psychosocial	0.030	0.077	0.034	0.081	0.051	0.093	0.144	0.099
	(0.011)	(0.012)	(0.050)	(0.019)	(0.021)	(0.014)	(0.012)	(0.010)
Female	0.196	0.065	0.098	0.470	0.082	-0.090	-0.308	0.177
	(0.032)	(0.016)	(0.028)	(0.019)	(0.018)	(0.025)	(0.021)	(0.017)
Observations	18,620	18,620	18,620	18,620	18,620	18,620	18,620	18,620

Robust standard errors in parentheses

Table B.1
Predictors of adult outcomes, using information up to 5

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Intellectual performance	0.079	0.159	0.025	0.044	0.049	0.056	0.068	0.043
(5)	(0.009)	(0.009)	(0.019)	(0.009)	(0.014)	(0.011)	(0.009)	(0.012)
Good conduct	0.033	0.053	0.026	0.095	0.032	0.020	0.042	0.039
(5)	(0.014)	(0.009)	(0.029)	(0.018)	(0.012)	(0.013)	(0.016)	(0.015)
Emotional health	0.015	0.014	-0.012	-0.038	0.016	0.033	0.057	0.026
(5)	(0.012)	(0.010)	(0.010)	(0.012)	(0.019)	(0.010)	(0.013)	(0.012)
Family Economic	0.103	0.269	0.090	0.098	0.046	0.067	0.102	0.069
	(0.018)	(0.017)	(0.047)	(0.070)	(0.031)	(0.017)	(0.034)	(0.018)
Family Psychosocial	0.012	0.048	0.033	0.068	0.046	0.074	0.107	0.077
	(0.011)	(0.013)	(0.078)	(0.020)	(0.034)	(0.016)	(0.013)	(0.009)
Female	0.188	0.052	0.091	0.445	0.074	-0.095	-0.321	0.106
	(0.031)	(0.018)	(0.031)	(0.017)	(0.019)	(0.023)	(0.021)	(0.017)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adj R-square	0.029	0.176	0.008	0.043	0.016	0.027	0.061	0.022

Robust standard errors in parentheses

Table B.2
Predictors of adult outcomes, using information up to 10

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Intellectual performance	0.124	0.256	0.031	0.042	0.069	0.069	0.095	0.044
(5 10)	(0.012)	(0.010)	(0.004)	(0.010)	(0.015)	(0.012)	(0.010)	(0.015)
Good conduct	0.028	0.079	0.024	0.129	0.031	0.022	0.056	0.062
(5 10)	(0.017)	(0.013)	(0.006)	(0.017)	(0.013)	(0.011)	(0.020)	(0.015)
Emotional health	0.016	-0.026	0.038	-0.053	0.033	0.056	0.080	0.040
(5 10)	(0.014)	(0.040)	(0.011)	(0.011)	(0.015)	(0.011)	(0.011)	(0.012)
Family Economic	0.079	0.210	0.088	0.091	0.041	0.058	0.086	0.065
	(0.016)	(0.016)	(0.009)	(0.072)	(0.048)	(0.017)	(0.036)	(0.018)
Family Psychosocial	0.009	0.035	0.037	0.064	0.047	0.060	0.081	0.061
	(0.022)	(0.013)	(0.181)	(0.021)	(0.061)	(0.014)	(0.012)	(0.009)
Female	0.195	0.052	0.096	0.425	0.078	-0.092	-0.321	0.098
	(0.034)	(0.018)	(0.007)	(0.017)	(0.019)	(0.024)	(0.020)	(0.017)
Observations	18,620	18,620	18,620	18,620	18,620	18,620	18,620	18,620

Robust standard errors in parentheses

Table B.3

Predictors of outcomes at age 5, using information on family only

	(1) Intellectual performance	(2) Intellectual performance	(3) Good conduct	(4) Good conduct	(5) Emotional health	(6) Emotional health
Social class of father	0.111		0.081		0.014	
when child is aged 10	(0.011)		(0.009)		(0.017)	
Log of family weekly	0.087		0.008		0.001	
income when child is 10	(0.010)		(0.013)		(0.011)	
Total number of siblings	-0.113		0.011		0.063	
at 10	(0.010)		(0.010)		(0.013)	
Average employment rate	0.009		0.041		-0.008	
of father at birth, 5 and 10	(0.010)		(0.012)		(0.012)	
Age when mother left full	0.059		0.022		-0.047	
time education	(0.012)		(0.010)		(0.009)	
Age when father left full	0.046		0.000		0.003	
time education	(0.010)		(0.013)		(0.013)	
Mothers average mental	0.067		0.298		0.346	
health at 5 & 10	(0.009)		(0.011)		(0.009)	
Post-marital conception	0.020		0.032		0.012	
	(0.009)		(0.011)		(0.011)	
Both natural parents live	0.036		0.036		-0.008	
in household at 10	(0.015)		(0.011)		(0.012)	
Female	-0.020	-0.020	0.284	0.284	0.029	0.029
	(0.022)	(0.022)	(0.015)	(0.015)	(0.014)	(0.014)
Family Economic		0.273		0.108		0.081
		(0.032)		(0.012)		(0.061)
Family Psychosocial		0.082		0.306		0.345
		(0.012)		(0.018)		(0.015)
Observations	18,620	18,620	18,620	18,620	18,620	18,620

Robust standard errors in parentheses

Table B.4
Predictors of outcomes at age 10, using information up to age 5

	(1) Intellectual performance	(2) Intellectual performance	(3) Good conduct	(4) Good conduct	(5) Emotional health	(6) Emotional health
Copying designs test score	0.340		0.066		-0.019	
at 5	(0.009)		(0.009)		(0.012)	
Good conduct at 5	0.075		0.350		0.026	
	(0.009)		(0.010)		(0.009)	
Emotional health at 5	0.006		0.018		0.304	
	(0.009)		(0.009)		(0.010)	
Social class of father	0.142		0.024		0.011	
when child is aged 10	(0.014)		(0.009)		(0.011)	
Log of family weekly	0.042		0.009		0.004	
income when child is 10	(0.008)		(0.009)		(0.009)	
Total number of siblings	-0.078		-0.010		0.053	
at 10	(0.011)		(0.008)		(0.008)	
Average employment rate	0.023		-0.003		-0.021	
of father at birth, 5 and 10	(0.010)		(0.009)		(0.007)	
Age when mother left full	0.096		-0.011		-0.019	
time education	(0.011)		(0.008)		(0.010)	
Age when father left full	0.055		0.006		-0.002	
time education	(0.010)		(0.008)		(0.012)	
Mothers average mental	0.027		0.237		0.261	
health at 5 & 10	(0.009)		(0.009)		(0.011)	
Post-marital conception	0.014		0.001		0.008	
	(0.007)		(0.007)		(0.009)	
Both natural parents live	0.021		0.025		0.014	
in household at 10	(0.009)		(0.009)		(0.012)	
Female	-0.087	-0.087	0.226	0.226	-0.073	-0.073
	(0.018)	(0.018)	(0.015)	(0.015)	(0.019)	(0.019)
Intellectual Performance		0.340		0.066		-0.019
(5)		(0.009)		(0.009)		(0.012)
Good conduct		0.075		0.350		0.026
(5)		(0.009)		(0.010)		(0.009)
Emotional health		0.006		0.018		0.304
(5)		(0.009)		(0.009)		(0.010)
Family Economic		0.283		0.031		0.063
		(0.020)		(0.032)		(0.039)
Family Psychosocial		0.039		0.240		0.262
		(0.008)		(0.012)		(0.021)
Observations	18,620	18,620	18,620	18,620	18,620	18,620

