Online Appendix

"The Economic Value of *Breaking Bad*: Misbehavior, Schooling and the Labor Market"

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Appendix A contains the counts of publications on externalizing and internalizing research in PubMed cited in Section 1, Introduction, in the main paper. Appendix B contains summary statistics of the main analytic sample along with various subsamples, cited in Section 2, Data and Preliminary Analysis, in the main paper. Appendix C presents full estimation results from the benchmark model, the sensitivity analysis of the benchmark model, as well as details on additional datasets, from which we discuss the generalizability of our results across data sets. These results are cited in Section 3, Model and Main Estimates, in the main paper. Appendix D contains results of additional analyses and explorations of potential mechanisms, cited in Section 4, Additional Analyses and Interpretation of Results, in the main paper.

Appendix A Research Mentioning Externalizing and Internalizing

Figure A1 plots a histogram of the number of publications in the PubMed database using the query "internalizing, externalizing" for all fields. For comparison, we also query "big five personality traits" for all fields. The search is executed using a "fuzzy best match," which means it will capture, for example, variations of "big five", such as 'Big 5" or "Big-5" and so on. According to the the figure there is a strong increasing trend in research on both topics and the publications related to the internalizing and externalizing traits at least double those related to the "Big 5" traits in every year since 1980.

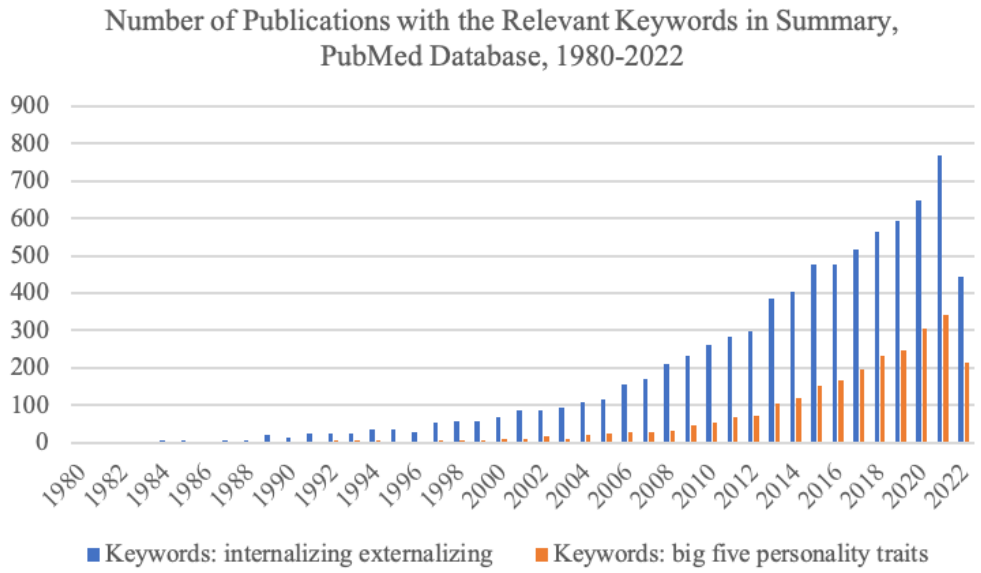


Figure A1: Number of Publications: The figure shows the number of publications found each year during 1980-2020 using PubMed and using two keyword queries: "internalizing, externalizing" and "big five personality traits."

Appendix B Summary Statistics

We report summary statistics from the analysis sample in Appendix B.1 as well as summary statistics from additional relevant samples, including a "full sample" that includes all individuals observed at age 11 in the NCDS (some of whom may have missing variables at older ages and thus are not part of our analytic sample) in Appendix B.2, and subsamples stratified by high-SES and low-SES family background in Appendix B.3.

Appendix B.1 Analysis Sample

For the analysis sample, Table B1 reports summary statistics for education, labor market outcomes and demographics. Table B2 reports summary statistics of the BSAG maladjustment syndromes, test scores and crude measures of unobserved skills. Table B3 reports the summary statistics of additional controls and intermediate outcomes. Table B4 reports the summary statistics of school types and occupational tasks for individuals. Table B5 describes the variables used to construct construct the crude measures of skills in the descriptive exercise. Figure B2 shows gender differences in labor market outcomes by schooling and Figure B3 shows gender differences in labor market outcomes by fertility.

