Measuring social origin, cognitive ability and educational attainment in the 1970 British Cohort Study (BCS70)

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1   Introduction

This data note was prepared for the research project on *Social Origins, Cognitive Ability and Educational Attainment: A Birth Cohort and Life-Course Perspective*. The document will present descriptive statistics for the key variables in the British Cohort Study (BCS70) data that of relevance the project. The main independent variables are measures of respondents' cognitive ability in childhood and the parental education, class, status and income. The key dependent variables are measures of respondents' highest qualification completed and measures indicating whether respondents have crossed certain educational qualification thresholds, especially whether they have completed A-levels and whether they have completed a higher education qualification. Furthermore, the research project aims to use measures of respondents' performance at Key Stage 4 (GCSEs) and Key Stage 5 to identify the relative importance of primary and secondary effects of parental background on respondent's educational attainment.

Section 2 will provide a brief introduction to the BCS70 dataset, including information on the size of the sample for analysis; a description is provided of the amount of missing data on each variable and the resulting final number of valid cases. Sections 3–6 will examine each of the dimensions of social origin in turn and describe their distributions. Section 7 will describe the distribution of respondents' cognitive ability in the sample, while Section 8 focuses on respondents' educational attainment. Sections 9 through 12 will use cross-tabulations and correlations to present the associations between the above measures.

2   The British Cohort Study 1970

The 1970 British Cohort Study (BCS70) is a longitudinal study which began collecting data on 17,198 babies born in England, Scotland, Wales and Northern Ireland in a particular week in April 1970 (specifically, from 00.01 hours on Sunday, 5th April to 24.00 hours on Saturday, 11th April, 1970). It was estimated that not more than five percent and not less than two percent of the births during this week in in England, Scotland, Wales and Northern Ireland have been missed and are therefore not present in the survey.

After the initial birth survey, Northern Irish participants were dropped from the sample. The surveys at ages 5 and 10 augmented their samples by adding immigrants born in the same week. Consequently, the sample only includes immigrants who moved to Britain before the age of 16, as there were no attempts to include further members beyond the age 16 survey in 1986. Since the birth survey in 1970, there have been eight 'sweeps' of all cohort members at ages 5, 10, 16, 26, 30, 34, 38 and 42. The most recent sweep of the BCS70 was conducted in 2012-2013. CLS will carry out new surveys of the BCS70 cohort at age 46 in 2016, and age 50 in 2020. With each successive sweep of data collection, the scope of enquiry has broadened from a strictly medical focus at birth, to encompass physical and educational development at the age of five, physical, educational and social development.

At each sweep, different sources and methods were used to gather information on the cohort members. In the birth survey, the midwife present at the birth completed a questionnaire and supplementary information was obtained from clinical records. As the cohort members got older, the tools and information gathered changed. Health Visitors interviewed the parents, teachers completed questionnaires, medical examinations were carried out, and cohort members themselves participated in educational assessments. In certain sweeps, cohort members have also kept nutrition and activity diaries.

Table 1 shows the development of the number of participants across the different waves of data collection. Note that a large share of the reduction in the sample size between Wave 1 and Wave 2 may be due to the exclusion of individuals born in Northern Ireland after the first sweep of data collection (see introduction). The descriptive statistics presented in this data note were calculated without applying weights. The documentation for Wave 3 from which information on parental characteristics was taken concludes that the achieved sample in 1980 does not differ greatly from the birth sample in 1970 with respect to several key characteristics (pp. 125-27).

Table 1. BCS70 Sample Size across Waves

Wave	Year	Age	N
Wave 1	1970	0	17,196
Wave 2	1975	5	13,135
Wave 3	1980	10	14,875
Wave 4	1986	16	11,622
Wave 5	1996	26	9,003
Wave 6	1999-2000	30	11,261
Wave 7	2004-2005	34	9,665
Wave 8	2008-2009	38	8,874
Wave 9	2012-2013	42	9,841
Wave 10	2016	46	N/A
Wave 11	2020	50	N/A

Table 2. Missingness on Key Variables

	Per Variable: Missing		Cumulative: Missing		Cumulative: Remaining	
	N	**%**	**N**	**%**	**N**	**%**
Overall BCS70 sample at Wave 3 (Age 10)	——	100.00%	——	100.00%	14875	100.00%
Cognitive Ability	3480	23.39%	3480	23.39%	11395	76.61%
Highest qualification (At age 34)	3681	24.75%	0	23.39%	11395	76.61%
Parental class (Reduced method)	1730	11.63%	848	29.10%	10547	70.90%
Parental status (Chan/Goldthorpe)	1730	11.63%	0	29.10%	10547	70.90%
Parental education (Composite Measure)	1414	9.51%	0	29.10%	10547	70.90%

*Notes:*6581 further cases are missing information on parental income, reducing the final sample size to 3966 for analyses involving this measure.

3   Parental Social Class

Two sets of measures of parental class were generated using the BCS70 Data. The construction of the first set of parental social-class variables first involved allocating SOC90 codes to mothers and fathers based on the OPCS Classification of Occupations 1980 (CO80) codes given in the original data. The CO80 occupational group codes were taken from Wave 3 (1980), i.e. when children were 10 years old. Based on the information on parents' SOC90 and on parents' employment status, NS-SEC conversion tables (full method, reduced method and simplified method) were used to allocate fathers and mothers to a social class position within NS-SEC.[1] A set of variables was generated indicating the social class position of fathers and mothers in terms of the full method, the reduced method and the simplified method. Table 3 displays the distribution of social class for mothers and fathers using the reduced method.

Table 3. Distribution of Mothers' and Fathers' Social Class based on SOC90 derived from OUG80 (Reduced Method)

	Mothers		Fathers	
	%	**N**	**%**	**N**
1. Higher managerial	1.1	81	12.02	1,113
2. Lower managerial	16	1,178	18.68	1,730
3. Intermediate	21.47	1,581	5.78	535
4. Small employers	6.57	484	14.33	1,327
5. Lower supervisory	5.2	383	19.7	1,824
6. Semi routine	22	1,610	11.25	1,042
7. Routine	28	2,046	18.24	1,689
Missing	—	4,774	—	2,877
Total	100	12,137	100	12,137

The dominance method was then used to construct the parental social-class measure. Following the approach adopted by Bukodi and Goldthorpe (2013: 14), 'husband's class is taken to dominate wife's class unless the latter is higher in the ordering of the classes as 1, 2, 3–5, 6, 7, in which case wife's class dominates'. Importantly no adjustment could be made based on fathers or mothers being in part-time or full-time work due to lacking information on this dimension of parents' work. Table 4 shows the distribution of the parental social-class variable. For comparative purposes it gives the distribution of the parental class variables using the simplified, reduced and full method.

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[1] For further information on the simplified, reduced and full method of allocating individuals to NS-SEC classes based on their occupational information see Office for National Statistics (2005) *The National Statistics Socio-Economic Classification: User Manual.* Palgrave: Newport (available online).

Table 4. Distribution of Parental Social Class based on SOC90 derived from OUG80

	Simplified Method		Reduced Method		Full Method	
	%	**N**	**%**	**N**	**%**	**N**
1. Higher managerial	11.22	1,133	11.45	1,156	9.95	1,005
2. Lower managerial	21.08	2,129	22.69	2,292	24.8	2,505
3. Intermediate	12.52	1,265	8.87	896	8.84	893
4. Small employers	11.65	1,177	12.97	1,310	12.46	1,258
5. Lower supervisory	15.39	1,554	18.26	1,844	18.24	1,842
6. Semi routine	15.02	1,517	12.76	1,289	12.71	1,284
7. Routine	13.12	1,325	13	1,313	13	1,313
Missing	—	2,037	—	2,037	—	2,037
Total	100	12,137	100	12,137	100	12,137

A second set of measures for parental class was then generated using SOC2000 codes of fathers' and mothers' occupation supplied by Tim Morris as part of the ESRC Project 'An examination of the impact of family socio-economic status on outcomes in late childhood and adolescence' (ESRC Grant: RES-060-23-0011) led by Paul Gregg. As part of this project the questionnaire response text strings in the BCS70 and NCDS data were processed using the CASCOT (Computer Assisted Structured Coding Tool) programme to assign Standard Occupational Classification 2000 codes (SOC2000) and Standard Occupational Classification 90 (SOC90) codes to entries. Please see the Data Note prepared by Tim Morris on this procedure for further details.[2] Using the SOC2000 codes supplied by Paul Gregg and using detailed information on mothers' and fathers' employment status, the simplified, reduced and full method were used to generate measures of parental class. Table 5 shows the distribution of the reduced measure for mothers and fathers.

Table 5. Distribution of Fathers' and Mothers' Social Class based on SOC2000 provided by Paul Gregg (Reduced Method)

	Mothers		Fathers	
	%	**N**	**%**	**N**
1. Higher managerial	1.57	116	11.31	1,057
2. Lower managerial	13.76	1,017	17.63	1,648
3. Intermediate	21.22	1,568	6.06	566
4. Small employers	6.29	465	14.36	1,342
5. Lower supervisory	4.3	318	20.1	1,879
6. Semi routine	25.27	1,867	11.82	1,105
7. Routine	27.58	2,038	18.71	1,749
Missing	—	4,748	—	2,791
Total	100	12,137	100	12,137

The dominance method was then used to construct the parental social-class measure. In addition to the simplified, reduced and full method of allocating individuals to NSSEC an alternative approach was used. First, all individuals were allocated to NS-SEC classes *as if they were employees*, using their SOC2000 codes. In a second step, a dummy variable indicating self-employment was used to reallocate individuals who are coded as self-employed. In a third step, individuals for whom no information is available on whether they

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are self-employed or not were reallocated using the simplified method of allocating individuals to NS-SEC classes. The distribution of this third measure of parental class is shown in Table 6, which also shows the measure of parental NSSEC that was included in the data set provided by Paul Gregg,

Table 6. Distribution of Parental Social Class based on SOC2000 provided by Paul Gregg – Parents (dominance approach)

	Paul Gregg Variable		Simplified Method		Reduced Method		Full Method		Alternative Method	
	%	N	%	N	%	N	%	N	%	N
1. Higher managerial	11.47	1,158	11.47	1,158	11.18	1,129	10.16	1,026	11.41	1,152
2. Lower managerial	18.54	1,873	18.54	1,873	21.24	2,145	22.81	2,304	20.06	2,026
3. Intermediate	12.72	1,285	12.72	1,285	9.24	933	9.22	931	13.17	1,330
4. Small employers	12.27	1,239	12.27	1,239	12.96	1,309	12.44	1,256	8.88	897
5. Lower supervisory	15.33	1,548	15.33	1,548	18.61	1,880	18.6	1,879	13.08	1,321
6. Semi routine	16.22	1,638	16.22	1,638	13.69	1,383	13.69	1,383	17.7	1,788
7. Routine	13.46	1,359	13.46	1,359	13.08	1,321	13.08	1,321	15.7	1,586
Missing	—	2,037	—	2,037	—	2,037	—	2,037	—	2,037
Total	100	12,137	100	12,137	100	12,137	100	12,137	100	12,137

For comparative purposes, Table 7 shows the distribution of a selection of the measures of parental class described above in direct comparison to the distribution of parental class shown in Bukodi and Goldthorpe (2013).

