

WHAT PREDICTS A SUCCESSFUL LIFE? A LIFE-COURSE MODEL OF WELL-BEING*

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ABSTRACT

Policy-makers who care about well-being 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). We show that the most powerful childhood predictor of adult life-satisfaction is the child's emotional health, followed by the child's conduct. The least powerful predictor is the child's intellectual development. This may have 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.

Keywords: Well-being, Life-satisfaction, Intervention, Model, Life-course, Emotional health, Conduct, Intellectual performance, Success.

JEL Classification: A12; D60; H00; I31

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“The ultimate purpose of economics, of course, is to understand and promote the enhancement of well-being”.² 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. However, what has been lacking is evidence regarding the determinants of well-being. With the rise in interest in subjective well-being across the social sciences, that situation is now changing. Cross-sectional data have been analysed for some decades, and reveal the strong relation between current characteristics and well-being. But we also need to know how those characteristics themselves arose, if we want to decide at what point in the life-cycle interventions would be most effective.

A prerequisite for any policy which aims to maximise well-being is then 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, as the size of the different 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,³ 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).⁴

The second strand of work 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 Smith⁵ on the lifetime determinants of earnings, but with adult well-being now being the outcome of interest. Recent leaders in this field of work include Frijters, Johnston and Shields.⁶ But their work focusses exclusively on the well-being outcome, and ignores the determination of other adult outcomes such as income, employment, family status, criminality and health, which then feed into well-being. Such an

² Speech by Ben S. Bernanke to 32nd General Conference of the International Association for Research in Income and Wealth, Cambridge, Massachusetts, 6th August 2012.

³ OECD (2013).

⁴ 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.

⁵ See for example Cunha and Heckman (2008); Cunha et al. (2010); Goodman et al. (2011).

⁶ 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.

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.

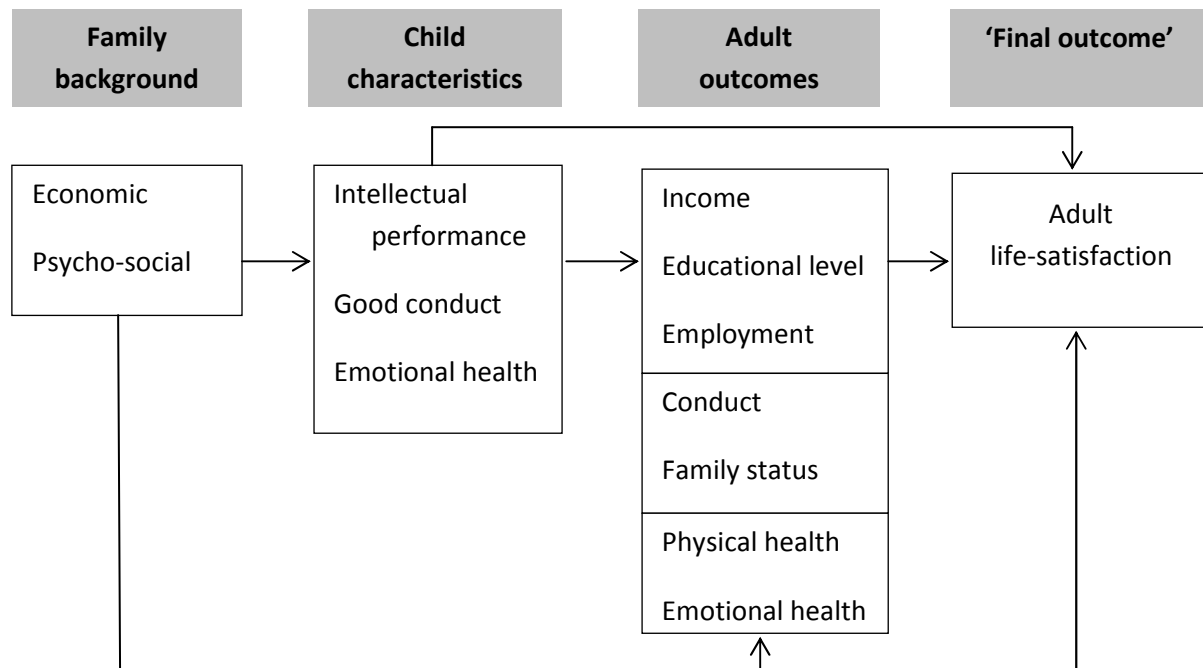


Fig. 1. *A Model of Adult Life-Satisfaction*

We believe that a combination of the two approaches is required, 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 life-satisfaction 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 family background and childhood development play an important role in this.

The key question here is the relative importance of 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? In other words, 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, in that process, what matters more than what. With such models 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. Here candidate areas for policy development could first be identified. 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.

The development of 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.⁷ 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 important conclusions emerge.