Robust standard errors in parentheses

Table B.5
Predictors of outcomes at age 16, using information up to age 10

	(1) Intellectual performance	(2) Intellectual performance	(3) Good conduct	(4) Good conduct	(5) Emotional health	(6) Emotional health
Copying designs test score	0.131		0.041		0.055	
at 5	(0.010)		(0.010)		(0.023)	
British Ability Scales	0.291		0.026		0.020	
total score at 10	(0.011)		(0.011)		(0.015)	
Good conduct at 5	0.028		0.188		0.048	
	(0.018)		(0.017)		(0.015)	
Good conduct at 10	0.084		0.357		0.048	
	(0.010)		(0.015)		(0.025)	
Emotional health at 5	-0.003		0.043		0.077	
	(0.010)		(0.014)		(0.010)	
Emotional health at 10	-0.021		0.011		0.166	
	(0.009)		(0.012)		(0.016)	
Social class of father	0.070		-0.013		-0.033	
when child is aged 10	(0.014)		(0.012)		(0.009)	
Log of family weekly	0.031		0.004		0.008	
income when child is 10	(0.010)		(0.011)		(0.018)	
Total number of siblings	-0.064		-0.043		-0.043	
at 10	(0.015)		(0.009)		(0.026)	
Average employment rate	0.021		0.023		0.006	
of father at birth, 5 and 10	(0.020)		(0.014)		(0.029)	
Age when mother left full	0.020		0.003		0.009	
time education	(0.015)		(0.012)		(0.014)	
Age when father left full	0.009		0.011		0.015	
time education	(0.008)		(0.015)		(0.018)	
Mothers average mental	-0.000		0.001		0.069	
health at 5 & 10	(0.009)		(0.013)		(0.016)	
Post-marital conception	0.025		0.001		0.002	
	(0.016)		(0.009)		(0.019)	
Both natural parents live	0.036		0.064		0.041	
in household at 10	(0.016)		(0.012)		(0.016)	
Female	0.111	0.111	0.028	0.028	-0.402	-0.402
	(0.020)	(0.020)	(0.017)	(0.017)	(0.034)	(0.034)
Intellectual Performance		0.368		0.067		0.067
(5 10)		(0.011)		(0.009)		(0.022)
Good conduct		0.100		0.475		0.082
(5 10)		(0.014)		(0.013)		(0.027)
Emotional health		-0.023		0.049		0.209
(5 10)		(0.010)		(0.015)		(0.015)
Family Economic		0.138		-0.054		-0.052
		(0.054)		(0.073)		(0.034)

Family Psychosocial		0.045		0.064		0.084
		(0.018)		(0.023)		(0.020)
Observations	18,620	18,620	18,620	18,620	8,089	8,089

Robust standard errors in parentheses

Table B.6
Predictors of adult outcomes, using information up to 16 (more detail)

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Copying designs test score	0.031	0.050	0.015	0.017	0.027	0.023	0.015	0.022
at 5	(0.011)	(0.009)	(0.024)	(0.011)	(0.015)	(0.013)	(0.016)	(0.011)
British Ability Scales	0.071	0.141	0.007	-0.007	0.047	0.016	0.046	0.005
total score at 10	(0.012)	(0.010)	(0.016)	(0.019)	(0.021)	(0.013)	(0.014)	(0.015)
Has at least one GCSE	0.082	0.230	0.020	0.069	0.002	0.062	0.047	0.012
graded A-C	(0.017)	(0.009)	(0.018)	(0.027)	(0.019)	(0.013)	(0.016)	(0.015)
Good conduct at 5	0.014	0.001	0.008	0.037	0.014	-0.008	-0.005	0.003
	(0.013)	(0.011)	(0.029)	(0.022)	(0.015)	(0.016)	(0.015)	(0.017)
Good conduct at 10	-0.007	0.044	-0.043	0.029	0.003	-0.016	0.009	0.026
	(0.016)	(0.013)	(0.015)	(0.019)	(0.012)	(0.020)	(0.021)	(0.018)
Good conduct at 16	0.017	0.022	0.099	0.140	0.035	0.048	0.034	0.041
	(0.016)	(0.010)	(0.020)	(0.025)	(0.016)	(0.030)	(0.018)	(0.023)
Emotional health at 5	0.007	0.018	-0.027	-0.035	0.002	0.004	0.009	-0.001
	(0.012)	(0.011)	(0.013)	(0.014)	(0.020)	(0.011)	(0.012)	(0.014)
Emotional health at 10	-0.004	-0.026	0.042	-0.035	0.020	0.020	-0.005	-0.002
	(0.015)	(0.009)	(0.015)	(0.011)	(0.012)	(0.016)	(0.013)	(0.012)
Emotional health at 16	0.069	0.023	-0.010	0.002	0.052	0.165	0.372	0.193
	(0.009)	(0.010)	(0.039)	(0.021)	(0.010)	(0.020)	(0.023)	(0.031)
Social class of father	0.019	0.093	0.018	0.022	0.025	0.047	0.019	0.034
when child is aged 10	(0.013)	(0.009)	(0.015)	(0.015)	(0.013)	(0.011)	(0.010)	(0.009)
Log of family weekly	0.032	0.030	0.014	0.004	0.016	0.006	0.021	0.025
income when child is 10	(0.010)	(0.010)	(0.013)	(0.016)	(0.010)	(0.011)	(0.010)	(0.014)
Total number of siblings	0.011	0.014	-0.019	-0.038	0.008	0.010	-0.010	0.002
at 10	(0.011)	(0.010)	(0.012)	(0.014)	(0.009)	(0.011)	(0.017)	(0.017)
Average employment rate of father at birth, 5 and 10	0.028	0.000	0.060	0.044	0.013	0.005	0.027	0.025
	(0.012)	(0.007)	(0.033)	(0.023)	(0.012)	(0.016)	(0.014)	(0.016)
Age when mother left full	0.031	0.053	-0.011	-0.005	-.0.000	0.015	0.026	0.011
time education	(0.015)	(0.011)	(0.017)	(0.019)	(0.011)	(0.014)	(0.013)	(0.012)
Age when father left full	-0.005	0.074	0.017	0.010	-0.037	-0.010	0.008	-0.009
time education	(0.013)	(0.008)	(0.009)	(0.008)	(0.011)	(0.014)	(0.010)	(0.012)
Mothers average mental	-0.007	0.005	-0.022	0.000	-0.025	0.026	0.044	0.020
health at 5 & 10	(0.012)	(0.013)	(0.017)	(0.014)	(0.015)	(0.020)	(0.013)	(0.014)
Post-marital conception	-0.003	0.011	-0.008	0.026	-0.004	0.003	0.015	0.019
	(0.011)	(0.008)	(0.015)	(0.015)	(0.010)	(0.009)	(0.013)	(0.014)
Both natural parents live	0.002	0.018	0.025	0.044	0.040	0.031	0.012	0.032
in household at 10	(0.012)	(0.009)	(0.035)	(0.024)	(0.011)	(0.016)	(0.013)	(0.012)
Female	0.213	0.035	0.088	0.414	0.097	-0.033	-0.177	0.173
	(0.034)	(0.020)	(0.020)	(0.024)	(0.018)	(0.023)	(0.017)	(0.019)
Observations	18,620	18,620	18,620	18,620	18,820	18,620	18,620	18,620