Table 7. Distribution of Different Measures of Parental Social Class (%)

	Based on SOC90/ reduced method	Based on SOC2000/ reduced method	Based on SOC2000/ alternative method	Bukodi & Goldthorpe (2013)
1. Higher managerial	11.45	11.18	11.41	11.9
2. Lower managerial	22.69	21.24	20.06	20.7
3. Intermediate	8.87	9.24	13.17	8.7
4. Small employers	12.97	12.96	8.88	12.6
5. Lower supervisory	18.26	18.61	13.08	18.4
6. Semi routine	12.76	13.69	17.7	11.2
7. Routine	13	13.08	15.7	16.5
Total	100	100	100	100

4   Parental Status

As is the case for the construction of the parental social class variables, for the construction of the parental status variables information from Wave 3 (1980) is used, i.e. when children were 10 years old. Two measures of parental status have been constructed. The first is based on the Chan–Goldthorpe (CG) status order (Chan and Goldthorpe, 2004). Mothers' and fathers' Chan–Goldthorpe (CG) status scores were derived from their respective SOC90 codes. The measure has been normalized to a 0 to 1 scale using the minimum and maximum of -0.6 and +0.6. Figure 1 illustrates the distribution of mothers' and fathers' CG status scores.

Figure 1. Boxplot Distribution of Mothers' and Fathers' CG Status Scores (normalised using theoretical max/min)
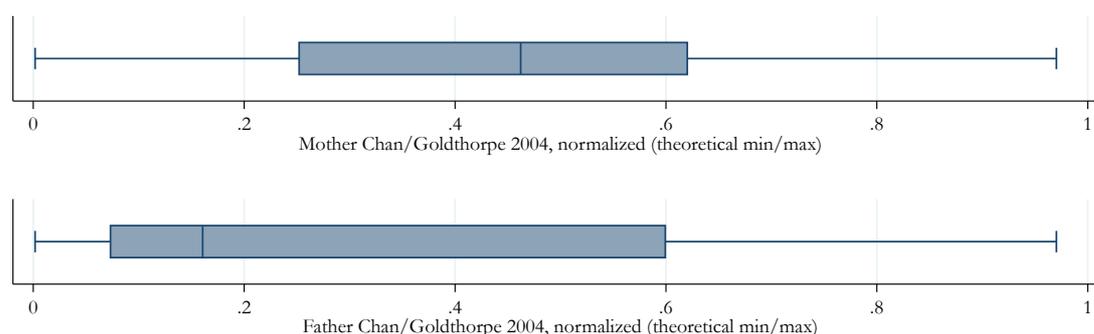
Mothers' mean CG status score is 0.45 (Std. Dev. = 0.25) compared with fathers' mean score of 0.33 (Std. Dev. = 0.31). Surprisingly, mothers tend to occupy a higher social position than fathers. This is also the case in the LSYPE data (see LSYPE Data Note). Table 8 presents the frequencies of mothers' and fathers' CG social status scores grouped into quartiles.

A parental social status variable was then constructed by taking the highest status score between the mother and the father. In instances where one was missing, the non-missing score was assigned using the modal value in the overall distribution. The quartiles for this variable are given in Table 8. The mean score for parental status is 0.46 with standard deviation 0.29.

Table 8. Distribution of Mothers', Fathers' and Parental CG Social Status Scores (Quartiles)

	Mothers' Social Status		**Fathers' Social Status**		**Parental Social Status**	
	%	**N**	**%**	**N**	**%**	**N**
1st Quartile	35.9	3,409	28.6	3,418	25.3	3,326
2nd Quartile	14.27	1,355	26.15	3,126	25.55	3,359
3rd Quartile	25.4	2,412	21.28	2,543	26.06	3,426
4th Quartile	24.42	2,319	23.97	2,865	23.08	3,034
Missing		5,380		2,923		1,730
Total	100	14,875	100	14,875	100	14,875

The second parental status variable is based on the CAMSIS scale. This provides two separate scales for men and women, assuming that social hierarchies vary according to gender. Mothers' and fathers' CAMSIS status scores were derived from their respective SOC90 codes using the conversion table. The measures have been normalized to a 0 to 1 scale using the minimum and maximum of 0 and 100. Figure 2 illustrates the distribution of mothers' and fathers' CAMSIS scores. Mothers' mean CAMSIS status score

is 0.46 (Std. Dev. = 0.13) compared with fathers' mean score of 0.47 (Std. Dev. = 0.14). Using this alternative measure, therefore, fathers and mothers are found to have a very similar level of social status.

Figure 2. Boxplot distribution of Mothers' and Fathers' CAMSIS Status Scores (normalized using observed max/min)
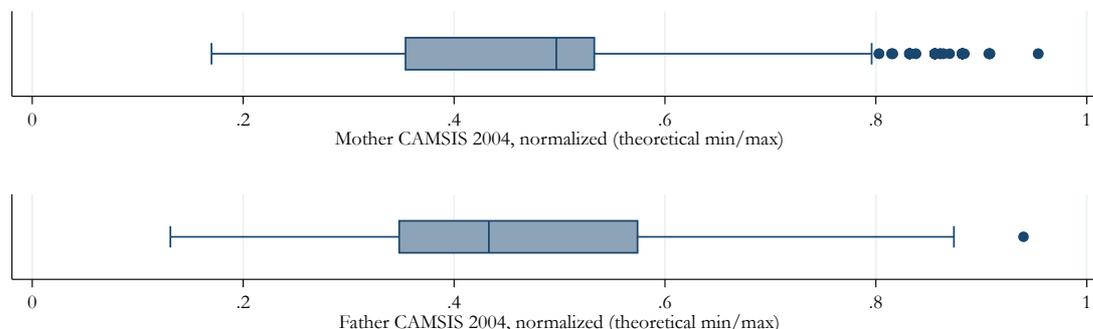
Table 9 presents the quartiles and frequencies taken from the original interval-scale variables, and also gives parental CAMSIS status which has been derived using the dominance approach. The mean score for parental status is 0.50 with standard deviation 0.14.

Table 9. Distribution of Mothers', Fathers' and Parental CAMSIS Social Status Scores (Quartiles)

	Mothers' Social Status		Fathers' Social Status		Parental Social Status	
	%	N	%	N	%	N
1st Quartile	26.52	2,518	25	2,988	25.39	3,337
2nd Quartile	31.74	3,014	25.11	3,001	25.28	3,323
3rd Quartile	23.39	2,221	25.46	3,043	26.2	3,444
4th Quartile	18.35	1,742	24.43	2,920	23.13	3,041
Missing		5,380		2,923		1,730
Total	100	14,875	100	14,875	100	14,875

Table 10 presents Pearson's correlations between the normalised measures of CG and CAMSIS social status described above.

Table 10. Pearson's Correlations: Mothers', Fathers' and Parental Status Scores (CG and CAMSIS)

	Mother (CG)	Mother (CAM)		Father (CG)	Father (CAM)
Mother (CG)	1.00		Father (CG)	1.00	
Mother (CAM)	0.89***	1.00	Father (CAM)	0.87***	1.00

	Mother (CG)	Father (CG)		Mother (CAM)	Father (CAM)
Mother (CG)	1.00		Mother (CAM)	1.00	
Father (CG)	0.37***	1.00	Father (CAM)	0.45***	1.00

	Parents' Status (CG)	Parents' Status (CAM)
Parents' Status (CG)	1.00	
Parents' Status (CAM)	0.88***	1.00

*** p<0.001

5   Parental Education

As is the case for the construction of the parental social class variables and the parental status variables, for the construction of the parental education variables information from Wave 3 (1980) is used, i.e. when children were 10 years old. To minimize missingness, information from a categorical variable as well as a set of dummy variables containing information on the educational attainment of fathers and mothers was used. The level of detail given by these variables allows for a five category variable (see Table 11). This categorization is less fine-grained than the eight category classification used in Bukodi and Goldthorpe (2013), as no differentiation can be made within the O-level category, the A-level category and the Degree category. Details on how the qualifications given in the original variable were reallocated to the present categories are given in the Appendix. The coding routine adopted by Ferdinand Eibel was followed with regards to allocating trade apprentice qualifications to the O-level category. Non-specified qualifications marked as 'other' in the source variable where coded as missing.

The distributions of fathers' and mothers' educational qualifications according to this classification are presented in Table 11. It should be noted that a large proportion of parents (about 39% of fathers and 54% of mothers) is shown to have obtained no educational qualification. This number was double checked and corresponds to the values of the source variable (dummy variable c1_9: Father's qualifications: No qualifications), as well as with the distribution found in Bukodi and Goldthorpe (2013). The distribution of the parental education variable using the dominance approach is given in Figure 3 below.

Table 11. Fathers' and mothers' Highest Educational Qualifications

	Fathers		Mothers	
	%	N	%	N
1. No qualifications	38.78	4,759	53.53	6,841
2. O-level / Trade apprentice	36.12	4,433	33.87	4,329
3. A-level	9.37	1,150	3.94	503
4. Sub-degree qualification	2.96	363	5.74	734
5. Degree	12.77	1,567	2.92	373
Missing		2,603		2,095
Total	100	14,875	100	14875

Figure 3. Distribution of Parental Education (Dominance Approach)
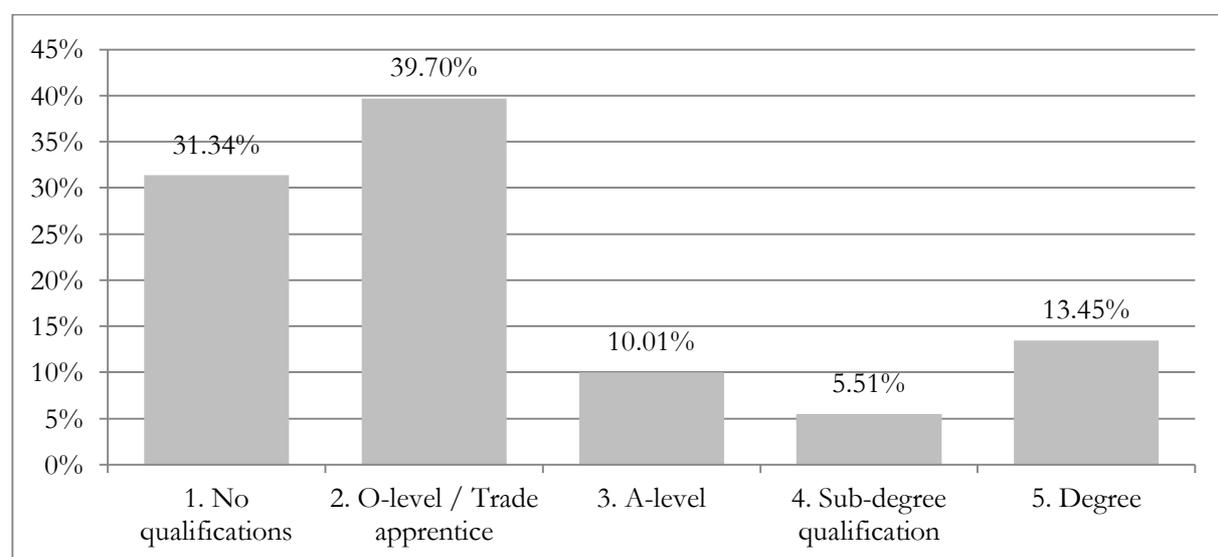
An alternative is to create a combined parental education variable, reflecting the approach taken by Bukodi and Goldthorpe (2013). Information from both parents is incorporated into this composite measure, as reflected in the following categories:

1. Neither parent has any qualification
2. One parent has secondary or lower qualification; other parent has no qualification
3. Both parents have secondary or lower qualification
4. One parent has higher secondary or lower tertiary qualification; other parent has lower qualification
5. Both parents have higher secondary or lower tertiary qualification
6. One parent has degree-level qualification; other parent has lower qualification
7. Both parents have degree-level qualifications

This method requires a plausible assumption to be made regarding missing values if educational information is only available for one parent. For the generation of the composite parental education variable it was assumed that the value of the missing parent equals the modal value for partners corresponding to the valid category. Table 12 shows the distributions for the generated composite parental education measure in comparison with the measure generated by Bukodi and Goldthorpe (2013) with the BCS70 data. As can be seen, there are some differences particularly with regard to categories 2 and 3.

Table 12. Parental Education: Composite measure, BSC70

	Generated variable	Bukodi & Goldthorpe 2013
1. Neither parent has any qualification	33.42%	33.30%
2. One parent has secondary or lower qualification; other parent has no qualification	19.48%	25.60%
3. Both parents have secondary or lower qualification	19.71%	13.60%
4. One parent has higher secondary or lower tertiary qualification; other parent has lower qualification	11.82%	13.30%
5. Both parents have higher secondary or lower tertiary qualification	2.33%	2.30%
6. One parent has degree-level qualification; other parent has lower qualification	11.09%	10.00%
7. Both parents have degree-level qualifications	2.15%	1.80%

To allow for meaningful cross-cohort comparison of educational attainment, it is useful to treat education in relative terms. To this end scores can be assigned to each category of the composite measure of parental education according to the percentage of parents falling below that level in the cumulative distribution (Bukodi and Goldthorpe, 2013). Table 13 presents the distribution of this relative scale, split into two variables: the first has seven levels and the second has four levels. For the remainder of this data note, the composite measure of parental education is used when parents' educational attainment is referred to.

Table 13. Parental Education: Scores of relative scale (% falling below given educational level), BCS70

7 levels	4 levels	Generated variable	Bukodi & Goldthorpe 2013
1	1	0	0
2	2	33.42	32.6
3		52.9	58.4
4	3	72.61	72.2
5		84.43	85.6
6	4	86.75	87.9
7		97.85	98.1
Mean level (7 levels)		0.401	0.389
Standard deviation (7 levels)		0.333	0.326

The mean educational level is calculated by normalising the relative scale variable so that values are within the range 0–1. It should be compared to those found in Bukodi and Goldthorpe (2013) using the earlier cohorts and to the values found for the respondents of the LSYPE survey (born in 1989/1990), listed below.

1946 Cohort: Mean 0.306, Standard deviation 0.371 (Bukodi and Goldthorpe 2013)

1958 Cohort: Mean 0.363, Standard deviation 0.340 (Bukodi and Goldthorpe 2013)

1989/1990 Cohort (LSYPE): Mean 0.400, Standard deviation 0.332

6   Parental Income

The income variable in BCS70 is taken from the age 16 follow-up sweep (1986) and provides information on the combined gross income of the child's mother and father. Respondents were explicitly asked to exclude child benefit, but to include all other earned and unearned income before deductions for tax, national insurance, and so on. Responses were given as either weekly or annual sums. The original variable contained 11 income bands, from which the mid-points were taken. For the top income band (£500+), a value of 525 was assigned (this ensured that the amounts increased in equal increments). For each case separately, information on lone-parent status, as well as number of siblings, was used to derive a measure of household composition; this then determined the amount of child benefit entitlement for parents in the year 1986.[3] The mid-band income and child benefit entitlement amounts were then summed, resulting in a variable with 129 unique income values. Table 14 provides a summary of the variable. Table 15 gives further detail, breaking the distribution down by deciles.

Table 14. BCS70 Constructed Income Variable

Valid N	Mean (SD)	Median	Min	Max
6386	228.04 (122.29)	196.30	32.1	567.6

Using data from the Effects of Taxes and Benefits on Household Income Survey for the year 1986, summary statistics for gross weekly income are very similar to those reported here:
Mean (SD):   223.74 (191.62)
Median: 182.56

Table 15. BCS70 Constructed Income Variable Deciles

Percentile		Percentile	
10	89.2	60	239.2
20	132.1	70	282.1
30	143.8	80	332.1
40	186.7	90	396.3
50	196.3	100	567.6

Figure 4 presents the frequency distribution of the raw values of the variable and the percentile distribution of the log-transformed values.

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[3] Source: http://www.ifs.org.uk/ff/childben.xls

Figure 4. Frequency Distribution (Raw Values) and Percentile Distribution (Log-transformed Values)
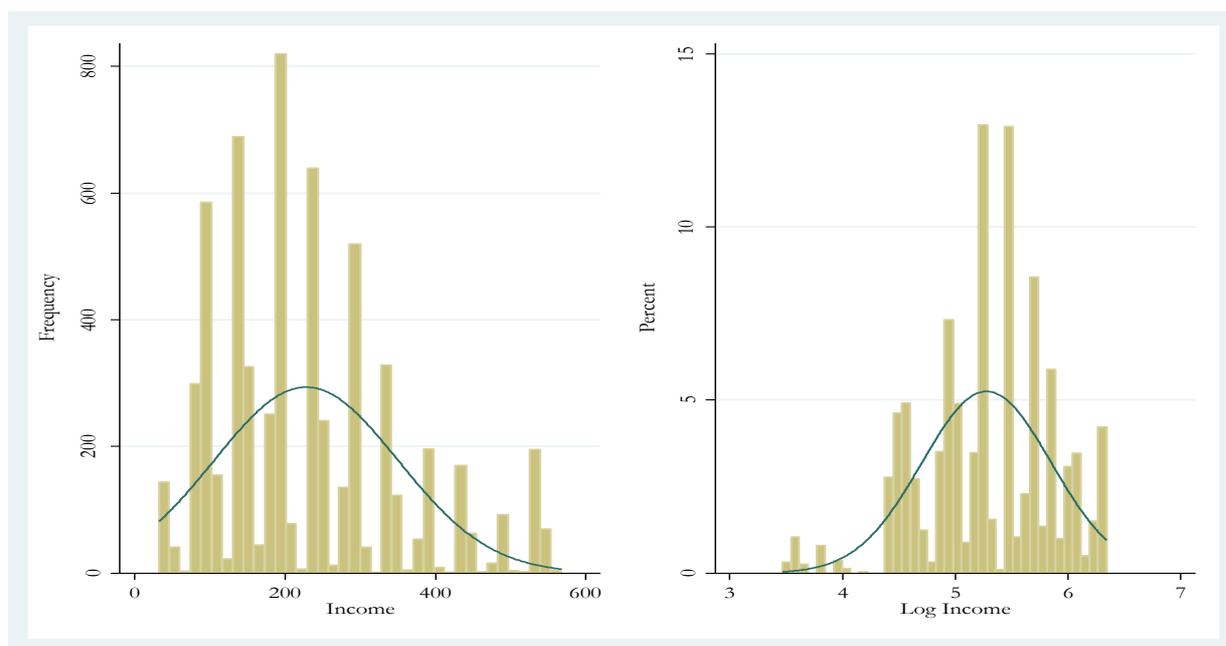
When the parental income variable is transformed to a 0–1 scale, the measure has a mean of 0.37 with standard deviation 0.23 (N=6386).

7   Cognitive Ability

A modified version of the British Ability Scales (BAS) was administered to BCS70 respondents at age 10, yielding a number of variables with information on scores for each item of each subtest. This information is used to construct the cognitive ability measure, following, as closely as possible, the approach taken by Schoon (2010; 2008) and Bukodi et al (2014). Four BAS subtests are considered: Word Definitions (consisting of 37 individual items), Recall (consisting of 34 individual items), Word Similarities (consisting of 42 paired items) and Matrices (consisting of 28 individual items). For each individual item, cases coded 'no questionnaire' (-6), 'not stated' (-3) or 'no response' (9) were set to missing, those with a correct response (1) were given a value of 1 and those with an incorrect response (2) were given a value of 0. Questions in the Word Similarities subtest were posed in two parts; for these paired items, cases were given a value of 1 if they correctly answered both parts, and a value of 0 if they answered either one or both parts incorrectly.[4]

The items were then summed to derive an overall score for each of the subtests, and a Principal Components Analysis (PCA) was subsequently run on these four measures. Scores from the first unrotated component extracted were saved for each case, thus providing a measure of each child's cognitive ability – otherwise termed 'g'. The first principal component score accounted for 58% of the total variance across the four measures. Table 16 presents the factor loadings. 3,480 of the original 14,875 cases are missing information on this measure.

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[4] See file:///C:/Users/BourneM/Downloads/British%20Ability%20Scale%20Totals%20(1).pdf from the Centre for Longitudinal Studies (CLS) website, which recommends treating the measures in this way.

Table 16. PCA to Derive Cognitive Ability Measure

PCA					New Variable			
Eigenvalue	Loading				% of variance	Min	Max	Mean (SD)	N
	Word Def	Recall	Word Sim	Matrices					
2.31	0.55	0.39	0.55	0.49	58%	-5.64	5.13	0.00 (1.52)	11,395

Figure 5 presents the percentile distribution of the cognitive ability variable. Table 17 presents quintiles.