⁷ See for example, De Neve et al. (2012).

is, “How dissatisfied or satisfied are you about the way your life has turned out so far?”¹² Clearly cognitive processing must play a role in the way this question is answered.¹³ By contrast, for adult emotional health we have 24 Yes/No questions relating to tiredness, depression, worry, irrational fear, rage, irritation, tension and psychosomatic symptoms (see the questionnaires section of the online Appendix). These are very different in nature from the life-satisfaction question.

Economic	Log income (equivalised)	at 34
	Educational achievement	by 34
	Employed (measured as not unemployed)	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.¹⁴ 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? But feelings are 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.¹⁵ This is reflected in our paper by the distinction between social behaviour and emotional health.

¹² Life satisfaction as a broad measure of subjective well-being has been subject to a number of validity tests, via its relations to physiological and neurological measures, and its predictive power regarding future observed behaviours. Some of this validation work is described in Clark *et al.* (2008). The BCS life satisfaction question is a little different from that found in some other general-purpose surveys, although we believe that this question will likely behave similarly to the more standard question.

¹³ One intriguing possibility is that cognitive skill changes how individuals calculate life-satisfaction. We know, for example, that cognitive ability is correlated with impatience and risk aversion (Dohmen *et al.*, 2012). It is rather difficult to know how to test for this explicitly. It is worth nothing that some psychologists question the extent to which life-satisfaction is cognitive.

¹⁴ For papers by economists on non-cognitive skills see, for example Cunha and Heckman (2008); Almlund *et al.* (2011) and Goodman *et al.* (2011). Recently Heckman’s group has extended their perspective to the 5 main (OCEAN) dimensions of personality (Almlund *et al.* (2011)). These main personality traits have long been analysed in psychology (see Digman, 1990).

¹⁵ On the measurement of children’s emotional health and behaviour, see Rutter *et al.* (2008).

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, and we may well expect their effects not to be the same.¹⁶

The BCS data provide us with 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 two sets of family variables as shown in the figure (where age refers to the age of the child).¹⁷ The exact definitions of all variables appear 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	
<i>Economic (F^E)</i>	
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	--
<i>Psycho-social (F^P)</i>	
Mother's emotional health	5, 10 average
Child conceived within marriage	--
Both parents still together	10

Fig. 3. *Childhood variables*

¹⁶ 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 with respect to some outcome variable. 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).

¹⁷ 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 construct aggregated measures of what the family was like when the child was young.

2.2. Method of analysis

Our analysis of the BCS data begins in Table 1 by predicting life-satisfaction from other adult outcomes and childhood variables. Then in Table 2 we examine how the other adult outcomes are themselves 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 C.

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). This is a meaningful measure of the importance of the variable.

However, to see the wood for the trees, some simplification using composite variables is helpful. We illustrate below. Suppose we are looking at the predictors of an adult variable called Y , and focus on the effect of child conduct at ages 5, 10 and 16 (call these variables C_5 , C_{10} , C_{16}). Then we have a regression:

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

$$= (c_5 + c_{10} + c_{16}) \cdot SD(C) \cdot \left(\frac{C}{SD(C)} \right) + \text{etc.}$$

where C is a composite variable defined by

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

Thus, if we form the composite variable C , its coefficient is the sum of the separate coefficients times the standard deviation of the composite variable.¹⁸ This is the procedure we use throughout to calculate the effect of composite variables. (The detailed first-stage regressions appear in the online Appendix.)

¹⁸ (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 . Since C_5 , C_{10} and C_{16} are all standardised variables $SD(C) < 1$ unless all the variables are perfectly correlated.

(ii) To obtain the standard error of the estimate of $(c_5 + c_{10} + c_{16}) \cdot SD(C)$ 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 for the variables that we want to use. Each regression is performed on all survey members for whom we have a non-missing value of the left-hand variable. When there are no data on a right-hand variable, we include a variable-specific dummy to register this fact (the so-called Missing Indicator method). We have also used as an alternative the Multiple Imputation method, producing very similar main results – see the online Appendix. Our discussion of results is consistent with the results from 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 make our best estimate of the true R^2 , we start from the standard property of all standardised regressions. This is that, if

$$Y = \sum p_i X_i + e,$$

the R^2 is given by

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

where r_{ij} is the correlation coefficient between the two variables. All of our regression tables compute the R^2 using this formula, taking r_{ij} from the correlation matrix in Appendix C.¹⁹

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. The first column of Table 1 focuses on the **proximal predictors of life-satisfaction** – that is, the effect of the individual’s other adult characteristics. We can straight away see 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 over time 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-

¹⁹ 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.

hand side and measured all 7 other variables at their age 34 level (the idea being that this would remove at least part of the fixed effect). The results are shown in Appendix B and are again supportive of the conclusions from Column (1).