Table B1: Summary Statistics of Demographics, Education, and Labor Market Outcomes, Analytic Sample

	Both	Males	Females	Diff
Female	0.507			
	(0.500)			
No Formal Education	0.112	0.103	0.121	*
	(0.316)	(0.304)	(0.327)	
CSE	0.128	0.113	0.142	***
	(0.334)	(0.316)	(0.349)	
O Level	0.345	0.305	0.384	***
	(0.475)	(0.460)	(0.486)	
A Level	0.147	0.191	0.104	***
	(0.354)	(0.393)	(0.305)	
Higher Education	0.146	0.150	0.143	
	(0.354)	(0.357)	(0.350)	
Higher Degree	0.122	0.138	0.106	***
	(0.327)	(0.345)	(0.308)	
Hourly Wage	6.636	7.638	5.457	***
	(3.053)	(2.967)	(2.712)	
Weekly Hours Worked	36.36	43.54	27.91	***
	(12.67)	(7.772)	(12.09)	
Weekly Earnings	252.5	329.0	162.3	***
	(152.5)	(134.5)	(119.6)	
In Paid Work	0.804	0.919	0.692	***
	(0.397)	(0.273)	(0.462)	
Employee	0.675	0.740	0.612	***
	(0.468)	(0.439)	(0.487)	
Financial Difficulty	0.160	0.155	0.165	
	(0.367)	(0.362)	(0.371)	
London Before 16	0.355	0.352	0.359	
	(0.479)	(0.478)	(0.480)	
London at 33	0.298	0.292	0.304	
	(0.457)	(0.455)	(0.460)	
Observations	7241	3573	3668	7241

Notes: This table lists the summary statistics of demographics, education, and labor market outcomes for the analytic sample of 7,241 individuals. For education categories and employment, entries are in the form of percentages divided by 100. Wages and weekly earnings are measured in 1992 British pounds. Employee means the percentage of individuals in the sample that are in paid work and not self-employed. Statistics are reported separately for all individuals (Column (1)), for males (Column (2)) and for females (Column (3)). In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table B2: Summary Statistics of BSAG Syndromes, Test Scores, and Crude Measures of Unobserved Skills, Analytic Sample

	Both	Males	Females	Diff
Hostility Towards Adults	0.763	0.889	0.641	***
	(1.753)	(1.858)	(1.635)	
Hostility Towards Children	0.239	0.265	0.215	**
	(0.718)	(0.777)	(0.655)	
Anxiety for Acceptance by Adults	0.515	0.483	0.546	*
	(1.152)	(1.097)	(1.203)	
Anxiety for Acceptance by Children	0.298	0.401	0.197	***
	(0.761)	(0.898)	(0.580)	
Restlessness	0.194	0.242	0.147	***
	(0.520)	(0.575)	(0.455)	
Inconsequential Behavior	1.262	1.674	0.861	***
	(1.869)	(2.152)	(1.433)	
Depression	0.932	1.085	0.784	***
	(1.454)	(1.536)	(1.353)	
Withdrawal	0.308	0.374	0.243	***
	(0.772)	(0.878)	(0.646)	
Unforthcomingness	1.477	1.537	1.419	*
	(2.034)	(2.009)	(2.057)	
Writing Off of Adults and Adult Standards	0.908	1.124	0.697	***
	(1.588)	(1.786)	(1.334)	
Verbal Ability	23.21	22.17	24.22	***
	(8.952)	(9.171)	(8.615)	
Reading Ability	16.59	16.61	16.57	
	(5.977)	(6.232)	(5.717)	
Non-Verbal Ability	21.76	21.59	21.93	*
	(7.310)	(7.424)	(7.194)	
Math Ability	17.71	18.02	17.42	*
	(10.07)	(10.32)	(9.812)	
Externalizing	0.000	0.155	-0.151	***
	(1.000)	(1.107)	(0.858)	
Internalizing	0.000	0.113	-0.110	***
	(1.000)	(1.058)	(0.927)	
Misbehavior	0.000	0.154	-0.150	***
	(1.000)	(1.083)	(0.887)	
Cognition	0.000	-0.0309	0.0301	**
	(1.000)	(1.030)	(0.969)	
Observations	7241	3573	3668	7241

Notes: This table lists the summary statistics of the BSAG maladjustment syndromes and the test scores for the analytic sample of 7,241 individuals. The BSAG syndromes are constructed using teachers' reports of misbehavior in school. For each maladjustment syndrome, a child receives a score, which is an integer between 0 and 15, with 15 indicating a persistent display of the behavior described by the syndrome. In the table, entries are averages for each syndrome for the analytic sample. To construct crude measures of unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis (see Table B5) and then normalize each unobserved skill to have mean zero and standard deviation one. Statistics are reported separately for all individuals (Column (1)), for males (Column (2)) and for females (Column (3)). In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table B3: Summary Statistics of Additional Controls and Intermediate Outcomes, Analytic Sample