Figure 5. Distribution of Cognitive Ability
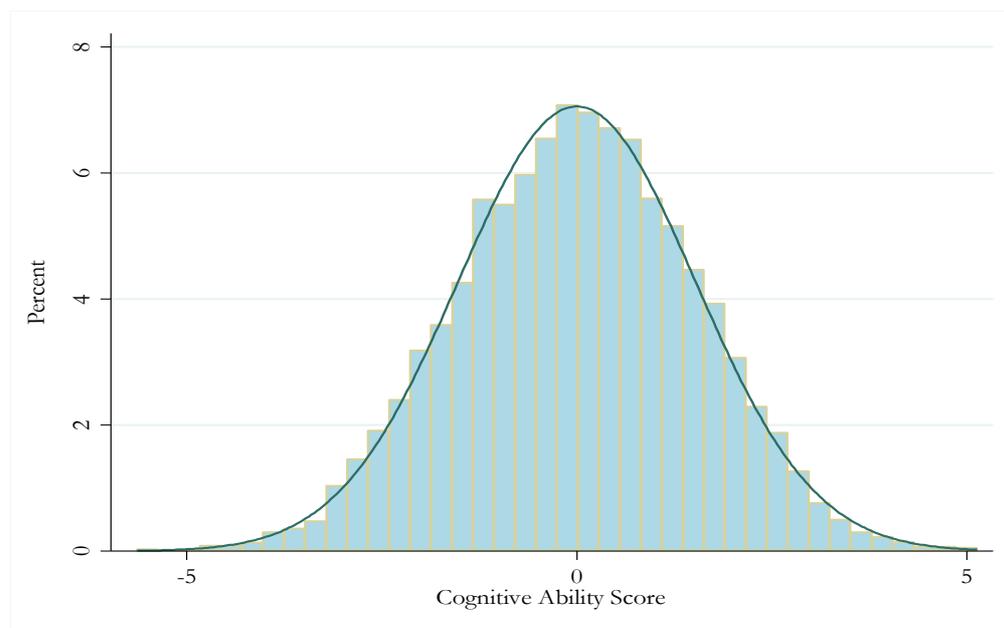
Table 17. Quintiles of Cognitive Ability

	%	N
1st Quintile (Lowest)	20	2279
2nd Quintile	20	2279
3rd Quintile	20	2279
4th Quintile	20	2280
5th Quintile (Highest)	20	2278
Missing	--	3480
Total	100	14875

8   Respondent Educational Attainment

This section provides an overview of the key aspects of respondent's educational attainment that will be used in the analysis for the research project. In order to allow for comparison with the other data notes compiled for the project, the descriptives for respondent educational attainment are shown for both age 20 and age 38. Table 18 and Table 19 report the distribution of the measure of the highest level of education achieved by age 20 and 38.

Table 18. Highest educational qualification at age 20

	%	N
[1] No qualifications	24.28	2,947
[2] Below O-level, NVQ 1 [Sub-secondary]	8.22	998
[3] 1–4 O-level passes, NVQ 2 [Secondary—low performance]	21.55	2,616
[4] 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high perf.]	25.62	3,110
[5] 2+ A-level passes [Higher secondary]	13.85	1,681
[6] Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]	6.43	780
[7] Degree, NVQ5 or 6, higher degree [Higher tertiary]	0.04	5
Missing		0
Total		12,137

Table 19. Highest educational qualification at age 38

	%	N
[1] No qualifications	14.07	1,708
[2] Below O-level, NVQ 1 [Sub-secondary]	7.62	925
[3] 1–4 O-level passes, NVQ 2 [Secondary—low performance]	20.86	2,532
[4] 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high performance]	21.04	2,554
[5] 2+ A-level passes [Higher secondary]	2.64	320
[6] Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]	14.49	1,759
[7] Degree, NVQ5 or 6, higher degree [Higher tertiary]	19.27	2,339
Missing		0
Total		12,137

Table 20 and 21 show the percentage of cohort members who have passed two or more A-Level qualifications by age 20 and 38 respectively. Table 22 and 23 show the percentage of cohort members who have passed two or more A-Level qualifications or the vocational equivalent by age 20 and 38 respectively. Table 24 cross-tabulates the level of educational qualification attained at age 20 and the measure for crossing the KS5 threshold by age 20.

Table 20. Passing of Threshold at Key Stage 5 by age 20 (academic only)

	%	N
No	81.68	9,914
Yes	18.32	2,223
Missing		0
Total	100.00	12,137

Table 21. Passing of Threshold at Key Stage 5 by age 38 (academic only)

	%	N
No	69.11	8,388
Yes	30.89	3,749
Missing		0
Total	100.00	12,137

Table 22. Passing of Threshold at Key Stage 5 by age 20 (academic & vocational)

	%	N
No	79.68	9,671
Yes	20.32	2,466
Missing		0
Total	100.00	12,137

Table 23. Passing of Threshold at Key Stage 5 by age 38 (academic & vocational)

	%	N
No	63.60	7,719
Yes	36.40	4,418
Missing		0
Total	100.00	12,137

Table 24. Crosstab of highest educational qualification at age 20 and passing of KS5 Threshold (academic and vocational)

	Transition to KS 5		
	No	Yes	Total
1. No qualifications	2,693	0	2,693
	100.00%	0.00%	100.00%
	44.51%	0.00%	24.06%
2. Below O-level, NVQ 1 [Sub-secondary]	909	0	909
	100.00%	0.00%	100.00%
	15.02%	0.00%	8.12%
3. 1–4 O-level passes, NVQ2 [Secondary—low performance]	2,448	0	2,448
	100.00%	0.00%	100.00%
	40.46%	0.00%	21.87%
4. 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high performance]	0	2,875	2,875
	0.00%	100.00%	100.00%
	0.00%	55.89%	25.68%
5. 2+ A-level passes [Higher secondary]	0	1,553	1,553
	0.00%	100.00%	100.00%
	0.00%	30.19%	13.87%
Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]	0	711	711
	0.00%	100.00%	100.00%
	0.00%	13.82%	6.35%
Degree, NVQ 5 or 6, higher degree [Higher tertiary]	0	5	5
	0.00%	100.00%	100.00%
	0.00%	0.10%	0.04%
Total	6,050	5,144	11,194
	54.05%	45.95%	100.00%
	100.00%	100.00%	100.00%

An additional measure was generated indicating whether cohort members have crossed the Higher Education threshold. Table 25 shows the proportion of individuals who have crossed the threshold by

age 38. Here the threshold is operationalized so that individuals with sub-degrees are not counted as having made the transition. Table 26 shows the distribution when the measure includes sub-degrees. Tables 27 and 28 show the proportion of individuals who have crossed the threshold, again including and excluding individuals with sub-degrees respectively, but also counting the vocational qualifications at the (sub-)degree level. Table 29 cross-tabulates the level of educational qualification attained at age 38 and the measure for crossing the Higher Education threshold by age 38 (excluding sub-degree).

Table 25. Transition to Higher Education by age 38 (academic only), excluding sub-degree

	%	N
No	81.21	9,857
Yes	18.79	2,280
Missing		0
Total	100.00	12,137

Table 26. Transition to Higher Education by age 38 (academic only), including sub-degree

	%	N
No	72.26	8,770
Yes	27.74	3,367
Missing		0
Total	100.00	12,137

Table 27. Transition to Higher Education by age 38 (academic & vocational), excluding sub-degree

	%	N
No	80.73	9,798
Yes	19.27	2,339
Missing		0
Total	100.00	12,137

Table 28. Transition to Higher Education by age 38 (academic & vocational), including sub-degree

	%	N
No	66.24	8,039
Yes	33.76	4,098
Missing		0
Total	100.00	12,137

Table 29. Crosstab of highest educational qualification at age 38 and transition to HE (academic & vocational), excluding sub-degree

	Transition to KS 5		
	No	Yes	Total
1. No qualifications	1,549	0	1,549
	100.00%	0.00%	100.00%
	17.13%	0.00%	13.84%
2. Below O-level, NVQ 1 [Sub-secondary]	850	0	850
	100.00%	0.00%	100.00%
	9.40%	0.00%	7.59%
3. 1–4 O-level passes, NVQ2 [Secondary—low performance]	2,361	0	2,361
	100.00%	0.00%	100.00%
	26.11%	0.00%	21.09%
4. 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high performance]	2,364	0	2,364
	100.00%	0.00%	100.00%
	26.14%	0.00%	21.12%
5. 2+ A-level passes [Higher secondary]	296	0	296
	100.00%	0.00%	100.00%
	3.27%	0.00%	2.64%
Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]	1,624	0	1,624
	100.00%	0.00%	100.00%
	17.96%	0.00%	14.51%
Degree, NVQ 5 or 6, higher degree [Higher tertiary]	0	2,150	2,150
	0.00%	100.00%	100.00%
	0.00%	100.00%	19.21%
Total	9,044	2,150	11,194
	80.79%	19.21%	100.00%
	100.00%	100.00%	100.00%

The measures of performance at Key Stage 4 is operationalized as the number of GCSE/O-Level/CSE qualifications attained at grades A*–C. The measure of performance at Key Stage 5 is operationalized as the number of A-levels passed. Both measures were generated using information from BCS70 Wave 5 when cohort members where 26 years old, since no earlier information is available. Information from Wave 4 cannot be used for this purpose, since a large number of cohort members had not yet completed their lower secondary exams at the time they were questioned. Observations with missing information in Wave 5 were coded using information from later waves, where available. As a consequence, the measures of KS4 and KS5 performance also include GCSE/O-Level/CSE and A-Level qualifications that were attained after the 'normal' time at which lower/upper secondary level qualifications are taken.

Table 30. Performance lower sec. level – Number of GCSE/GNVQ Qualifications at Grades A*–C

	%	N
0	24.46	2206
1	9.62	868
2	8.85	798
3	7.54	680
4	7.44	671
5	7.57	683
6	6.92	624
7	6.06	547
8	7.28	657
9	6.03	544
10	4.16	375
11	2.18	197
12	1.14	103
13	0.41	37
14	0.11	10
15	0.07	6
16	0.09	8
17	0.06	5
Missing	—	5856
Total	100.00%	14875

Table 31. Performance upper sec. level – Number of A-levels Passed

	%	N
0	5,278	66.03
1	492	6.16
2	632	7.91
3	972	12.16
4	427	5.34
5	106	1.33
6	33	0.41
7	27	0.34
8	16	0.2
9	7	0.09
10	2	0.03
11	1	0.01
Missing	—	6,882
Total	100.00%	14,875