What happens if we now instead 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 probably the inverse to that of most policy-makers. In popular discussion one encounters two main criticisms of the well-being approach. 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.²⁰ As our evidence shows, the second point is not correct.

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 a standard deviation.

The next obvious question is, **how does early life exert its influence on adult life-satisfaction?** If the influence were only to be direct, we might wonder why there are in fact so many policies that relate 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 then the effect of adult outcomes on life-satisfaction.²¹ 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.

3.2. *Predictors of adult outcomes*

The next step is then to examine the effect of childhood on the adult outcomes. This is what we do in a series of regressions in Table 2. The specification here is the same as that used to predict adult life-satisfaction in column 2 of Table 1 (and we include the results of that estimation for reference in the last column of Table 2). When we consider the economic

²⁰ See HM Treasury (2008).

²¹ 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, finding that $ac+b$ is roughly double b can only arise if a is substantially larger than b .

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, the pattern changes sharply when we turn to the social outcomes (criminality and family formation): here the key is how the person behaved as a child. Finally, for 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 regarding mediation (when we discussed the results in Table 1). Table 3 presents 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 of this calculation appear in the left-hand column of Table 3. We can compare these 'simulated' indirect effects with the indirect effects implied in Table 1 (as given 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 only small, once childhood variables have been taken into account. But these childhood variables are of course themselves very likely affected by family influences. So what happens if we look at the reduced-form equations, where we include only the effects (direct and indirect) of family characteristics on adult outcomes?

The results appear in Table 4. The family does now emerge as more important, and in particular as a predictor of educational performance and income – the variables hitherto most studied by economists. But (insofar as we can measure the family's characteristics) family variables have a smaller 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 an individual's development can we predict their adult outcomes? Our answer to this question appears in Table 5. It has recently become quite fashionable to argue that key experiences by age 5 (plus genes) largely determine adult outcomes.²² This argument has been supported by large odds ratios between the adult outcomes of more- and less-advantaged children. However, the proper test of predictability is the R^2 s: these appear in Table 5.

²² See for example Allen (2011), Field (2010) and less strongly Marmot et al. (2010).

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 Shields²³ have pointed out, life-satisfaction is extremely difficult to predict even at age 10 and only slightly easier at age 16. The most predictable outcome is educational achievement. But family income is difficult to predict from information up to age 16, as is life-satisfaction. Almost all outcomes are much easier to predict at age 16 than at age 5.²⁴

4. Use for Policy Analysis

Any future policy-maker aiming at population well-being will require a model of the kind we have been discussing – including genetic controls if possible.²⁵ 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 whether changing some institution or policy would affect citizens for better or worse. Our existing model already suggests some new areas for policy development, although an ideal model would be more detailed, and refined by replication.

How could such a model be used? Let us assume that the policy-maker wanted to maximise the sum of life-satisfaction of citizens of all ages.²⁶ This would require a continuous record of life-satisfaction at each age, plus a model of how that path was determined. That model would suggest areas for policy development.

4.1. *Effectiveness of intervention*

To know whether any particular intervention was cost-effective, we 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, say that we provide parent training to a badly-behaved 5-year-old and find an effect size of β . We can then go to the estimated model and simulate all the subsequent effects of a β standard deviations change in conduct at 5.

4.2. *Costs*

Establishing the effects of an intervention is one thing; assessing its cost-effectiveness is another. For the latter we need to know not only the initial cost of the original intervention but also any impact that this has on subsequent public expenditure. Some “positive” impacts

²³ Frijters et al. (2011).

²⁴ Clearly all of the findings in this paper are affected by measurement error.

²⁵ This may become possible through greater availability of twin and adoptee studies, or better identification of critical gene sequences in DNA (such DNA data are now routinely collected in many studies).

²⁶ 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. We here ignore that complication.

will increase subsequent public expenditure – for example, a successful education intervention may lead to more staying on at school. On the contrary, other 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, we could make a decisive argument for the intervention: much of the discussion of early intervention to date has been of this kind.²⁷ However, 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. The analysis of childhood interventions will need to appeal to estimates of benefits as well as net cost in order to get some feel for the level of cost-effectiveness.

4.3. *Cost-effectiveness*

In that case how would we judge if interventions were cost-effective? It is best to think of the level of public expenditure as being pre-determined, and independent of the potential benefits of current policy options.²⁸ 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.

All of this does require good information on costs. Future models should therefore 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 they education, pre-school, health-related, law and order, employment or welfare benefits). In our future work, on data from ALSPAC,²⁹ we plan this degree of detail.

4.4. *When to intervene?*

What can we now say about where and when to intervene? These are separate issues. The first asks 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 any interventions should take place – earlier or later?³⁰ If we consider that childhood well-being matters as much as adult well-being,³¹ then perhaps the main issue on the benefit side is how long the effects last. With respect to language learning, for example, the answer 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 flows back 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 at a much later date. Clearly we need interventions at all ages and the

²⁷ See for example, Knapp et al. (2011b).