Robust standard errors in parentheses

Table B.7

Predictors of adult outcomes, using family only (more detail)

	(1) Log income	(2) Educational achievement	(3) Employed	(4) Good conduct	(5) Has a partner	(6) Self-perceived health (26)	(7) Emotional health (26)	(8) Life-satisfaction
Social class of father	0.048	0.161	0.026	0.041	0.038	0.060	0.033	0.040
when child is aged 10	(0.016)	(0.010)	(0.015)	(0.012)	(0.014)	(0.012)	(0.010)	(0.009)
Log of family weekly	0.047	0.061	0.018	0.012	0.023	0.016	0.036	0.032
income when child is 10	(0.010)	(0.011)	(0.012)	(0.015)	(0.010)	(0.012)	(0.009)	(0.013)
Total number of siblings	-0.013	-0.038	-0.026	-0.059	-0.003	-0.007	-0.037	-0.011
at 10	(0.011)	(0.011)	(0.013)	(0.013)	(0.009)	(0.012)	(0.021)	(0.015)
Average employment rate of father at birth, 5 and 10	0.035	0.014	0.064	0.054	0.017	0.009	0.033	0.029
	(0.013)	(0.010)	(0.034)	(0.021)	(0.012)	(0.017)	(0.016)	(0.017)
Age when mother left full	0.047	0.087	-0.007	0.004	0.007	0.023	0.038	0.015
time education	(0.015)	(0.012)	(0.017)	(0.018)	(0.012)	(0.012)	(0.012)	(0.012)
Age when father left full	0.006	0.096	0.020	0.016	-0.031	-0.002	0.022	-0.003
time education	(0.012)	(0.010)	(0.009)	(0.008)	(0.011)	(0.013)	(0.012)	(0.012)
Mothers average mental	0.024	0.054	-0.007	0.031	0.009	0.075	0.133	0.077
health at 5 & 10	(0.013)	(0.013)	(0.013)	(0.011)	(0.013)	(0.017)	(0.013)	(0.013)
Post-marital conception	0.004	0.025	-0.006	0.031	-0.001	0.008	0.022	0.023
	(0.011)	(0.009)	(0.015)	(0.015)	(0.011)	(0.010)	(0.015)	(0.011)
Both natural parents live	0.015	0.042	0.034	0.063	0.049	0.047	0.038	0.048
in household at 10	(0.013)	(0.009)	(0.037)	(0.023)	(0.011)	(0.016)	(0.012)	(0.011)
Female	0.196	0.065	0.098	0.470	0.082	-0.090	-0.308	0.117
	(0.032)	(0.016)	(0.028)	(0.019)	(0.018)	(0.025)	(0.021)	(0.017)
Observations	18,620	18,620	18,620	18,620	18,620	18,620	18,620	18,620

Robust standard errors in parentheses

Table MIB.8

Correlations of all variables

Table A8: Correlation Table for men and women

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		Obs.	Mean	S.D.	Min	Max
1	1	.44	.32	.20	.18	.18	.07	.03	.12	.11	.25	.04	.09	.07	.10	.13	.09	.23	.21	-.17	.11	.18	.18	.15	.03	.09	-.01	1	18620	0.00	1.00	-2.37	1.65
2	.44	1	.42	.20	.23	.19	.07	.06	.10	.15	.35	.06	.09	.09	.10	.16	.07	.32	.25	-.20	.15	.27	.27	.18	.04	.08	-.03	2	18620	0.00	1.00	-4.85	3.55
3	.32	.42	1	.18	.22	.23	.07	.05	.08	.16	.38	.06	.13	.05	.05	.14	.09	.24	.20	-.18	.14	.18	.18	.15	.05	.10	.07	3	18620	-0.01	1.00	-1.44	0.70
4	.20	.20	.18	1	.47	.40	.37	.21	.12	.08	.15	.08	.16	.06	.06	.10	.10	.16	.13	-.06	.12	.10	.09	.33	.04	.08	.14	4	18620	-0.01	1.00	-4.98	1.34
5	.18	.23	.22	.47	1	.49	.24	.45	.17	.08	.17	.05	.16	.07	.08	.12	.13	.15	.14	-.09	.10	.09	.09	.38	.03	.10	.16	5	18620	0.00	1.00	-5.40	3.47
6	.18	.19	.23	.40	.49	1	.22	.24	.34	.10	.16	.12	.22	.09	.13	.20	.17	.12	.13	-.12	.13	.09	.08	.26	.02	.13	.10	6	18620	0.00	1.00	-6.46	3.45
7	.07	.07	.07	.37	.24	.22	1	.40	.18	.05	.07	.01	.02	.03	.06	.10	.07	.07	.05	.01	.03	.01	.02	.33	.02	.03	.02	7	18620	-0.01	1.00	-5.05	3.56
8	.03	.06	.05	.21	.45	.24	.40	1	.26	.03	.04	.04	.01	.05	.09	.13	.09	.06	.06	.02	.02	.02	.03	.36	.04	.06	-.03	8	18620	0.00	1.01	-5.43	4.08
9	.12	.10	.08	.12	.17	.34	.18	.26	1	.09	.08	.07	.01	.07	.20	.45	.24	.05	.07	-.08	.08	.06	.05	.21	.04	.07	.07	9	18620	0.01	1.01	-5.33	3.36
10	.11	.15	.16	.08	.08	.10	.05	.03	.09	1	.14	.20	.09	.34	.10	.08	.18	.10	.10	-.04	.07	.08	.08	.06	.01	.05	.08	10	18620	-0.01	1.00	-5.15	3.32
11	.25	.35	.38	.15	.17	.16	.07	.04	.08	.14	1	.03	.12	.03	.11	.12	.09	.28	.21	-.11	.11	.23	.25	.13	.04	.07	.04	11	18620	-0.01	1.00	-1.26	2.41
12	.04	.06	.06	.08	.05	.12	.01	.04	.07	.20	.03	1	.14	.12	.01	.05	.14	.07	.08	-.05	.10	.03	.05	.03	-.01	.06	.04	12	18620	-0.02	1.05	-5.61	0.18
13	.09	.09	.13	.16	.16	.22	.02	.01	.01	.09	.12	.14	1	.09	.07	.08	.14	.09	.08	-.09	.08	.05	.06	.07	.02	.06	.23	13	18620	0.00	1.00	-11.39	0.32
14	.07	.09	.05	.06	.07	.09	.03	.05	.07	.34	.03	.12	.09	1	.09	.10	.30	.05	.05	-.02	.04	.02	.00	.03	.01	.07	.04	14	18620	-0.04	1.02	-1.55	0.91
15	.10	.10	.12	.06	.08	.13	.06	.09	.20	.10	.11	.01	.07	.09	1	.39	.18	.09	.07	-.04	.06	.06	.06	.10	.02	.05	-.05	15	18620	-0.01	1.02	-3.32	1.18
16	.13	.16	.14	.10	.12	.20	.10	.13	.45	.08	.12	.05	.08	.10	.39	1	.27	.11	.11	-.08	.09	.09	.08	.17	.04	.08	-.16	16	18620	0.00	1.01	-5.68	1.15
17	.09	.07	.09	.10	.13	.17	.07	.09	.24	.18	.09	.14	.14	.30	.18	.27	1	.08	.09	-.03	.07	.05	.04	.11	.02	.07	.06	17	18620	0.00	1.00	-3.83	1.44
18	.23	.32	.24	.16	.15	.12	.07	.06	.05	.10	.28	.07	.09	.05	.09	.11	.08	1	.40	-.18	.21	.31	.40	.21	.09	.04	.00	18	18620	0.00	1.00	-2.00	1.95
19	.21	.25	.20	.13	.14	.13	.05	.06	.07	.10	.21	.08	.08	.05	.07	.11	.09	.40	1	-.18	.28	.26	.30	.20	.07	.22	.00	19	18620	0.01	1.00	-2.56	2.12
20	-.17	-.20	-.18	-.06	-.09	-.12	.01	.02	-.08	-.04	-.11	-.05	-.09	-.02	-.04	-.08	-.03	-.18	-.18	1	-.20	-.17	-.13	-.17	.13	-.01	.00	20	18620	0.00	1.00	-3.33	11.15
21	.11	.15	.14	.12	.10	.13	.03	.02	.08	.07	.11	.10	.08	.04	.06	.09	.07	.21	.28	-.20	1	.08	.09	.15	.08	.18	.01	21	18620	0.00	1.02	-5.71	0.38
22	.18	.27	.18	.10	.09	.09	.01	.02	.06	.08	.23	.03	.05	.02	.06	.09	.05	.31	.26	-.17	.08	1	.55	.16	.02	.02	.00	22	18620	0.00	1.00	-7.23	15.99
23	.18	.27	.18	.09	.09	.08	.02	.03	.05	.08	.25	.05	.06	.00	.06	.08	.04	.40	.30	-.13	.09	.55	1	.14	.03	.03	.01	23	18620	0.00	1.00	-6.64	14.42
24	.15	.18	.15	.33	.38	.26	.33	.36	.21	.06	.13	.03	.07	.03	.10	.17	.11	.21	.20	-.17	.15	.16	.14	1	.04	.10	.00	24	18620	-0.01	1.00	-5.56	4.04
25	.03	.04	.05	.04	.03	.02	.02	.04	.04	.01	.04	-.01	.02	.01	.02	.04	.02	.09	.07	.13	.08	.02	.03	.04	1	.05	.00	25	18620	0.00	1.00	-3.31	0.30
26	.09	.08	.10	.08	.10	.13	.03	.06	.07	.05	.07	.06	.06	.07	.05	.08	.07	.04	.22	-.01	.18	.02	.03	.10	.05	1	.00	26	18620	0.00	1.00	-2.16	0.46
27	-.01	-.03	.07	.14	.16	.10	.02	-.03	-.20	.08	.04	.04	.23	.04	-.05	-.16	.06	.00	.00	.00	.01	.00	.01	.00	.00	.00	1	27	18620	0.48	0.50	0.00	1.00