Figure 6. Performance at lower sec. level — Number of GCSE/GNVQ qualifications at grades A* − C
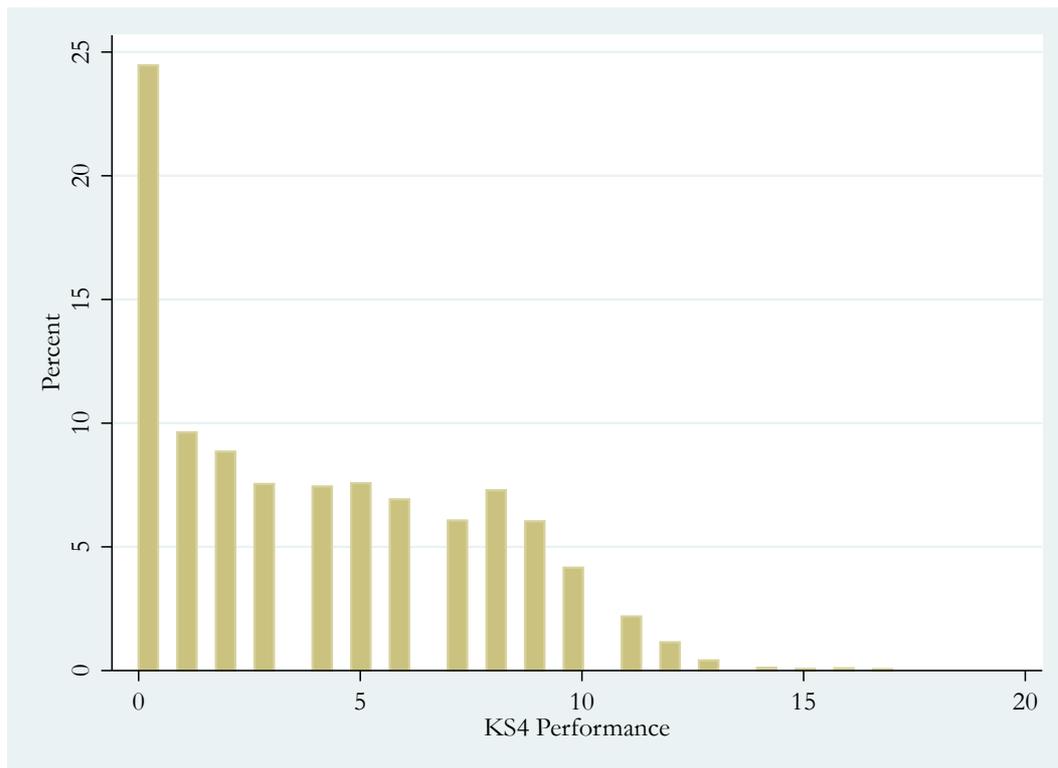
Figure 7. Performance at upper secondary level — Number of A levels passed
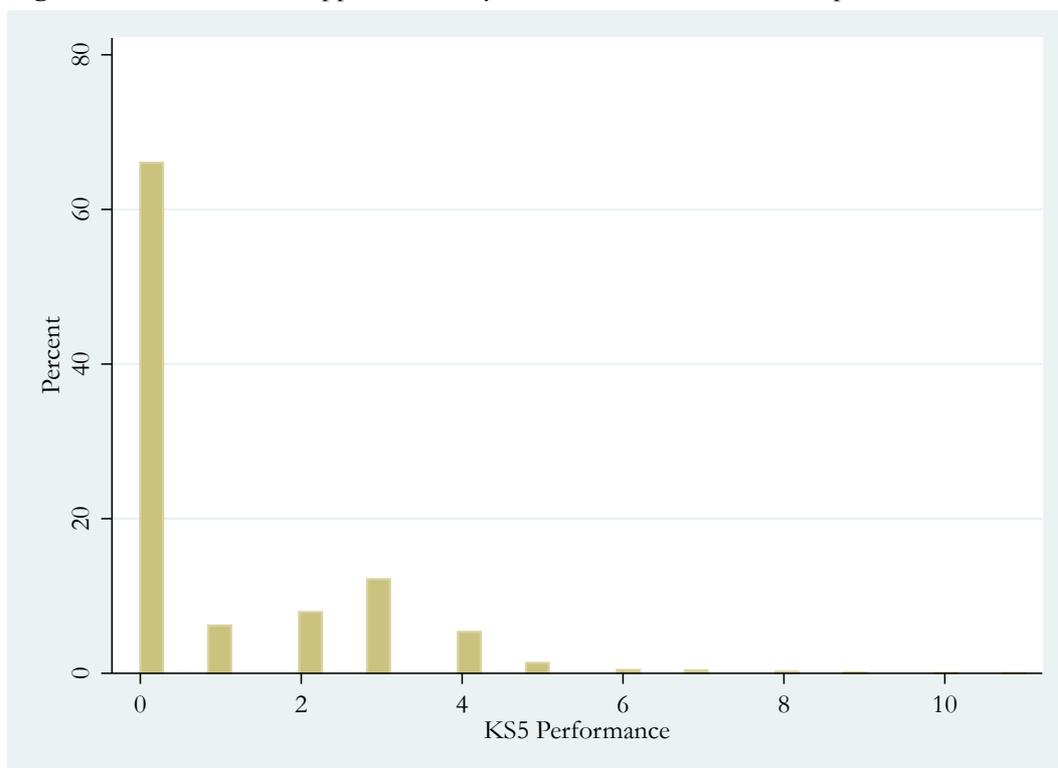
9   Associations between Social Origin Measures

This section presents the results from a series of bivariate analyses between the social origin measures. First, the parental CG status score variable (original scale) is considered in terms of its distribution across parental social class (see Figure 8 and Table 32).

Figure 8. Boxplot Distribution of Parental CG Status Scores by Parental Class
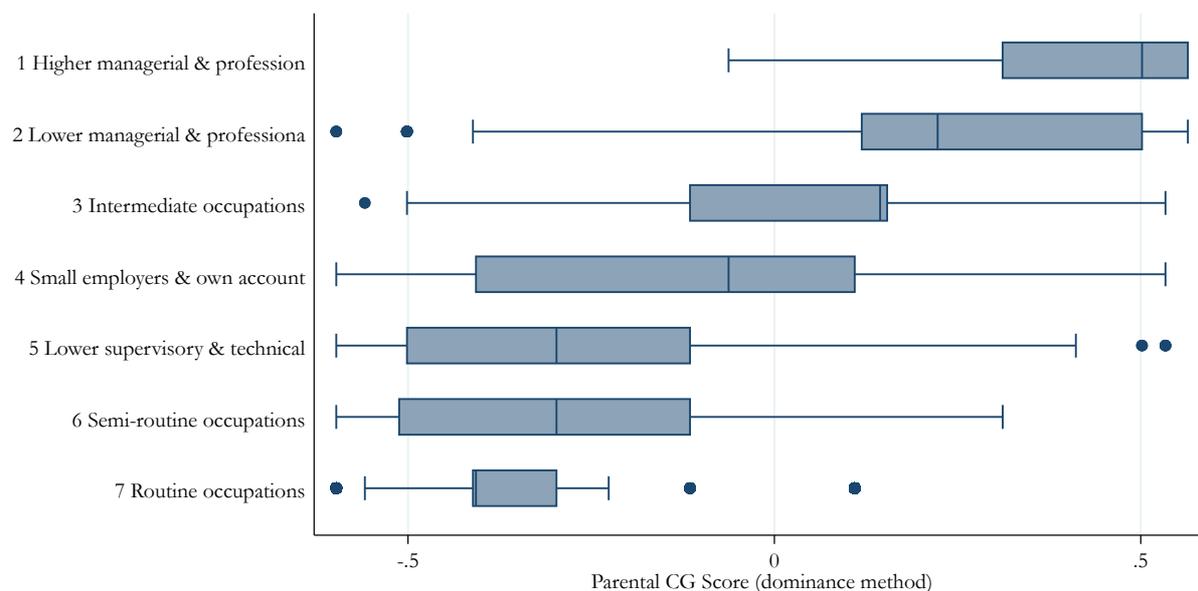
Table 32. Mean Parental CG Status Scores by Parental Class

NS-SEC (reduced method)	Mean	Std. Dev.	Freq.
1. Higher managerial	0.36	0.22	1435
2. Lower managerial	0.24	0.22	2848
3. Intermediate	0.07	0.21	1169
4. Small employers	-0.13	0.26	1682
5. Lower supervisory	-0.26	0.25	2368
6. Semi routine	-0.30	0.21	1757
7. Routine	-0.34	0.21	1886
Total	-0.06	0.34	13145

Table 33 presents the results of a one-way analysis of variance, showing that the differences between groups are statistically significant (F=2793.30, p<0.01) and that 56% of the total variance in parental status is explained by parental class. For the purpose of comparison, note that in the LSYPE data 52% of the total variance in parental status is explained by parental class (see LSYPE Data Note).

Table 33. One-way ANOVA: Parental Status by Parental Class

Between groups	Within groups	F	p	%
875.83	686.56	2793.30	0.000	56

Notes: % denotes the percentage of total variance in status explained by social class

Table 36 uses the 7-level relative scale parental education variable (normalised with range 0–1) to present the mean level of parental education for each social-class group.

Table 34. Mean Parental Education (7-level Relative Scale, Normalised) by Parental Class

NS-SEC (reduced method)	Mean	Std. Dev.	Freq.
1. Higher managerial	0.77	0.24	1425
2. Lower managerial	0.59	0.30	2823
3. Intermediate	0.43	0.28	1156
4. Small employers	0.38	0.29	1654
5. Lower supervisory	0.33	0.27	2320
6. Semi routine	0.20	0.25	1714
7. Routine	0.15	0.23	1839
Total	0.41	0.33	12931

Table 35 gives the results of a one-way analysis of variance, showing that the differences in the mean educational level between social-class groups are statistically significant (F=1119.61, p<0.01) and 34% of the total variance in parental education is explained by parental class. For the purpose of comparison, note that in the LSYPE data 33% of the total variance in parental education is explained by parental class (see LSYPE Data Note).

Table 35. One-way ANOVA: Parental Education by Parental Class

Between groups	Within groups	F	p	%
488.65	940.11	1119.61	0.000	34

Note: % denotes the percentage of total variance in status explained by social class

A cross-tabulation between parental class and education is given in Table 55 in the Appendix, which uses the composite parental education variable (i.e., not relativized/not normalised). Figure 9 below provides a cruder summary of the relationship by comparing the proportion of cases for which: (i) neither parent has any qualifications, and (ii) at least one parent has a degree-level qualifications, by social-class. It is important to note that the operationalization of category (ii) differs from the definition used in the LSYPE data note. In the latter it is defined as 'both parents have a degree-level qualifications'. This definition was note appropriate for the purpose of showing the distribution in BCS70, since this extreme category (category 7) had too few observations (see Table 57). Thus category 6 and 7 of the composite measure of parental education were combined.