²⁸ See for example O'Donnell et al. (2014)

²⁹ Avon Longitudinal Study of Parents and Children.

³⁰ Cunha and Heckman (2008) argue strongly in favour of early intervention on the grounds that 'skills beget skills' for which they offer supporting evidence.

³¹ As argued for example by Layard and Dunn (2009).

optimum balance will remain unclear until we have better life-course models and better experimental data.

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), in which adult life-satisfaction is directly affected by both adult circumstances and by childhood characteristics. But, even though childhood characteristics also affect adult circumstances, they have only limited power in predicting 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 childhood predictor. We find that the intellectual performance of a child is the least important childhood predictor of life-satisfaction as an adult. Intellectual performance is of course a good predictor of adult educational achievement and income. But income only explains 0.5% of the variance of adult life-satisfaction. Such findings are highly suggestive but need to be followed by more detailed models which are therefore more operational.

Table 1
Predictors of life-satisfaction
(Dependent variable: life-satisfaction at 34)

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

Note: For variable definitions see Figs 2 and 3 and Appendix A. All variables are measured at age 34 unless stated otherwise and are standardised (except gender). Adjusted R² excludes the effect of gender on the explained variance and the total variance. Estimation is by OLS with robust standard errors in parentheses.

Table 2
Predictors of adult outcomes, using information up to age 16
(Dependent variable: life-satisfaction at 34)

	(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
Adjusted R ²	0.05	0.376	0.01	0.07	0.029	0.067	0.207	0.071

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

For explanation see section 3.3.

Table 4
Predictors of adult outcomes, using information on family only
(Dependent variable: life-satisfaction at 34)

	(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 (0.018)	0.323 (0.019)	0.079 (0.030)	0.134 (0.051)	0.069 (0.020)	0.069 (0.020)	0.114 (0.027)	0.067 (0.017)
Family Psychosocial	0.032 (0.014)	0.079 (0.079)	0.009 (0.026)	0.068 (0.013)	0.035 (0.013)	0.066 (0.012)	0.115 (0.014)	0.065 (0.013)
Female	0.183 (0.021)	0.054 (0.018)	0.072 (0.021)	0.477 (0.019)	-0.028 (0.024)	-0.092 (0.022)	-0.326 (0.021)	0.086 (0.021)
Observations	8,888	10,575	8,928	10,918	6,896	8,260	8,254	8,868
Adjusted R ²	0.021	0.0176	0.007	0.028	0.009	0.022	0.051	0.018

Note: See Note to Table 1.

Table 5

Adjusted R^2 for equations predicting adult outcomes, using different amounts of information.
(Dependent variable: life-satisfaction at 34)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log income	Educational achievement	Employed	Good conduct	Has a partner	Self- perceived health (26)	Emotional health (26)	Life- satisfaction
<i>Information on:</i>								
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 variables³²

ADULT

<i>Log income (34)</i>	Household disposable income per OECD adult equivalent (extra adults .7; children .5)	
<i>Educational achievement (34)</i>	PhD or masters = 0.750 Degree = 0.486 A level = 0.237 GCSE = 0.188 CSE = 0.043 No qualifications = 0 (Values taken from a regression of male log full-time earnings on “having a family”, childhood emotion and conduct and 5 education dummies.) ³³	
<i>Employed (34)</i>	Not unemployed at time of interview.	
<i>Has a partner (34)</i>	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	
<i>Good conduct (16-34)</i>	Minus total times found guilty by a criminal court or formally cautioned at police station.	(subjects’ replies)
<i>Self-perceived health (26)</i>	Single Question with answers treated as 1-4	
<i>Emotional health (26)</i>	Sum of replies to 24 questions	(subjects’ replies)
<i>Life-satisfaction (34)</i>	“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.”	<i>Life-satisfaction (34)</i>

CHILD

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

³² See the Online Appendix for the actual questions.

³³ 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.

Appendix B: Predictors of life-satisfaction at 34, including the lagged dependent variable

(Dependent variable: life-satisfaction at 34)

Life-satisfaction at 26	.258	(.013)
Log Income (34)	.034	(.010)
Educational achievement (34)	.019	(.009)
Employed (34)	.065	(.011)
Good conduct (16-34)	.029	(.012)
Has a partner (34)	.090	(.011)
Self-perceived health (34)	.095	(.010)
Emotional health (34)	.323	(.012)

Note: See Note to Table 1.

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Additional Supporting information may be found in the online version of this article:

Appendix C

OLS Tables

Table C.1. Predictors of adult outcomes: using information up to age 5.

Table C.2. Predictors of adult outcomes: using information up to age 10.

Table C.3. Predictors of outcomes at age 5: using information on family only.