	Both	Males	Females	
Additional Controls:				
Father Studied Beyond Min. Schooling Age	0.265	0.266	0.265	
	(0.442)	(0.442)	(0.441)	
Mother Studied Beyond Min. Schooling Age	0.215	0.217	0.213	
	(0.411)	(0.412)	(0.410)	
No Info on Father Figure	0.0254	0.0260	0.0248	
	(0.157)	(0.159)	(0.156)	
Father in Skilled Occupation	0.532	0.530	0.534	
	(0.499)	(0.499)	(0.499)	
Father in Managerial Occupation	0.244	0.246	0.242	
	(0.430)	(0.431)	(0.429)	
Working Mother	0.614	0.610	0.619	
	(0.487)	(0.488)	(0.486)	
Intermediate Outcomes:				
Has a Partner	0.873	0.877	0.868	
	(0.333)	(0.328)	(0.338)	
Number of Children	1.475	1.349	1.597	***
	(1.125)	(1.152)	(1.084)	
Experience	145.8	164.0	128.1	***
	(50.94)	(45.63)	(49.59)	
Skilled Manual Occu.	0.203	0.337	0.0725	***
	(0.402)	(0.473)	(0.259)	
Skilled Non-manual Occu.	0.246	0.112	0.377	***
	(0.431)	(0.315)	(0.485)	
Managerial Occupation	0.352	0.400	0.306	***
	(0.478)	(0.490)	(0.461)	
Observations	7241	3573	3668	7241

Notes: This table lists the summary statistics of the additional control variables and intermediate outcomes for the analytic sample of 7,241 individuals. For additional controls, entries are in the form of percentages divided by 100. For intermediate outcomes except number of children and experience, entries are in the form of percentages divided by 100. Experience is measured by months of working experience. Statistics are reported separately for both genders (Column (1)), for males (Column (2)) and for females (Column (3)). In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table B4: Summary Statistics of Schools and Occupational Tasks, Analytic Sample

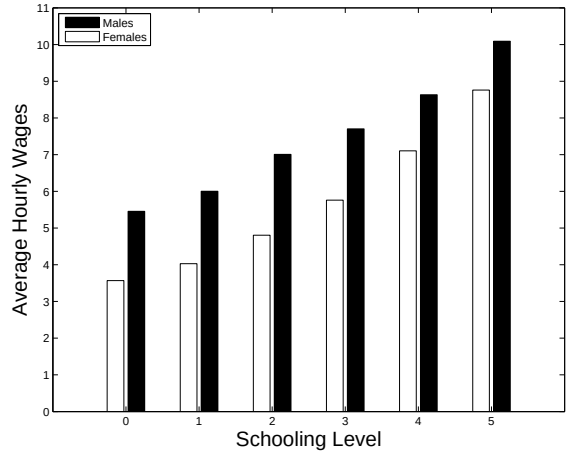
	Both	In Comprehensive	Not in Comprehensive	Diff
Comprehensive school	0.533	0.738	0	***
	(0.499)	(0.440)	(0)	
Secondary modern school	0.189	0.262	0	***
	(0.391)	(0.440)	(0)	
Non-LEA school	0.172	0	0.616	***
	(0.377)	(0)	(0.486)	
Grammar school	0.107	0	0.384	***
	(0.309)	(0)	(0.486)	
Abstract task intensity	0.000	-0.0754	0.212	***
	(1.000)	(0.991)	(0.994)	
Routine task intensity	0.000	-0.102	***	
	(1.000)	(1.022)	(0.934)	
Observations	6698	4755	1943	6698

Notes: This table lists the summary statistics of schools and occupational task intensity in the occupations of the analytic sample of 6,698 individuals with school type information in 1974 at age 16. For school categories, entries are in the form of percentages divided by 100. The task intensities are standardized in our sample to have mean zero and variance 1. Statistics are reported separately for students enrolled in different types of schools in 1974 at age 16. We include all students with school type information in 1974 in Column (1), students enrolled in either a comprehensive or secondary modern school in Column (2), and students enrolled in a grammar or non-local education authority (non-LEA) school in Column (3). In Column (4), *, ** and *** mean that differences between the two school groups are significant at the 10, 5 and 1 percent levels, respectively.

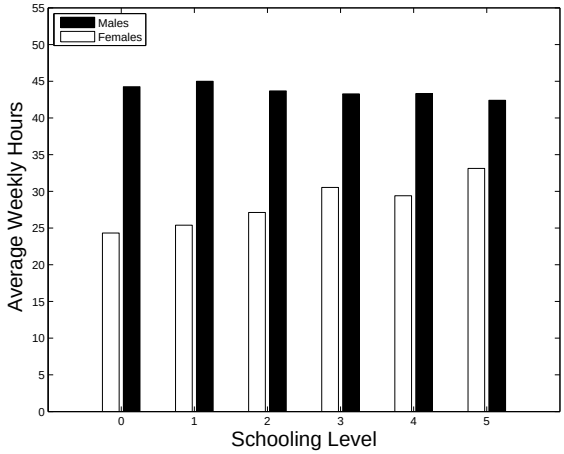
Table B5: Measurements Used to Identify Unobserved Skills