Figure 9. Proportion of Cases: (i) Neither Parent has Any Qualifications, and (ii) At least one parent has a Degree-Level Qualifications, by Parental Class
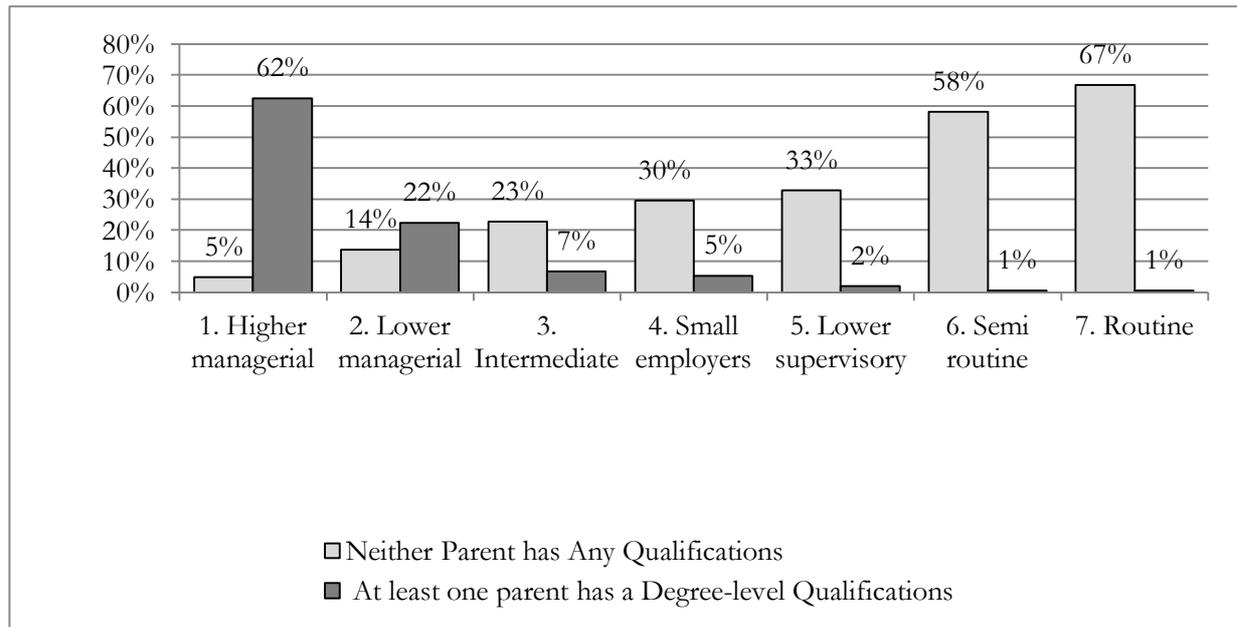
Figure 10 shows how the parental status variable is distributed within each of the seven groups of the composite parental education variable. As expected, those with higher status scores tend to have higher levels of education.

Figure 10. Boxplot Distribution of Parental CG Status Scores (Original Scale) by Parental Education (Composite measure)
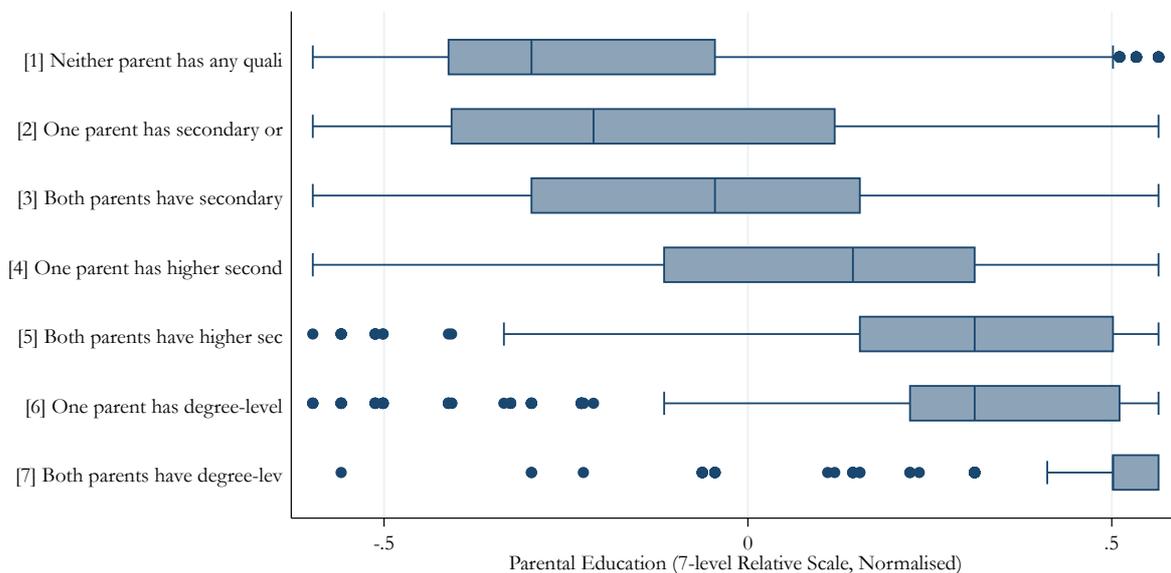
Table 36 uses the CG status quartiles variable to examine the relationship between parental status and parental education. Table 37 gives the mean, median and standard deviations of parental income by each category of parental class, status and education.

Table 36. Cross-tabulation of CG Parental Status Quartiles and Parental Education (Composite measure)

		Parental Education							
		1. No qualifications	2	3	4	5	6	7. Both have degrees	*Total*
Parental Status	1st Quartile	1,671	800	515	212	15	40	1	3,254
		51.35	24.59	15.83	6.52	0.46	1.23	0.03	100
		39.82	31.36	20.11	13.55	4.84	2.73	0.35	25.16
	2nd Quartile	1,451	777	604	316	20	120	10	3,298
		44	23.56	18.31	9.58	0.61	3.64	0.3	100
		34.58	30.46	23.58	20.2	6.45	8.2	3.51	25.5
	3rd Quartile	881	726	1,042	457	49	203	17	3,375
		26.1	21.51	30.87	13.54	1.45	6.01	0.5	100
		21	28.46	40.69	29.22	15.81	13.87	5.96	26.1
	4th Quartile	193	248	400	579	226	1,101	257	3,004
		6.42	8.26	13.32	19.27	7.52	36.65	8.56	100
		4.6	9.72	15.62	37.02	72.9	75.2	90.18	23.23
	Total	4,196	2,551	2,561	1,564	310	1,464	285	12,931
		32.45	19.73	19.81	12.09	2.4	11.32	2.2	100
		100	100	100	100	100	100	100	100

Note: First row = Frequencies; Second row = Row percentages; Third row = Column percentages

Table 37. Parental Income by Parental Class, CG Status Quartiles and Education (Composite measure)

		Parental Income					
		Median	Mean	SD	Min	Max	N
Parental Class	Higher managerial	339.2	357.6	129.4	32.1	567.6	663.0
	Lower managerial	289.2	285.9	123.1	32.1	560.5	1398.0
	Intermediate	232.1	228.0	103.5	36.7	546.3	545.0
	Small employers	196.3	223.7	112.8	32.1	560.5	594.0
	Lower supervisory	189.2	196.7	86.9	32.1	558.0	1069.0
	Semi Routine	153.4	171.2	81.5	32.1	546.3	777.0
	Routine	139.2	152.2	72.5	32.1	539.2	825.0
Parental Status	1st Quartile	153.4	173.4	83.3	32.1	558.0	1414.0
	2nd Quartile	189.2	199.7	101.8	32.1	553.4	1447.0
	3rd Quartile	208.0	231.3	112.1	32.1	560.5	1543.0
	4th Quartile	296.3	321.6	130.2	32.1	567.6	1467.0
Parental Education	1. No qual.	146.3	163.6	83.2	32.1	560.5	1907.0
	2	189.2	205.2	97.8	32.1	546.3	1140.0
	3	232.1	230.5	101.5	32.1	558.0	1186.0
	4	250.9	274.3	120.2	36.7	560.5	770.0
	5	339.2	338.1	125.4	39.2	553.4	140.0
	6	339.2	344.1	127.0	32.1	567.6	712.0
	7. Both w/ degrees	439.2	404.0	130.7	86.7	553.4	140.0

Table 38 presents the results of a one-way analysis of variance, showing that the differences between groups are statistically significant (F<0371.89, p<0.01) and that 28% of the total variance in parental income is explained by parental class.

Table 38. One-way ANOVA: Parental Income by Parental Class

Between groups	Within groups	F	p	%
24029428.2	63150117.2	371.89	0.000	28

Notes: % denotes the percentage of total variance in status explained by social class

Finally, correlations between the social origin variables are presented below. Table 39 gives Spearman rank correlations between categorical measures. Table 40 gives Pearson correlations between alternative social origin measures, all of which have been normalised to take values in the range 0–1. The strength of associations is largely similar across the two tables. All correlations are statistically significant (p<0.01). Parental class and status are strongly correlated, correlations between parental education and class or status are moderate, and correlations between parental income and any other social origin measure are comparatively weak.

Table 39. Spearman Rank Correlations: Parental Class, CG Status Quartiles, Education (Composite Measure) and Income Quartiles

	Class	**Education**	**Status**	**Income**
Class	1.00**			
Education	0.59**	1.00**		
Status	0.72**	0.55**	1.00**	
Income	0.48**	0.49**	0.41**	1.00**

Notes: Values have been reversed so that lower values indicate a lower status/class/education category

Table 40. Pearson Correlations: Parental Class, CG Status (Original Scale), Education (Composite Measure and Relative Scale) and Income (Original Scale)

	Class	**Education†**	**Education‡**	**Status**	**Income**
Class	1.00**				
Education†	0.57**	1.00**			
Education‡	0.59**	0.96**	1.00**		
Status	0.73**	0.54**	0.58**	1.00**	
Income	0.51**	0.51**	0.53**	0.47**	1.00**

Notes: Values have been reversed so that lower values indicate a lower status/class/education category
All variables have been normalised between 0–1
† Uses 7-level relative scale
‡ Uses Composite Measure
** p<0.01

10   Social Origin and Cognitive Ability

This section examines how cognitive ability, measured at age 10, is associated with each measure of social origin described above. Figure 11 and Table 41 consider how cognitive ability is distributed across social class categories.