Table C.4. Predictors of outcomes at age 10: using information up to age 5.

Table C.5. Predictors of outcomes at age 16: using information up to age 10.

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

Table C.7. Predictors of adult outcomes: using information on family only (more detail)

Table C.8. Correlations of all variables.

Multiple Imputation tables

Text Tables (as in text)

Appendix tables (as above)

Questionnaires

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Appendix C

OLS Tables

Table C.1. Predictors of adult outcomes: using information up to age 5.

Table C.2. Predictors of adult outcomes: using information up to age 10.

Table C.3. Predictors of outcomes at age 5: using information on family only.

Table C.4. Predictors of outcomes at age 10: using information up to age 5.

Table C.5. Predictors of outcomes at age 16: using information up to age 10.

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

Table C.7. Predictors of adult outcomes: using information on family only (more detail)

Table C.8. Correlations of all variables.

Multiple Imputation tables

Text Tables (as in text)

Appendix tables (as above)

Questionnaires

OLS TABLES

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

Table C.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
Adjusted R ²	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 C.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
Adjusted R ²	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 C.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	1	-.21	-.16	-.13	-.16	.13	-.02	.00	.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 score at 5									11	= Educational Achievement									20	= Total number of siblings at 10												
3	= Has at least one GCSE 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 child was born									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)	(2)	(3)
	Using adult variables only	Using childhood variables only	Using both
Log income	0.051 (0.013)		0.045 (0.012)
Educational achievement	0.027 (0.010)		0.018 (0.013)
Employed	0.091 (0.016)		0.089 (0.018)
Good conduct	0.067 (0.011)		0.063 (0.011)
Has a partner	0.228 (0.019)		0.226 (0.019)
Self-perceived health (26)	0.070 (0.010)		0.064 (0.009)
Emotional health (26)	0.213 (0.019)		0.166 (0.021)
Intellectual performance (5 10 16)		0.031 (0.016)	-0.026 (0.018)
Good conduct (5 10 16)		0.059 (0.019)	0.029 (0.019)
Emotional health (5 10 16)		0.193 (0.021)	0.106 (0.021)
Family Economic		0.061 (0.015)	0.028 (0.016)
Family Psychosocial		0.044 (0.010)	0.030 (0.009)
Female	0.118 (0.022)	0.173 (0.019)	0.139 (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 (0.019)	0.314 (0.020)	0.098 (0.046)	0.118 (0.053)	0.056 (0.025)	0.082 (0.018)	0.120 (0.033)	0.082 (0.020)
Family Psychosocial	0.030 (0.011)	0.077 (0.012)	0.034 (0.050)	0.081 (0.019)	0.051 (0.021)	0.093 (0.014)	0.144 (0.012)	0.099 (0.010)
Female	0.196 (0.032)	0.065 (0.016)	0.098 (0.028)	0.470 (0.019)	0.082 (0.018)	-0.090 (0.025)	-0.308 (0.021)	0.177 (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 C.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
Adjusted R ²	0.029	0.176	0.008	0.043	0.016	0.027	0.061	0.022

Robust standard errors in parentheses

Table C.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 C.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 C.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 C.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 C.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	0.028	0.000	0.060	0.044	0.013	0.005	0.027	0.025
of father at birth, 5 and	(0.012)	(0.007)	(0.033)	(0.023)	(0.012)	(0.016)	(0.014)	(0.016)
10								
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 C.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	0.035	0.014	0.064	0.054	0.017	0.009	0.033	0.029
of father at birth, 5 and	(0.013)	(0.010)	(0.034)	(0.021)	(0.012)	(0.017)	(0.016)	(0.017)
10								
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 C.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 score									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 child is aged 5					27	=	Female													