1	=	Copying designs test score at 5	10	=	Log Income	19	=	Log of family weekly income when child is aged 10
2	=	British Ability Scales (BAS) total sc	11	=	Highest education (34)	20	=	Total number of siblings at 10
3	=	Has at least one GSCE graded A-C	12	=	Employed	21	=	Average employment rate of Father when child is at birth, 5 and 10
4	=	Good Conduct at 5	13	=	Good conduct	22	=	Age when mother left full-time education
5	=	Good Conduct at 10	14	=	Has a parnter	23	=	Age when father left full-time education
6	=	Good Conduct at 16	15	=	Self-percieved Health	24	=	Mothers average mental health when child is aged 5 & 10
7	=	Emotional health at 5	16	=	Emotional health (26)	25	=	Post-marital conception
8	=	Emotional health at 10	17	=	Life satisfaction at 34	26	=	Both natural parents live in household at 10
9	=	Emotional health at 16	18	=	Social class of father when ch	27	=	Female

QUESTIONNAIRES

1. **Adult outcomes**
2. **Family variables**
3. **Intellectual performance**
4. **Good conduct**
5. **Emotional health**

1. Adult outcomes

Emotional health at 26

How You feel

These questions are concerned with how you are feeling generally. Please answer them by ticking either the **"Yes"** or **"No"** box for each one. It is important that you try to answer **All** the questions.

	Yes	No
Do you often have backache?	☐	☐
Do you feel tired most of the time?	☐	☐
Do you often feel miserable or depressed?	☐	☐
Do you often have bad headaches?	☐	☐
Do you often get worried about things?	☐	☐
Do you usually have great difficulty in falling or staying asleep?	☐	☐
Do you usually wake unnecessarily early in the morning?	☐	☐
Do you wear yourself out worrying about your health?	☐	☐
Do you often get into a violent rage?	☐	☐
Do people often annoy and irritate you?	☐	☐
Have you at times had twitching of the face, head or shoulders?	☐	☐
Do you often suddenly become scared for no good reason?	☐	☐
Are you scared to be alone when there are no friends near you?	☐	☐
Are you easily upset or irritated?	☐	☐
Are you frightened of going out alone or of meeting people?	☐	☐
Are you constantly keyed up and jittery?	☐	☐
Do you suffer from indigestion?	☐	☐
Do you suffer from an upset stomach?	☐	☐
Is your appetite poor?	☐	☐
Does every little thing get on your nerves and wear you out?	☐	☐
Does your heart often race like mad?	☐	☐
Do you often have bad pains in your eyes?	☐	☐
Are you troubled with rheumatism or fibrositis?	☐	☐
Have you ever had a nervous breakdown?	☐	☐

The total (reversed) score, where 1=yes and 0=no, is taken as our measure of emotional health.

Good conduct from age 16 to 34

How many times have you been formally cautioned at the police station? .....

How many times have you been found guilty by a criminal court? .....

The total (reversed) score from the above two questions are then taken as our measure of good conduct (free of crime).

Educational qualifications at 34

We are interested in knowing about **ANY** qualifications you may have gained **AT ANY TIME**, either at school or since.

Which, if any, of the following qualifications have you gained?
Please tick all that apply.

☐ No qualifications

☐ Part 1 City and Guilds qualification
☐ RSA certificate
☐ Level 1 NVQ qualification
☐ HGV licence
☐ Other vocational qualification
☐ More than 0 but less than 5 GCSEs at A-C

☐ Part 2 City and Guilds qualification
☐ Level 2 NVQ qualification
☐ More than 5 GCSEs at A-C

☐ Part 3 City and Guilds qualification
☐ National certificate diploma BTEC qualification
☐ Level 3 NVQ qualification
☐ More than 2 A-Levels

☐ Part 4 City and Guilds qualification
☐ Level 4 NVQ qualification
☐ HNC vocational qualification
☐ Diploma of higher education
☐ A degree (e.g. BA BSc)
☐ Other degree level qualification
☐ Other teaching qualification

☐ Higher degree (e.g. Phd, MSc)

The highest qualification is then assigned to each individual, which ranges from 0 to 5, where 0 = no qualifications; 1= the highest qualification is any qualification in the second group that begins with Part 1 City and Guilds qualification; 2= the highest qualification is any qualification in the third group that begins with Part 2 City and Guilds qualification; 3= the highest qualification is any qualification in the fourth group that begins with Part 3 City and Guilds qualification; 4= the highest qualification is any qualification in the fifth group that begins with Part 4 City and Guilds qualification; 5= the highest qualification is a higher degree (e.g. Phd, MSc). Note that there are many other qualifications that are included in the six above groupings. Due to space constraints, we have only described a sub-set of them.