Figure 11. Boxplot Distribution of Cognitive Ability by Parental Class
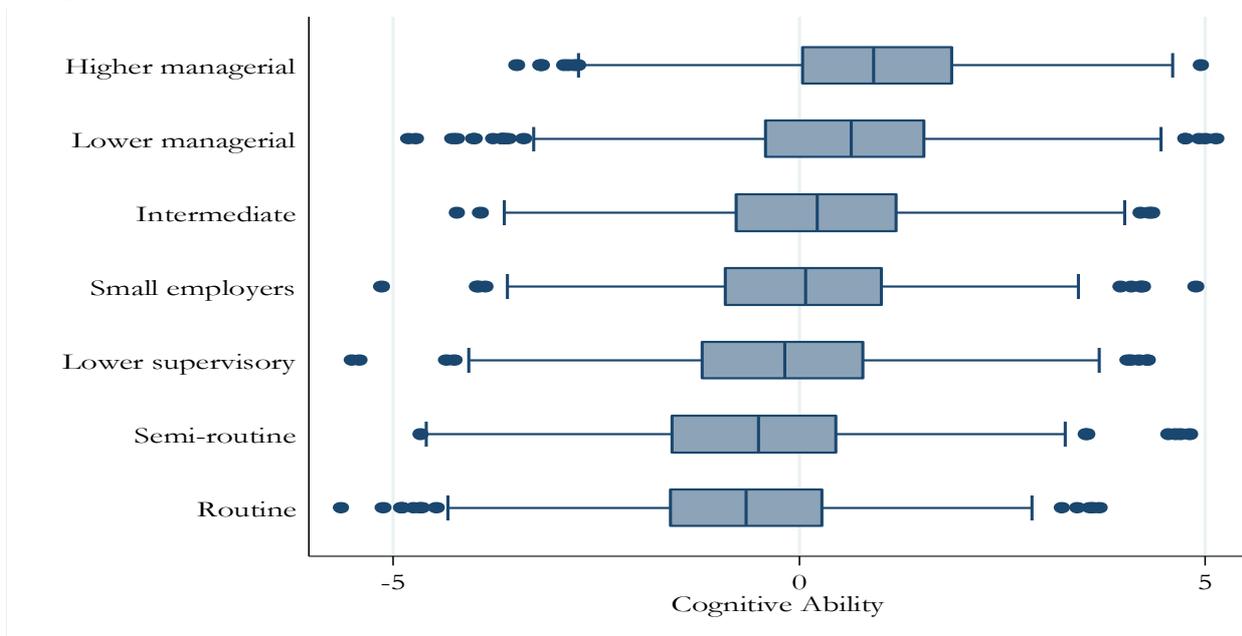
Table 41. Mean Cognitive Ability by Parental Class

NS-SEC (reduced method)	Mean	Std. Dev.	Freq.
1. Higher managerial	0.92	1.37	1069
2. Lower managerial	0.56	1.42	2191
3. Intermediate	0.19	1.44	914
4. Small employers	0.05	1.39	1264
5. Lower supervisory	-0.21	1.44	1889
6. Semi routine	-0.52	1.47	1364
7. Routine	-0.67	1.60	1266

Table 42 and Figure 12 provide identical summaries by quintiles of parental CG status. Table 43 then provides a cross-tabulation of parental status quintiles by cognitive ability quintiles. The two measures, in their original interval forms, are correlated at 0.33 (p<0.01).

Table 42. Mean Cognitive Ability by Parental CG Status Quintiles

Chan–Goldthorpe Status	Mean	Std. Dev.	Freq.
1st Quintile (Lowest)	-0.51	1.44	2457
2nd Quintile	-0.35	1.43	1713
3rd Quintile	-0.05	1.42	2094
4th Quintile	0.25	1.41	1946
5th Quintile (Highest)	0.96	1.37	1919

Figure 12. Boxplot Distribution of Cognitive Ability by Parental CG Status Quintiles
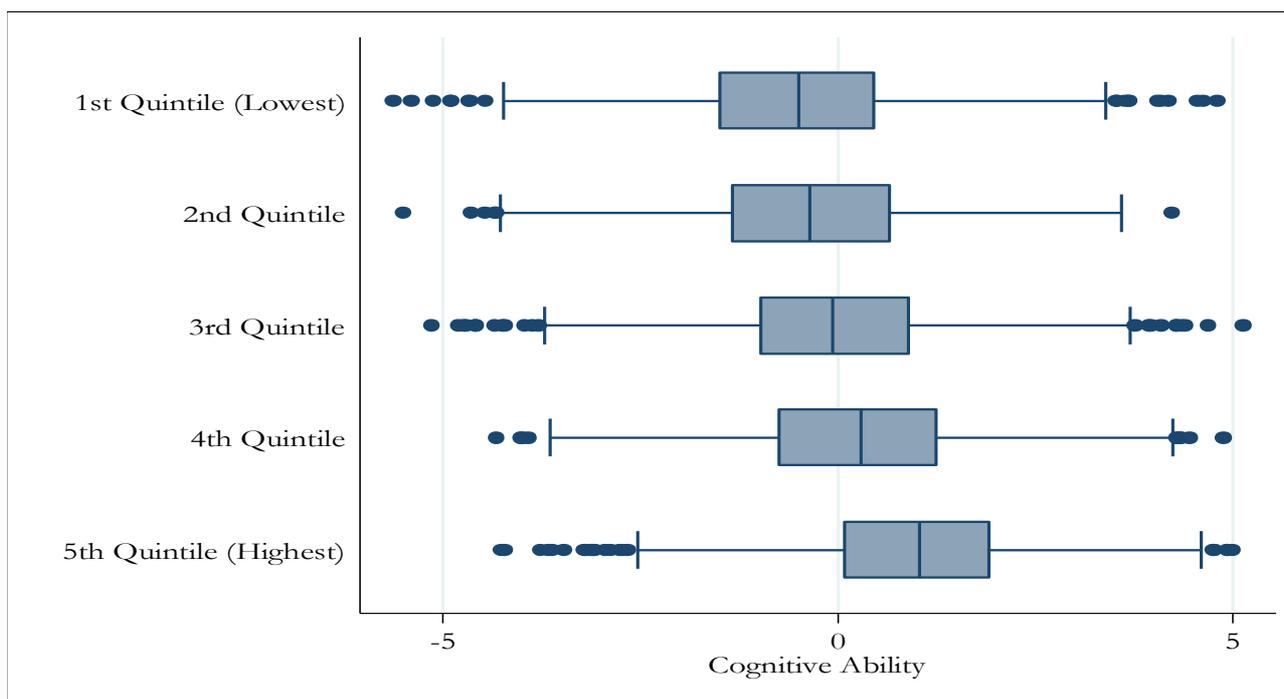
Table 43. Cross-Tabulation of Parental CG Status Quintiles by Cognitive Ability Quintiles

		Cognitive Ability					
		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	Total
Parental CG Status	1st Quintile	29	24	21	17	10	100
		37	29	25	20	11	24
	2nd Quintile	26	24	20	17	13	100
		23	20	17	14	11	17
	3rd Quintile	19	22	23	19	18	100
		20	23	23	20	18	21
	4th Quintile	14	19	20	23	24	100
		14	18	19	22	22	19
	5th Quintile	6	11	16	27	41	100
		6	10	15	25	38	19
	Total	19	20	20	20	21	100
		100	100	100	100	100	100

Table 46 uses the composite parental education measure to examine the distribution of cognitive ability scores across categories.

Table 44. Mean Cognitive Ability by Parental Education

	Mean	SD	Min	Max	N
1. Neither parent has any qualification	-0.58	1.41	-5.64	4.85	3466
2.	-0.18	1.39	-5.40	4.76	2046
3.	0.19	1.43	-5.51	5.13	2066
4.	0.43	1.36	-4.27	4.63	1226
5.	0.97	1.35	-4.27	4.21	230
6.	1.07	1.31	-4.21	4.99	1114
7. Both parents have degrees	1.65	1.23	-2.94	4.60	209

Cognitive ability is now examined in terms of the distribution of scores across income quintiles. See Table 45. The two measures, in their original interval forms, are correlated at 0.32 (p<0.01).

Table 45. Mean Cognitive Ability by Parental Income Quintiles

Parental Income	Mean	Std. Dev.	Freq.
1st Quintile (Lowest)	-0.48	1.45	1148
2nd Quintile	-0.09	1.49	884
3rd Quintile	0.16	1.43	1261
4th Quintile	0.43	1.44	825
5th Quintile (Highest)	0.90	1.39	996

Finally, 5x5 contingency tables were produced for all social origin-by-cognitive ability quintile pairs. For social class, the variable was recoded to five ordinal categories (i.e. classes 3–5 were collapsed); for parental CG status, quintiles were used; for parental education, categories 2–3 and categories 6–7 were collapsed); and for parental income, quintiles were used. These tables are not reproduced here, but each reinforces the general trend that those from more advantaged social backgrounds – however defined – tend to have higher scores of cognitive ability.

In an attempt to determine whether the association between cognitive ability and social origin differs according to how one choses to operationalise the latter, global log odds ratios were calculated for each of the tables, using the method proposed by Cox and Jackson (2009). Differences between the averages of the centre four global log odds ratios were calculated for each pair of tables, and were then tested for significance. The results of these tests are given in Table 46 below.

Table 46. Average Centre Four Global Log Odds Ratios and a Test of Significance in the Differences

	Average Centre Four		Difference	SE Difference	Lower CI	Upper CI
	i	ii				
i.Class–ii.Status	1.04	1.00	0.04	0.05	-0.14	0.06
i.Class–ii.Education	1.04	1.48	0.44**	0.06	0.31	0.56
i.Class–ii.Income	1.04	0.96	0.09	0.07	-0.21	0.04
i.Status–ii.Education	1.00	1.48	0.48**	0.06	0.35	0.60
i.Status–ii.Income	1.00	0.96	0.04	0.06	-0.17	0.08
i.Education–ii.Income	1.48	0.96	0.52**	0.07	-0.67	0.39

The overall association, measured via global log odds, between cognitive ability and parental education is significantly different to the overall association between cognitive ability and any of the other social origin measures. No other differences between associations are statistically significant.

11   Social Origin and Educational Attainment

This section examines the relationship between each of the social origin measures and the main outcome variable of respondents' educational attainment at age 38. Tables 47–50 present cross-tabulations between parental class, education, status and income by respondents' educational attainment.

Table 47. Cross-Tabulation of Parental Class by Cohort Members' Educational Attainment at age 38

| Parental NS-SEC | *Cohort Member's Educational Attainment at Age 38* | | | | | | | Total | |
	1	2	3	4	5	6	7		
Higher managerial	64	33	121	190	54	187	507	1156	N
	6	3	10	16	5	16	44	100	Row %
	5	4	6	9	20	13	25	11	Column %
Lower managerial	207	106	383	489	78	371	658	2292	N
	9	5	17	21	3	16	29	100	Row %
	16	14	18	23	29	25	33	23	Column %
Intermediate	90	58	185	218	25	147	173	896	N
	10	6	21	24	3	16	19	100	Row %
	7	8	9	10	9	10	9	9	Column %
Small employers	188	115	260	289	37	200	221	1310	N
	14	9	20	22	3	15	17	100	Row %
	14	15	12	13	14	14	11	13	Column %
Lower supervisory	257	174	465	430	37	272	209	1844	N
	14	9	25	23	2	15	11	100	Row %
	19	23	22	20	14	18	10	18	Column %
Semi routine	225	150	341	261	21	168	123	1289	N
	17	12	26	20	2	13	10	100	Row %
	17	20	16	12	8	11	6	13	Column %
Routine	299	116	379	269	19	129	102	1313	N
	23	9	29	20	1	10	8	100	Row %
	22	15	18	13	7	9	5	13	Column %
Total	1330	752	2134	2146	271	1474	1993	10100	N
	13	7	21	21	3	15	20	100	Row %
	100	100	100	100	100	100	100	100	Column %

Note: Cohort members educational attainment categories are as follows:

1. No qualifications

2. Below O-level, NVQ 1 [Sub-secondary]

3. 1–4 O-level passes, NVQ2 [Secondary—low performance]

4. 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high perf.]