QUESTIONNAIRES

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

1. Adult outcomes	
Educational qualifications (34)	<p>We are interested in knowing about ANY qualifications you may have gained AT ANY TIME, either at school or since.</p> <p>Which, if any, of the following qualifications have you gained? Please tick all that apply.</p> <p>No qualifications <input type="checkbox"/></p> <p>Part 1 City and Guilds qualification <input type="checkbox"/> RSA certificate <input type="checkbox"/> Level 1 NVQ qualification <input type="checkbox"/> HGV licence <input type="checkbox"/> Other vocational qualification <input type="checkbox"/> More than 0 but less than 5 GCSEs at A-C <input type="checkbox"/></p> <p>Part 2 City and Guilds qualification <input type="checkbox"/> Level 2 NVQ qualification <input type="checkbox"/> More than 5 GCSEs at A-C <input type="checkbox"/></p> <p>Part 3 City and Guilds qualification <input type="checkbox"/> National certificate diploma BTEC qualification <input type="checkbox"/> Level 3 NVQ qualification <input type="checkbox"/> More than 2 A-Levels <input type="checkbox"/></p> <p>Part 4 City and Guilds qualification <input type="checkbox"/> Level 4 NVQ qualification <input type="checkbox"/> HNC vocational qualification <input type="checkbox"/> Diploma of higher education <input type="checkbox"/> A degree (e.g. BA BSc) <input type="checkbox"/> Other degree level qualification <input type="checkbox"/> Other teaching qualification <input type="checkbox"/></p> <p>Higher degree (e.g. Phd, MSc) <input type="checkbox"/></p> <p>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.</p>
Has a partner (34)	<p>What is your current marital status? Please tick one box only.</p> <p>Married <input type="checkbox"/> Cohabiting (living as a couple) <input type="checkbox"/> Single (and never married) <input type="checkbox"/> Separated <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed <input type="checkbox"/></p> <p>Have you ever been pregnant or got anyone else pregnant? Please tick one box only.</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Has the outcome of any of these pregnancies resulted in a live birth (derived)?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>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:</p> <p>$mnc = 1$ 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.</p> <p>$mnc = 1$ 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.</p> <p>$nmc = 1$ 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 is married (or cohabiting) and does not have children or if the cohort member is not married (or cohabiting) and does not have children.</p> <p>$nmc = 1$ 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.</p> <p>We then run the following regression:</p>

	$s.ls = \alpha_1 mc + \alpha_2 mnc + \alpha_3 nmc + \alpha_4 s.ft + \alpha_5 s.ear + \alpha_6 s.hlth + \alpha_7 s.fem + \alpha_8 d.ft + \alpha_9 d.ear + \alpha_{10} d.hlth + \alpha_{11} d.fem + \epsilon$ <p>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.</p>																																																																											
Good conduct (16 to 34)	<p>How many times have you been formally cautioned at the police station?</p> <p>How many times have you been found guilty by a criminal court?</p> <p>The total (reversed) score from the above two questions are then taken as our measure of good conduct (free of crime).</p>																																																																											
Self-perceived Health (26)	<p>How would you describe your general health? Please tick one box only.</p> <p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Fair <input type="checkbox"/></p> <p>Poor <input type="checkbox"/></p> <p>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.</p>																																																																											
Emotional health (26)	<p>How You feel</p> <p>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.</p> <table border="0"> <thead> <tr> <th></th><th>Yes</th><th>No</th></tr> </thead> <tbody> <tr><td>Do you often have backache?</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>Do you feel tired most of the time?</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>Do you often feel miserable or depressed?</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>Do you often have bad headaches?</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>Do you often get worried about things?</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>Do you usually have great difficulty in falling or staying asleep?</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>Do you usually wake unnecessarily early in the morning?</td><td><input 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Life Satisfaction at 34	<p>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.</p> <table border="0"> <thead> <tr> <th>Completely Dissatisfied</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>Completely Satisfied</th></tr> </thead> <tbody> <tr> <td></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td></td></tr> </tbody> </table>	Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																		
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2. Family variables																																																																												
Social class of the father when the child is aged 10	<p>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.</p> <p>I (Professional) <input type="checkbox"/></p> <p>II (Semi-professional) <input type="checkbox"/></p> <p>III (Non-manual skilled) <input type="checkbox"/></p> <p>III (Manual skilled) <input type="checkbox"/></p> <p>IV (Semi-skilled) <input type="checkbox"/></p> <p>V (Unskilled) <input type="checkbox"/></p> <p>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).</p>																																																																											

Log of family weekly income when child is aged 10	<p>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.</p> <p>Under £35 per week <input type="checkbox"/></p> <p>Between £35 and £49 per week <input type="checkbox"/></p> <p>Between £50 and £99 per week <input type="checkbox"/></p> <p>Between £100 and £149 per week <input type="checkbox"/></p> <p>Between £150 and £199 per week <input type="checkbox"/></p> <p>Between £200 and £249 per week <input type="checkbox"/></p> <p>£250 and more per week <input type="checkbox"/></p> <p>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.</p>
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	<p>Employment status of the 'husband' at present (c.1970 – completed by the midwife, who interviewed the mother)? Please tick one box only.</p> <p>Employed <input type="checkbox"/></p> <p>Unemployed <input type="checkbox"/></p> <p>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%))?</p> <p>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.</p> <p>Regular paid job <input type="checkbox"/></p> <p>Works occasionally <input type="checkbox"/></p> <p>Seeking work <input type="checkbox"/></p> <p>Looks after home <input type="checkbox"/></p> <p>Not in paid job <input type="checkbox"/></p> <p>Other employment situation <input type="checkbox"/></p> <p>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.</p>
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	<p>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%))</p> <p>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.</p> <p>Do you often have backache?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Do you feel tired most of the time?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Do you often feel miserable or depressed?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Do you often have bad headaches?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Do you often get worried about things?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Do you usually have great difficulty falling asleep or staying asleep?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Do you usually wake unnecessarily early in the morning?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p>