Earnings at 34

	What is your total take-home pay in pounds? ..... What period does the above take-home cover? **Please tick.** One week ☐ A fortnight ☐ Four weeks ☐ A calendar month ☐ A year ☐ Some other period ☐ To obtain our measure of earnings, we convert all the reported take-home pay to the reported take-home pay per week. We then convert to 1986 prices by using the relevant GDP deflator. We then take the log of this adjusted figure.
Full time work at 34	Which of the following best describes what you are currently doing? **Please tick all that apply.** Full-time paid employee (30 or more hours a week) ☐ Part-time paid employee (under 30 hours a week) ☐ Full-time self-employed ☐ Part-time self-employed ☐ Unemployed and seeking work ☐ Full time education ☐ Temporarily sick/disabled (less than 6 months) ☐ Long term sick/disabled (6 months or longer) ☐ Looking after home/family ☐ On a training scheme ☐ Something else ☐ Our full-time work indicator is equal to 1 if cohort member indicates that they are a Full-time paid employee (30 or more hours a week) or Full-time self-employed. It is =0 if any of other options are indicated.
Having a family at 34	What is your current marital status? **Please tick one box only.** Married ☐ Cohabiting (living as a couple) ☐ Single (and never married) ☐ Separated ☐ Divorced ☐ Widowed ☐ Have you ever been pregnant or got anyone else pregnant? **Please tick one box only.** Yes ☐ No ☐ Has the outcome of any of these pregnancies resulted in a live birth (derived)? Yes ☐ No ☐ We define the cohort member as having children if the answer to the above two questions is yes. We are then able to create four dummy variables, which are: $mc =$ 1 if cohort member is married or cohabiting and has children and =0 if cohort member **is** married (or cohabiting) and **does not** have children or if the cohort member **is not** married (or cohabiting) and **has** children or if the cohort member **is not** married (or cohabiting) and **does not** have children. $mnc =$ 1 if cohort member is married or cohabiting and does not have children and =0 if cohort member **is** married (or cohabiting) and **has** children or if the cohort member **is not** married (or cohabiting) and **has** children or if the cohort member **is not** married (or cohabiting) and **does not** have children. $nmc =$ 1 if cohort member is not married or cohabiting, but has children and =0 if cohort member **is** married (or cohabiting) and **has** children or if the cohort member if cohort member **is** married (or cohabiting) and **does not** have children or if the cohort member **is not** married (or cohabiting) and **does not** have children. $nmc =$ 1 if the cohort member is not married (or cohabiting) and does not have children. and =0 if cohort member **is** married (or cohabiting) and **has** children or if the cohort member **is** married (or cohabiting) and **does not** have children or if the cohort member **is not** married or cohabiting, but **has** children. We then run the following regression: $s.ls = \alpha_1 mc + \alpha_2 mnc + \alpha_3 nmc + \alpha_4 s.ft + \alpha_5 s.ear + \alpha_6 s.hlth + \alpha_7 s.fem + \alpha_8 d.ft + \alpha_9 d.ear + \alpha_{10} d.hlth + \alpha_{11} d.fem + \epsilon$ The having a family variable, takes the value α_1 if the individual is married (or cohabiting) with children, it takes the value α_2 if the individual is married (or cohabiting) without children, and it takes the value α_3 if the individual is not married (or cohabiting) and has children. Otherwise zero.
Self-perceived Health at 26	How would you describe your general health? **Please tick one box only.** Excellent ☐ Good ☐ Fair ☐

	Poor ☐ The Self-perceived health at 26 variable takes is =0 if the health is described as Poor. If is =1 if the health is described as fair. It is =2 if health is described as good. It is =3 if health is described as excellent.
Life Satisfaction at 34	Here is a scale from 0 to 10. On it, "0" means that you are completely dissatisfied and "10" means that you are completely satisfied. **Please tick the box with the number above it which shows how dissatisfied or satisfied you are about the way your life has turned out so far.** Completely Dissatisfied … Completely Satisfied 0 1 2 3 4 5 6 7 8 9 10 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

2. Family variables

Social class of the father when the child is aged 10	What is the father's social class? (c.1980 – completed through an interview of the parents. This was usually the mother)? **Please tick one box only.** I (Professional) ☐ II (Semi-professional) ☐ III (Non-manual skilled) ☐ III (Manual skilled) ☐ IV (Semi-skilled) ☐ V (Unskilled) ☐ The social class of the father when the child is aged 10 takes the value 0 if the answer to the above question is V (Unskilled). It takes the value 1 if the answer to the above question is IV (Semi-skilled). It takes the value 2 if the answer to the above question is III (Manual skilled). It takes the value 3 if the answer to the above question is III (Non-manual skilled). It takes the value 4 if the answer to the above question is II (Semi-professional). It takes the value 5 if the answer to the above question is I (Professional).
Log of family weekly income when child is aged 10	What is the total gross family income in pounds (£) per week (c.1980 – completed through an interview of the parents. This was usually the mother)? **Please tick one box only.** Under £35 per week ☐ Between £35 and £49 per week ☐ Between £50 and £99 per week ☐ Between £100 and £149 per week ☐ Between £150 and £199 per week ☐ Between £200 and £249 per week ☐ £250 and more per week ☐ To calculate the family weekly income when child is aged 10, we take the mid-point of the relevant income band if in band 2 to 6. For band 1, we assign an income of £30. For band 7, we assign an income of £350. We then convert this calculated measure of family weekly income to 1986 prices by using the relevant GDP deflator. We then take the log of this adjusted figure.
Total number of siblings at 10.	Derived variable from answers to several questions in each survey wave on the outcomes of parental pregnancies.
Average employment rate of Father when child is at birth, 5 and 10	Employment status of the 'husband' at present (c.1970 – completed by the midwife, who interviewed the mother)? **Please tick one box only.** Employed ☐ Unemployed ☐ How many weeks has the father been off work in the past 12 months, through illness or unemployment or for other reasons (c.1975 – administered by health visitors who carried out the interviews in the children's own homes. Usually the interviewee was the mother (92.3%))? ..... What is the father's employment status (c.1980 – completed through an interview of the parents. This was usually the mother)? **Please tick one box only.** Regular paid job ☐ Works occasionally ☐ Seeking work ☐ Looks after home ☐ Not in paid job ☐ Other employment situation ☐ To calculate the average employment rate of father when the child is at birth, 5 and 10, we first create three dummy variables for each period. The employment dummy (c.1970) equals 1 if father is employed and equals 0 if father is unemployed. The employment dummy (c.1975) equals 1 if the father has spent zero weeks off work in the past 12 months due to illness or unemployment or for other reasons and it equals 0 if the father has spent a strictly positive time off work due to one of these reasons. The employment dummy (c.1980) equals 1 if the father has a regular paid job and it equals 0 if the father works occasionally, or if the father is seeking work, or if the father looks after the home, or if the father is not in a paid job, or if the father has another employment situation. We then calculate the average of these three dummy variables to obtain the average employment rate of the Father when the child is at birth, 5 and 10.
Age mother left full time education	What was the age of your mother when she finished full time education? .....
Age father left full time education	What was the age of your father when he finished full time education? .....
Mothers average mental health when the child is aged 5 & 10	Mother's health (c. 1975 – administered by health visitors who carried out the interviews in the children's own homes. Usually the interviewee was the mother (92.3%)) Many mothers find caring for their new children difficult if their own health is not very good. Listed below are a number of

common symptoms that mothers often describe to doctors. We would like you to say if these happen to you. **Please tick all that apply.**