5. 2+ A-level passes [Higher secondary]

6. Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]

7. Degree, NVQ 5 or 6, higher degree [Higher tertiary]

Table 48. Cross-Tabulation of Parental Education (Combined Approach 2) by Cohort Members'
Educational Attainment at age 38

Parental Education	Cohort Member's Educational Attainment at Age 38							Total	
	1	2	3	4	5	6	7	Total	
1. No qualifications	655	371	827	646	50	407	255	3211	N
	20	12	26	20	2	13	8	100	Row %
	47	48	38	30	18	27	13	31	Column %
2	314	165	520	474	44	276	249	2042	N
	15	8	25	23	2	14	12	100	Row %
	22	21	24	22	16	18	12	20	Column %
3	215	148	470	497	66	343	370	2109	N
	10	7	22	24	3	16	18	100	Row %
	15	19	22	23	24	23	18	20	Column %
4	117	53	216	304	45	213	314	1262	N
	9	4	17	24	4	17	25	100	Row %
	8	7	10	14	17	14	16	12	Column %
5	19	6	28	44	11	38	105	251	N
	8	2	11	18	4	15	42	100	Row %
	1	1	1	2	4	3	5	2	Column %
6	63	28	104	187	50	204	569	1205	N
	5	2	9	16	4	17	47	100	Row %
	5	4	5	9	18	14	28	12	Column %
7. Both have degrees	16	5	9	23	6	21	160	240	N
	7	2	4	10	3	9	67	100	Row %
	1	1	0	1	2	1	8	2	Column %
Total	1399	776	2174	2175	272	1502	2022	10320	N
	14	8	21	21	3	15	20	100	Row %
	100	100	100	100	100	100	100	100	Column %

Table 49. Cross-Tab. of Parental CG Status Quartiles by Cohort Members' Educ. Attainment at age 38

| Parental CG Status | *Cohort Member's Educational Attainment at Age 38* | | | | | | | Total | |
	1	2	3	4	5	6	7		
1st Quartile	513	251	698	566	55	346	293	2722	N
	19	9	26	21	2	13	11	100	Row %
	39	33	33	26	20	23	15	27	Column %
2nd Quartile	405	260	676	636	61	374	373	2785	N
	15	9	24	23	2	13	13	100	Row %
	30	35	32	30	23	25	19	28	Column %
3rd Quartile	241	157	442	508	65	350	379	2142	N
	11	7	21	24	3	16	18	100	Row %
	18	21	21	24	24	24	19	21	Column %
4th Quartile	171	84	318	436	90	404	948	2451	N
	7	3	13	18	4	16	39	100	Row %
	13	11	15	20	33	27	48	24	Column %
Total	1330	752	2134	2146	271	1474	1993	10100	N
	13	7	21	21	3	15	20	100	Row %
	100	100	100	100	100	100	100	100	Column %

Note: Cohort members educational attainment categories are as follows:

1. No qualifications

2. Below O-level, NVQ 1 [Sub-secondary]

3. 1–4 O-level passes, NVQ2 [Secondary—low performance]

4. 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high perf.]

5. 2+ A-level passes [Higher secondary]

6. Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]

7. Degree, NVQ 5 or 6, higher degree [Higher tertiary]

Table 50. Cross-Tab. of Parental Income Quartiles by Cohort Members' Educ. Attainment at Age 38

| Parental CG Status | *Cohort Member's Educational Attainment at Age 38* | | | | | | | Total | |
	1	2	3	4	5	6	7		
1st Quartile	274	119	389	314	16	203	169	1484	N
	18	8	26	21	1	14	11	100	Row %
	41	33	35	27	11	25	15	28	Column %
2nd Quartile	177	117	299	298	23	182	180	1276	N
	14	9	23	23	2	14	14	100	Row %
	27	32	27	26	16	22	16	24	Column %
3rd Quartile	121	73	245	298	49	212	285	1283	N
	9	6	19	23	4	17	22	100	Row %
	18	20	22	26	34	26	25	24	Column %
4th Quartile	93	56	178	237	57	219	505	1345	N
	7	4	13	18	4	16	38	100	Row %
	14	15	16	21	39	27	44	25	Column %
Total	665	365	1111	1147	145	816	1139	5388	N
	12	7	21	21	3	15	21	100	Row %
	100	100	100	100	100	100	100	100	Column %

Note: Cohort members educational attainment categories are as follows:

1. No qualifications

2. Below O-level, NVQ 1 [Sub-secondary]

3. 1–4 O-level passes, NVQ2 [Secondary—low performance]

4. 5+ O-level passes or 1 A-level pass, NVQ 3 [Secondary—high perf.]

5. 2+ A-level passes [Higher secondary]

6. Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]

7. Degree, NVQ 5 or 6, higher degree [Higher tertiary]

12   Cognitive Ability and Educational Attainment

This section will examine the association between early-life cognitive ability, measured at age 10, and educational attainment later in life. Mean cognitive ability scores are presented across categories of highest qualification achieved at the ages of 20 and 38.[5] Table 51 shows that mean cognitive ability scores tend to rise with increased attainment, with the notable exception of those whose highest qualification at age 38 is equivalent to a tertiary sub-degree qualification; for these individuals, early-life cognitive ability is, on average, less than it is for those who achieved 2+ A-level passes. The same was found for the NCDS cohort. Moreover, for individuals who are coded as having no qualification at age 20, the mean cognitive ability score is somewhat higher than that for people in category two, and compared to individuals who are coded as having no qualification at age 38.

Table 51. Mean Cognitive Ability by Educational Attainment at Ages 20 and 38

	Age 20			Age 38		
	Mean	Std. Dev.	N	Mean (SD)	Std. Dev.	N
1. No qualifications	-0.49	1.50	2,050	-0.74	1.47	1,183
2. Below O-level, NVQ 1	-0.66	1.27	716	-0.62	1.33	659
3. 1–4 O-level passes, NVQ 2	-0.28	1.27	1,973	-0.41	1.29	1,874
4. 5+ O-level passes or 1 A-level pass, NVQ 3	0.45	1.32	2,301	0.14	1.32	1,899
5. 2+ A-level passes	1.46	1.21	1,206	1.00	1.21	235
6. Tertiary sub-degree qualification, NVQ 4	0.33	1.31	559	0.31	1.35	1,277
7. Degree, NVQ 5 or 6, higher degree	—	—	3	1.25	1.26	1,681
Total	0.11	1.49	8,808	0.11	1.49	8,808

Following Bukodi and Goldthorpe (2013), Table 52 takes an alternative approach using the same information; mean scores are examined according to whether individuals passed various qualification thresholds. The first threshold compares those who attained some level of qualification (categories 2–7 in Table 51 above) rather than none (category 1), the second threshold compares those who attained qualifications at NVQ 1 or higher (categories 3–7) with those whose attainment is lower (categories 1–2), and so on.

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[5] Educational attainment up until age 20 is also considered because this is the latest age for which we have attainment information for the LSYPE sample.

Table 52. Mean Cognitive Ability by Educational Attainment Thresholds at Ages 20 and 38

	Age 20		Age 38	
	Mean (SD)	N	Mean (SD)	N
Threshold i.				
1	-0.49 (1.50)	2050	-0.74 (1.47)	1183
2–7	0.29 (1.44)	6758	0.24 (1.45)	7625
Threshold ii.				
1–2	-0.54 (1.44)	2766	-0.70 (1.42)	1842
3–7	0.40 (1.42)	6042	0.32 (1.44)	6966
Threshold iii.				
1–3	-0.43 (1.38)	4739	-0.55 (1.36)	3716
4–7	0.73 (1.37)	4069	0.59 (1.40)	5092
Threshold iv.				
1–4	-0.14 (1.42)	7040	-0.32 (1.39)	5615
5–7	1.10 (1.35)	1768	0.86 (1.37)	3193
Threshold v.				
1–5	0.92 (1.50)	8,246	-0.27 (1.41)	5850
6–7	0.33 (1.31)	562	0.84 (1.38)	2958
Threshold vi.				
1–6	—	—	-0.16 (1.41)	7127
7	—	—	1.25 (1.27)	1681

Table 55 reports the means of cognitive ability by the type of threshold.

Table 53. Mean Cognitive Ability Scores by Type of Educational Threshold (Age 38)

	KS5 Transition					
	Academic only			Academic and vocational		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
No	-0.28	1.39	6,114	-0.32	1.39	5,615
Yes	0.98	1.35	2,694	0.86	1.37	3,193

	HE Transition					
	Academic only			Academic and vocational		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
No	-0.16	1.41	7,170	-0.16	1.41	7,127
Yes	1.26	1.26	1,638	1.25	1.26	1,681

Appendix

Table 54. Details on coding of variables on fathers' and mothers' educational attainment

Categories of Original Variable	Categories of generated variable
Out of range	
Not stated	
Other qualification	Missing
Other qual specify	
O level or equiv	
Trade apprenticeship	O-level / Trade apprentice
A level or equiv	A-level
SRN	
Cert of education	Sub-degree qualification
Degree	Degree
No qualifications	No qualification

Table 55. Cross-tabulation between Parental Social Class and Parental Education (Composite measure)

	1. No qualifications	2	3	4	5	6	7. Both have degrees	*Total*
Higher managerial	69	86	135	198	47	725	165	1,425
	4.84	6.04	9.47	13.89	3.3	50.88	11.58	100
	1.64	3.37	5.27	12.66	15.16	49.52	57.89	11.02
Lower managerial	389	399	584	625	194	531	101	2,823
	13.78	14.13	20.69	22.14	6.87	18.81	3.58	100
	9.27	15.64	22.8	39.96	62.58	36.27	35.44	21.83
Intermediate	262	262	390	149	16	70	7	1,156
	22.66	22.66	33.74	12.89	1.38	6.06	0.61	100
	6.24	10.27	15.23	9.53	5.16	4.78	2.46	8.94
Small employers	489	415	422	213	29	77	9	1,654
	29.56	25.09	25.51	12.88	1.75	4.66	0.54	100
	11.65	16.27	16.48	13.62	9.35	5.26	3.16	12.79
Lower supervisory	761	689	566	247	13	42	2	2,320
	32.8	29.7	24.4	10.65	0.56	1.81	0.09	100
	18.14	27.01	22.1	15.79	4.19	2.87	0.7	17.94
Semi routine	996	369	258	76	6	8	1	1,714
	58.11	21.53	15.05	4.43	0.35	0.47	0.06	100
	23.74	14.46	10.07	4.86	1.94	0.55	0.35	13.25
Routine	1,230	331	206	56	5	11	0	1,839
	66.88	18	11.2	3.05	0.27	0.6	0	100
	29.31	12.98	8.04	3.58	1.61	0.75	0	14.22
Total	4,196	2,551	2,561	1,564	310	1,464	285	12,931
	32.45	19.73	19.81	12.09	2.4	11.32	2.2	100
	100	100	100	100	100	100	100	100

Note: First row = Frequencies; Second row = Row percentages; Third row = Column percentages