Do you wear yourself out worrying about your health?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Do you often get into a violent rage?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Do people often annoy and irritate you?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Have you at times had a twitching of the face, head or shoulders?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Do you often suddenly become scared for no good reason?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Are you scared to be alone when there are no friends near you?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Are you easily upset or irritated?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Are you frightened of going out alone or meeting people?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Are you constantly keyed up and jittery?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Do you suffer from indigestion?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Do you often suffer from an upset stomach?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Is your appetite poor?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Does every little thing get on your nerves and wear you out?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Does your heart often race like mad?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Do you often have bad pains in your eyes?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Are you troubled with rheumatism or fibrositis?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>
Have you ever had a nervous breakdown?	<input type="checkbox"/>
Yes (=1)	
No (=0)	<input type="checkbox"/>

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)?

	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>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.</p>
Both natural parents live in household at 10	<p>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).</p> <p>Both natural parents <input type="checkbox"/></p> <p>Natural mother <input type="checkbox"/></p> <p>Natural father <input type="checkbox"/></p> <p>Neither natural parents <input type="checkbox"/></p> <p>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.</p>

3. Intellectual performance

Intellectual Performance at 5	<p>Copying Designs Test</p> <p>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.</p> <p>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).</p> <p>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:</p> <ol style="list-style-type: none"> 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. <p>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.</p>
Intellectual Performance at 10	<p>British Ability Scales (BAS) total score at 10. (c. 1980 – Educational Tests administered by teachers, but self-completed by child).</p> <p>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.</p> <p>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.</p>

4. Good conduct

Good conduct at 5	<p>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).</p> <p>Very restless. Often running about or jumping up and down. Hardly ever still.</p> <p>Doesn’t apply (=0) <input type="checkbox"/></p> <p>Applies somewhat (=0.5) <input type="checkbox"/></p> <p>Certainly applies (=1) <input type="checkbox"/></p> <p>Is squirmy or fidgety.</p> <p>Doesn’t apply (=0) <input type="checkbox"/></p> <p>Applies somewhat (=0.5) <input type="checkbox"/></p> <p>Certainly applies (=1) <input type="checkbox"/></p> <p>Often destroys own or others’ belongings.</p> <p>Doesn’t apply (=0) <input type="checkbox"/></p> <p>Applies somewhat (=0.5) <input type="checkbox"/></p> <p>Certainly applies (=1) <input type="checkbox"/></p>
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	<p>Frequently fights with other children. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Not much liked by other children. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Sometimes takes things belonging to others. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Is often disobedient. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Cannot settle to anything for more than a few moments. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Often tells lies. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Bullies other children. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>To calculate Good conduct at 5, we calculate the total score from all 10 of the above questions.</p>
Good conduct at 10	<p>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 your 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).</p> <p>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</p> <p>To calculate Good conduct at 10, we calculate the total score from all 18 of the above questions.</p>

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)

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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)

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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)

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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)

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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)

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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)

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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 (=0.66)

Yes, severe (=1)

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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)

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☐

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)

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Does child ever wet his/her pants in the daytime?

Yes (=1)

No (=0)

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☐

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)

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Does child soil or ever make a mess in his/her pants?

Yes (=1)

No (=0)

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☐

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)

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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)

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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)

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☐
☐
☐

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”.

	<p>Often worried, worries about many things: Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Tends to do things on his own – rather solitary Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Irritable. Is quick to “fly off the handle” Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Often appears miserable, unhappy, tearful or distressed. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Tends to be fearful or afraid of new things or new situations. Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>Is fussy of over particular Doesn't apply (=0) <input type="checkbox"/> Applies somewhat (=0.5) <input type="checkbox"/> Certainly applies (=1) <input type="checkbox"/></p> <p>To calculate the emotional health at 5 we calculate the total score from all 28 of the above questions.</p>
Emotional health at 10	<p>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).</p> <p>Complains of headaches Never in the last 12 months (=0) <input type="checkbox"/> Less than one a month (=0.33) <input type="checkbox"/> At least once a month (=0.66) <input type="checkbox"/> At least once a week (=1) <input type="checkbox"/></p> <p>Complains of stomach ache or has vomited Never in the last 12 months (=0) <input type="checkbox"/> Less than one a month (=0.33) <input type="checkbox"/> At least once a month (=0.66) <input type="checkbox"/> At least once a week (=1) <input type="checkbox"/></p> <p>Tears on arrival at school? No (=0) <input type="checkbox"/> Yes once or twice a week (=0.33) <input type="checkbox"/> Yes no information (=0.66) <input type="checkbox"/> Yes every day (=1) <input type="checkbox"/></p> <p>Truants from school? No (=0) <input type="checkbox"/> Yes once or twice a week (=0.33) <input type="checkbox"/> Yes no information (=0.66) <input type="checkbox"/> Yes every day (=1) <input type="checkbox"/></p> <p>Frequency of bed wetting at night? Every night (=1) <input type="checkbox"/> Most nights (=0.75) <input type="checkbox"/> Occasionally (at least once a week) (=0.50) <input type="checkbox"/> Very occasionally (less than once a week) (=0.25) <input type="checkbox"/> Not stated how often (=0.25) <input type="checkbox"/> Not known to wet the bed (=0) <input type="checkbox"/></p> <p>Frequency of day wetting? Every day (=1) <input type="checkbox"/> Most days (=0.75) <input type="checkbox"/> Occasionally (at least once a week) (=0.50) <input type="checkbox"/> Very occasionally (less than once a week) (=0.25) <input type="checkbox"/> Not stated how often (=0.25) <input type="checkbox"/> Not known to wet pants (=0) <input type="checkbox"/></p> <p>Frequency that child soils his pants or makes a mess in his pants? Every day (=1) <input type="checkbox"/> Most days (=0.75) <input type="checkbox"/> Occasionally (at least once a week) (=0.50) <input type="checkbox"/> Very occasionally (less than once a week) (=0.25) <input type="checkbox"/> Not stated how often (=0.25) <input type="checkbox"/></p>