Do you often have backache?
Yes (=1) ☐
No (=0) ☐

Do you feel tired most of the time?
Yes (=1) ☐
No (=0) ☐

Do you often feel miserable or depressed?
Yes (=1) ☐
No (=0) ☐

Do you often have bad headaches?
Yes (=1) ☐
No (=0) ☐

Do you often get worried about things?
Yes (=1) ☐
No (=0) ☐

Do you usually have great difficulty falling asleep or staying asleep?
Yes (=1) ☐
No (=0) ☐

Do you usually wake unnecessarily early in the morning?
Yes (=1) ☐
No (=0) ☐

Do you wear yourself out worrying about your health?
Yes (=1) ☐
No (=0) ☐

Do you often get into a violent rage?
Yes (=1) ☐
No (=0) ☐

Do people often annoy and irritate you?
Yes (=1) ☐
No (=0) ☐

Have you at times had a twitching of the face, head or shoulders?
Yes (=1) ☐
No (=0) ☐

Do you often suddenly become scared for no good reason?
Yes (=1) ☐
No (=0) ☐

Are you scared to be alone when there are no friends near you?
Yes (=1) ☐
No (=0) ☐

Are you easily upset or irritated?
Yes (=1) ☐
No (=0) ☐

Are you frightened of going out alone or meeting people?
Yes (=1) ☐
No (=0) ☐

Are you constantly keyed up and jittery?
Yes (=1) ☐
No (=0) ☐

Do you suffer from indigestion?
Yes (=1) ☐
No (=0) ☐

Do you often suffer from an upset stomach?
Yes (=1) ☐
No (=0) ☐

Is your appetite poor?
Yes (=1) ☐
No (=0) ☐

	Does every little thing get on your nerves and wear you out? Yes (=1) ☐ No (=0) ☐ Does your heart often race like mad? Yes (=1) ☐ No (=0) ☐ Do you often have bad pains in your eyes? Yes (=1) ☐ No (=0) ☐ Are you troubled with rheumatism or fibrositis? Yes (=1) ☐ No (=0) ☐ Have you ever had a nervous breakdown? Yes (=1) ☐ No (=0) ☐ The question at age 10 (c.1980 – completed through an interview of the parents. This was usually the mother) are the same as above. However, the questions are answered on a 101 point scale from 0 to 1, where 0 represents never and 1 represents all the time. To calculate the Mothers average mental health when child is aged 5 & 10, we first create two new variables that are total score from all 24 of the above questions in each survey wave. We then calculate the average of these two new variables to obtain the Mothers average mental health when the child is aged 5 & 10
Post-marital conception	Premarital conception (c.1970 – completed by the midwife, who interviewed the mother)? Yes ☐ No ☐ The post-marital conception variable is the reverse of the premarital conception question. It takes the value 0 if the answer to the pre-marital conception question is yes. It takes the value 1 if the answer to the post-marital conception question is no.
Both natural parents live in household at 10	Number of natural parents living with the study child when the study child was aged ten? (c.1980 – completed by a health visitor through an interview of the parents. This was usually the mother). Both natural parents ☐ Natural mother ☐ Natural father ☐ Neither natural parents ☐ The both natural parents live in household at 10 variable takes the value 1 if the answer to the above question is both natural parents and it takes the value of zero if the answer to the above question is natural mother or natural father or neither natural parents.
3. Intellectual performance	
Intellectual Performance at 5	**Copying Designs Test** Ask the child to copy the designs on the next two pages as carefully as possible. Fold the book back so that the child can see only one page at a time. Point to each design in turn and say "see if you can make one just like this - here" and point to the space behind the design. Two attempts should be made at each design. Do not give the child any more help than these instructions allow. (c.1975 – Test booklet that was administered by the health visitor during her visit to the child at home). Previous studies (Davie, et al., 1972; Rutter et al., 1970) have tested children's ability to copy designs as a means of assessing their visual-motor coordination. Children in our sample were asked to make two copies of each of the 8 designs shown in the test booklet, which were Circle, Cross, Square, St. Andrew's Cross, Flag, Triangle, Diamond, and a Thick cross. The following principles were followed when scoring the drawings: 1. The drawing must have the right general shape and look like what it is supposed to be. 2. It should be approximately symmetrical. 3. Angles should not be rounded. 4. The drawing should not be rotated, e.g. the point of the triangle should be uppermost. 5. Angles must be approximately opposite each other (except for the triangle). 6. Slight bowing or irregularity of lines is allowed. 7. As long as the other criteria are met, neatness is not important. 8. Lines should meet approximately but as long as other criteria are met small gaps at junctions are acceptable. 9. Slight crossing and overlapping of lines is permitted. Not all children completed two drawings of each design; therefore a score of one was given if at least one good copy was made of a given design. The total score was the sum of the scores obtained on each design, thus giving a range of 0 to 8. Zero scores were obtained when a child attempted to copy at least one design but all attempts were judged to be poor copies. We use the total score from the copying designs test as our measure of cognitive performance.
Intellectual Performance at 10	**British Ability Scales (BAS) total score** at 10. (c. 1980 – Educational Tests administered by teachers, but self-completed by child). This is a test of cognitive attainment measuring something akin to IQ (Elliot et al, 1978). After consultation with the designers of

	the test, two verbal and two non-verbal sub-scales were selected. Verbal sub scales comprised word definitions (37 items) and word similarities (42 items). Non-verbal sub-scales comprised recall of digits (34 items) and matrices (28 items). Administration of the test has to be adapted so that it could be done by teachers. To calculate the British Ability Scales (BAS) total score, we first calculate the total score in each of the four tests. We then combine the four total scores, with equal weight, to obtain the British Ability Scales (BAS) total score at 10. We use this total score as our measure of cognitive performance at 10.
4. Good conduct	
Good conduct at 5	Below is a series of descriptions of behaviour often shown by children. After each statement are three possible answers "Doesn't apply", "Applies somewhat", "Certainly applies". If your child definitely shows the behaviour described by the statement put a cross in the box next to "certainly applies". If he/she shows the behaviour described by the statement but to a lesser degree or less often, place a cross in the box next to "Applies somewhat". If, as far as you are aware, your child does not show the behaviour, place a cross under "Doesn't apply". (c.1975 -The maternal self-completed questionnaire). Very restless. Often running about or jumping up and down. Hardly ever still. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is squirmy or fidgety. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Often destroys own or others' belongings. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Frequently fights with other children. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Not much liked by other children. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Sometimes takes things belonging to others. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is often disobedient. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Cannot settle to anything for more than a few moments. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Often tells lies. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Bullies other children. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ To calculate Good conduct at 5, we calculate the total score from all 10 of the above questions.
Good conduct at 10	Below is a series of descriptions of behaviour often shown by children. After each statement, please state the degree to which you agree with this statement, where 1 denotes "Yes, fully agree" and 0 denotes "No, completely disagree". If you child shows the behaviour described by the statement but to a lesser degree or less often, please put a number between 0.01 and 0.99 to represent the degree that you agree with the statement, where higher numbers that are closer to 1 represent a stronger and stronger agreement with the statement. (c.1980 -The maternal self-completed questionnaire). Very restless …….. Squirmy or fidgety …….. Destroys belongings ……..

	Fights with other children …….. Not much liked by other children …….. Takes others belongings …….. Often disobedient …….. Cannot settle to do anything …….. Often tells lies …….. Bullies other children …….. Inattentive, easily distracted …….. Hums or makes odd noises …….. Requests must be met immediately …….. Restless or over active behaviour …….. Impulsive, Excitable …….. Interferes with other children …….. Given to rhythmic tapping/kicking …….. Difficulty concentrating on a task …….. To calculate Good conduct at 10, we calculate the total score from all 18 of the above questions.
Good conduct at 16	Below is a series of descriptions of behaviour often shown by children. After each statement are three possible answers "Doesn't apply", "Applies somewhat", and "Certainly applies". If your child definitely shows the behaviour described by the statement put a cross in the box next to "certainly applies". If he/she shows the behaviour described by the statement but to a lesser degree or less often, place a cross in the box next to "applies somewhat". If, as far as you are aware, your child does not show the behaviour, place a cross next to "Doesn't apply". (c.1986 -The maternal self-completed questionnaire). Is very restless: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is squirmy/fidgety: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Often destroys belongings: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Frequently fights with others: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is not much liked by others: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Sometimes takes others things: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is often disobedient: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Cannot settle to do things: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Often tells lies: Doesn't apply (=0) ☐

	Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Bullies others: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Below is a series of descriptions of behaviour often shown by children. After each statement are four possible answers "Never", "Rarely", "Some of the time", and "Applies most of the time". If your child definitely shows the behaviour described by the statement put a cross in the box next to "Certainly applies". If he/she shows the behaviour described by the statement but to a lesser degree or less often, place a cross in the box next to "Some of the time". If he/she rarely shows the behaviour described by the statement, place a cross in the box next to "Rarely". If, as far as you are aware, your child does not show the behaviour, place a cross in the box next to "Never". (c.1986 -The maternal self-completed questionnaire). Is inattentive/easily distracted: Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Hums or makes odd noises: Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Requests must be met immediately: Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Shows restless behaviour: Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Is impulsive/excitable Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Interferes with others activity Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Given to rhythmic tapping/kicking Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ To calculate Good conduct at 16, we calculate the total score from all 17 of the above questions.

5. Emotional health

Emotional health at 5	Below is a list of minor health problems which most children have at the same time. Please tell us how often each of these happens with your child by ticking the relevant box that best describes this. (c.1975 -The maternal self-completed questionnaire). Complains of headaches Never in the last 12 months (=0) ☐ Less than one a month (=0.33) ☐ At least once a month (=0.66) ☐ At least once a week (=1) ☐ Complains of stomach ache or has vomited Never in the last 12 months (=0) ☐ Less than one a month (=0.33) ☐ At least once a month (=0.66) ☐ At least once a week (=1) ☐ Complains of biliousness Never in the last 12 months (=0) ☐

Less than one a month (=0.33) ☐
At least once a month (=0.66) ☐
At least once a week (=1) ☐

Has temper tantrums (that is, complete loss of temper with shouting, angry movements, etc.)
Never in the last 12 months (=0) ☐
Less than one a month (=0.33) ☐
At least once a month (=0.66) ☐
At least once a week (=1) ☐

Most children go through "difficult" stages. Please show by putting a cross in the correct boxes whether or not your child has any of the following difficulties at the present time. Please answer every question.

Does your child have any sleeping difficulty?
No (=0) ☐
Yes, mild (=0.33) ☐
Yes, NEC (=.66) ☐
Yes, severe (=1) ☐

If yes, which of the following difficulties does he/she have -

Difficulty "getting off to sleep"?
Yes (=1) ☐
No (=0) ☐

"Waking during the night"?
Yes (=1) ☐
No (=0) ☐

"Waking early in the morning"?
Yes (=1) ☐
No (=0) ☐

"Nightmares or night terrors"?
Yes (=1) ☐
No (=0) ☐

Does child ever wet the bed at nights?
Yes (=1) ☐
No (=0) ☐

Frequency of bed wetting?
Every night (=1) ☐
Most nights (=0.75) ☐
Occasionally (at least once a week) (=0.50) ☐
Very occasionally (less than once a week) (=0.25) ☐
Not stated how often (=0.25) ☐
Not known to wet the bed (=0) ☐

Does child ever wet his/her pants in the daytime?
Yes (=1) ☐
No (=0) ☐

Frequency of day wetting?
Every day (=1) ☐
Most days (=0.75) ☐
Occasionally (at least once a week) (=0.50) ☐
Very occasionally (less than once a week) (=0.25) ☐
Not stated how often (=0.25) ☐
Not known to wet pants (=0) ☐

Does child soil or ever make a mess in his/her pants?
Yes (=1) ☐
No (=0) ☐

Frequency that child soils his pants or makes a mess in his pants?
Every day (=1) ☐
Most days (=0.75) ☐
Occasionally (at least once a week) (=0.50) ☐
Very occasionally (less than once a week) (=0.25) ☐
Not stated how often (=0.25) ☐
Not known to wet pants (=0) ☐

Does child have any eating or appetite problems?
Never in the last 12 months (=0) ☐
Less than one a month (=0.33) ☐
At least once a month (=0.66) ☐
At least once a week (=1) ☐

If yes, is it:

	Not eating enough? Yes (=1) ☐ No (=0) ☐ Overeating? Yes (=1) ☐ No (=0) ☐ Faddiness? Yes (=1) ☐ No (=0) ☐ Other eating problems? Yes (=1) ☐ No (=0) ☐ Child attends school? Yes (=0) ☐ No (=1) ☐ If yes, has she/he had tears on arrival? No (=0) ☐ Yes once or twice a week (=0.33) ☐ Yes no information (=0.66) ☐ Yes every day (=1) ☐ Below is a series of descriptions of behaviour often shown by children. After each statement are three possible answers "Doesn't apply", "Applies somewhat", and "Certainly applies". If your child definitely shows the behaviour described by the statement put a cross in the box next to "certainly applies". If he/she shows the behaviour described by the statement but to a lesser degree or less often, place a cross in the box next to "applies somewhat". If, as far as you are aware, your child does not show the behaviour, place a cross in the box next to "Doesn't apply". Often worried, worries about many things: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Tends to do things on his own – rather solitary Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Irritable. Is quick to "fly off the handle" Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Often appears miserable, unhappy, tearful or distressed. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Tends to be fearful or afraid of new things or new situations. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is fussy of over particular Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ To calculate the emotional health at 5 we calculate the total score from all 28 of the above questions.
Emotional health at 10	Below is a list of minor health problems which most children have at the same time. Please tell us how often each of these happens with your child by ticking the relevant box which best describes this (c.1980 -The maternal self-completed questionnaire). Complains of headaches Never in the last 12 months (=0) ☐ Less than one a month (=0.33) ☐ At least once a month (=0.66) ☐ At least once a week (=1) ☐ Complains of stomach ache or has vomited Never in the last 12 months (=0) ☐ Less than one a month (=0.33) ☐ At least once a month (=0.66) ☐ At least once a week (=1) ☐ Tears on arrival at school? No (=0) ☐