	<p>Not known to wet pants (=0) <input type="checkbox"/></p> <p>Does child have any eating or appetite problems?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>If yes, is it:</p> <p>Not eating enough?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Overeating?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>Faddiness?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>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.</p> <p>Does your child have any sleeping difficulty?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>If yes, which of the following difficulties does he/she have?</p> <p>Difficulty “getting off to sleep”?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>“Waking during the night”?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>“Waking early in the morning”?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>“Nightmares or night terrors”?</p> <p>Yes (=1) <input type="checkbox"/></p> <p>No (=0) <input type="checkbox"/></p> <p>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.</p> <p>Often worried, worries about many things:</p> <p>Tends to do things on his own – rather solitary</p> <p>Irritable. Is quick to “fly off the handle”</p> <p>Often appears miserable, unhappy, tearful or distressed.</p> <p>Tends to be fearful or afraid of new things or new situations.</p> <p>Is fussy or over particular</p> <p>Is sullen or sulky</p> <p>Cries for little cause</p> <p>To calculate the emotional health at 10 we calculate the total score from all 24 of the above questions.</p>
Emotional health at 16	<p>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).</p> <p>Often worried, worries about many things:</p> <p>Doesn’t apply (=0) <input type="checkbox"/></p> <p>Applies somewhat (=0.5) <input type="checkbox"/></p> <p>Certainly applies (=1) <input type="checkbox"/></p> <p>Tends to do things on his own – rather solitary</p> <p>Doesn’t apply (=0) <input type="checkbox"/></p>

Applies somewhat (=0.5)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
Irritable. Is quick to "fly off the handle"	
Doesn't apply (=0)	<input type="checkbox"/>
Applies somewhat (=0.5)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
Often appears miserable, unhappy, tearful or distressed.	
Doesn't apply (=0)	<input type="checkbox"/>
Applies somewhat (=0.5)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
Tends to be fearful or afraid of new things or new situations.	
Doesn't apply (=0)	<input type="checkbox"/>
Applies somewhat (=0.5)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
Is fussy of over particular	
Doesn't apply (=0)	<input type="checkbox"/>
Applies somewhat (=0.5)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
<p>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).</p>	
Is sullen or sulky	
Never (=0)	<input type="checkbox"/>
Rarely (=0.33)	<input type="checkbox"/>
Some of the time (=0.66)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
Cries for little cause	
Never (=0)	<input type="checkbox"/>
Rarely (=0.33)	<input type="checkbox"/>
Some of the time (=0.66)	<input type="checkbox"/>
Certainly applies (=1)	<input type="checkbox"/>
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)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you feel tired?	
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you feel miserable or depressed?	
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you have headaches?	
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do things worry you?	
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you have great difficulty sleeping?	
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you wake unnecessarily early in the morning?	
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>

Do you wear yourself out worrying about your health?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you ever get in a violent rage?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do people annoy and irritate you?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Have you at times a twitching of the face, head or shoulders?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you suddenly become scared for no good reason?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Are you scared if alone?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Are you easily upset or irritated?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Are you frightened of going out alone or meeting people?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Are you keyed up and jittery?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you suffer from indigestion?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you suffer from upset stomach?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Is your appetite poor?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Does every little thing get on your nerves and wear you out?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Does your heart race like mad?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>
Do you have bad pains in your eyes?	<input type="checkbox"/>
Rarely or never (=0)	<input type="checkbox"/>
Some of the time (=0.50)	<input type="checkbox"/>
Most of the time (=1)	<input type="checkbox"/>

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.
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