Yes once or twice a week (=0.33) ☐
Yes no information (=0.66) ☐
Yes every day (=1) ☐

Truants from school?
No (=0) ☐
Yes once or twice a week (=0.33) ☐
Yes no information (=0.66) ☐
Yes every day (=1) ☐

Frequency of bed wetting at night?
Every night (=1) ☐
Most nights (=0.75) ☐
Occasionally (at least once a week) (=0.50) ☐
Very occasionally (less than once a week) (=0.25) ☐
Not stated how often (=0.25) ☐
Not known to wet the bed (=0) ☐

Frequency of day wetting?
Every day (=1) ☐
Most days (=0.75) ☐
Occasionally (at least once a week) (=0.50) ☐
Very occasionally (less than once a week) (=0.25) ☐
Not stated how often (=0.25) ☐
Not known to wet pants (=0) ☐

Frequency that child soils his pants or makes a mess in his pants?
Every day (=1) ☐
Most days (=0.75) ☐
Occasionally (at least once a week) (=0.50) ☐
Very occasionally (less than once a week) (=0.25) ☐
Not stated how often (=0.25) ☐
Not known to wet pants (=0) ☐

Does child have any eating or appetite problems?
Yes (=1) ☐
No (=0) ☐

If yes, is it:

Not eating enough?
Yes (=1) ☐
No (=0) ☐

Overeating?
Yes (=1) ☐
No (=0) ☐

Faddiness?
Yes (=1) ☐
No (=0) ☐

Most children go through "difficult" stages. Please show by putting a cross in the correct boxes whether or not your child has any of the following difficulties at the present time. Please answer every question.

Does your child have any sleeping difficulty?
Yes (=1) ☐
No (=0) ☐

If yes, which of the following difficulties does he/she have?
Difficulty "getting off to sleep"?
Yes (=1) ☐
No (=0) ☐

"Waking during the night"?
Yes (=1) ☐
No (=0) ☐

"Waking early in the morning"?
Yes (=1) ☐
No (=0) ☐

"Nightmares or night terrors"?
Yes (=1) ☐
No (=0) ☐

Below is a series of descriptions of behaviour often shown by children. After each statement, please state the degree to which you agree with this statement, where 1 denotes "Yes, fully agree" and 0 denotes "No, completely disagree. If you child shows the behaviour described by the statement but to a lesser degree or less often, please put a number between 0.01 and 0.99 to represent the degree that you agree with the statement, where higher numbers that are closer to 1 represent a stronger and stronger agreement with the statement.

	Often worried, worries about many things: ……. Tends to do things on his own – rather solitary …….. Irritable. Is quick to "fly off the handle" …….. Often appears miserable, unhappy, tearful or distressed. …….. Tends to be fearful or afraid of new things or new situations. …….. Is fussy of over particular …….. Is sullen or sulky …….. Cries for little cause …….. To calculate the emotional health at 10 we calculate the total score from all 24 of the above questions.
Emotional health at 16	Below is a series of descriptions of behaviour often shown by children. After each statement are three possible answers "Doesn't apply", "Applies somewhat", and "Certainly applies". If your child definitely shows the behaviour described by the statement put a cross in the box next to "certainly applies". If he/she shows the behaviour described by the statement but to a lesser degree or less often, place a cross in the box next to "applies somewhat". If, as far as you are aware, your child does not show the behaviour, place a cross next to "Doesn't apply". (c.1986 -The maternal self-completed questionnaire). Often worried, worries about many things: Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Tends to do things on his own – rather solitary Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Irritable. Is quick to "fly off the handle" Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Often appears miserable, unhappy, tearful or distressed. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Tends to be fearful or afraid of new things or new situations. Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Is fussy of over particular Doesn't apply (=0) ☐ Applies somewhat (=0.5) ☐ Certainly applies (=1) ☐ Below is a series of descriptions of behaviour often shown by children. After each statement are four possible answers "Never", "Rarely", "Some of the time", and "Applies most of the time". If your child definitely shows the behaviour described by the statement put a cross in the box next to "Certainly applies". If he/she shows the behaviour described by the statement but to a lesser degree or less often, place a cross in the box next to "Some of the time". If he/she rarely shows the behaviour described by the statement, place a cross in the box next to "Rarely". If, as far as you are aware, your child does not show the behaviour, place a cross in the box next to "Never". (c.1986 -The maternal self-completed questionnaire). Is sullen or sulky Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ Cries for little cause Never (=0) ☐ Rarely (=0.33) ☐ Some of the time (=0.66) ☐ Certainly applies (=1) ☐ **FEELING HEALTHY** Instructions Here you will find a list of health problems from which a number of people suffer. We are asking you to tell us whether you have each of these problems most of the time, some of the time, rarely or never. Do you have backache? Rarely or never (=0) ☐

Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you feel tired?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you feel miserable or depressed?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you have headaches?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do things worry you?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you have great difficulty sleeping?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you wake unnecessarily early in the morning?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you wear yourself out worrying about your health?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you ever get in a violent rage?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do people annoy and irritate you?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Have you at times a twitching of the face, head or shoulders?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you suddenly become scared for no good reason?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Are you scared if alone?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Are you easily upset or irritated?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Are you frightened of going out alone or meeting people?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Are you keyed up and jittery?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐
Most of the time (=1) ☐

Do you suffer from indigestion?
Rarely or never (=0) ☐
Some of the time (=0.50) ☐

	Most of the time (=1) ☐ Do you suffer from upset stomach? Rarely or never (=0) ☐ Some of the time (=0.50) ☐ Most of the time (=1) ☐ Is your appetite poor? Rarely or never (=0) ☐ Some of the time (=0.50) ☐ Most of the time (=1) ☐ Does every little thing get on your nerves and wear you out? Rarely or never (=0) ☐ Some of the time (=0.50) ☐ Most of the time (=1) ☐ Does your heart race like mad? Rarely or never (=0) ☐ Some of the time (=0.50) ☐ Most of the time (=1) ☐ Do you have bad pains in your eyes? Rarely or never (=0) ☐ Some of the time (=0.50) ☐ Most of the time (=1) ☐ To calculate the emotional health at 16, we first create two new total score variables. The first total score variable calculates the total score on the first 8 questions shown above. The second total score variable calculates the total score on the following 22 questions. We then standardise each of these total score variables. Our emotional health at 16 measure combines these two standardised total score variables with a one third weight on the first standardised total score variable, which was based on the first eight questions, and a two thirds weight on the second standardised total score variable, which was based on the following twenty-two questions.