Unobserved Skill	Measures
Externalizing Behavior	◇ Hostility Towards Adults ◇ Hostility Towards Children ◇ Anxiety for Acceptance by Adults ◇ Anxiety for Acceptance by Children ◇ Restlessness ◇ Inconsequential Behavior ◇ Writing Off of Adults and Adult Standards
Internalizing Behavior	◇ Depression ◇ Withdrawal ◇ Unforthcomingness ◇ Writing Off of Adults and Adult Standards
Cognition	◇ Reading Comprehension Test Score ◇ Mathematics Test Score ◇ Non Verbal Score on General Ability Test ◇ Verbal Score on General Ability Test

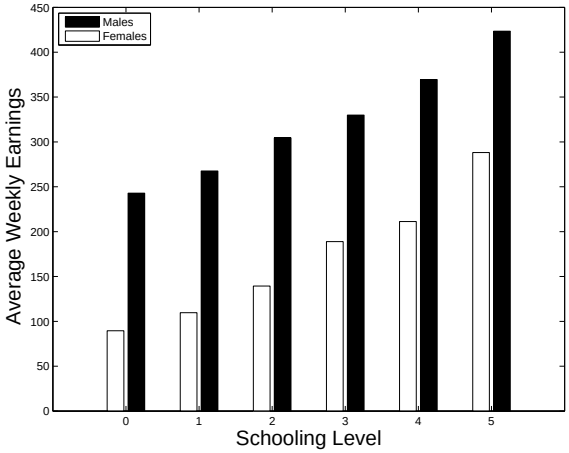
Notes: This table lists the three unobserved skills used in the empirical analysis (externalizing behavior, internalizing behavior and cognition) and the observed variables used to identify them in the descriptive exercise. Measures for externalizing and internalizing behaviors are drawn from the BSAG maladjustment variables derived from teachers' reports of misbehavior. For cognition, a series of aptitude test scores are used as measures. See Section 2.3 for further details.



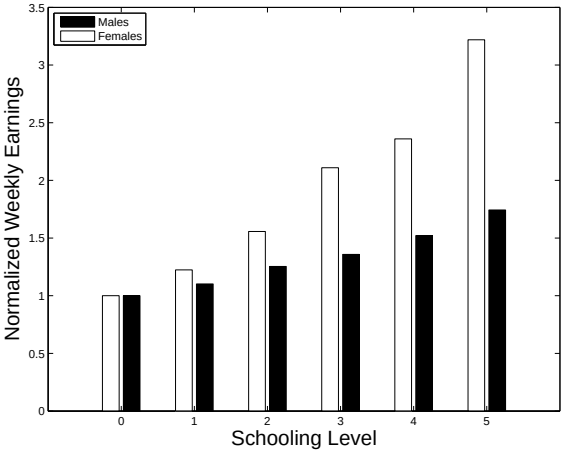
(a) Wages by schooling



(b) Hours by schooling

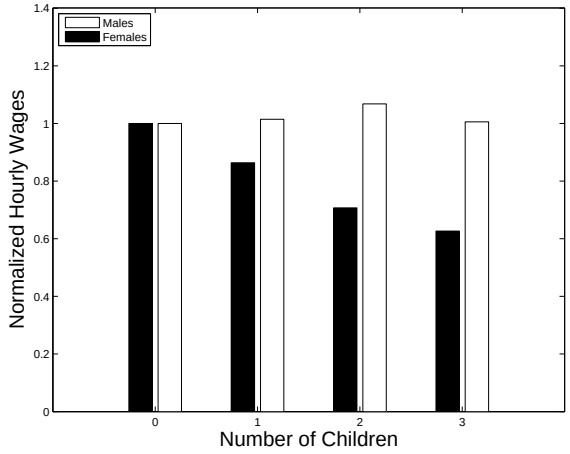


(c) Earnings by schooling

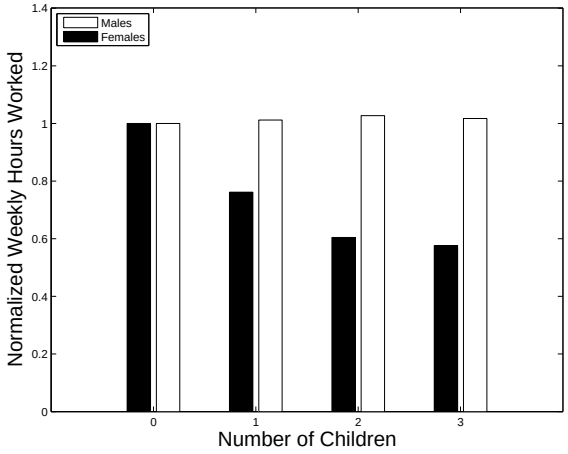


(d) Normalized earnings by schooling

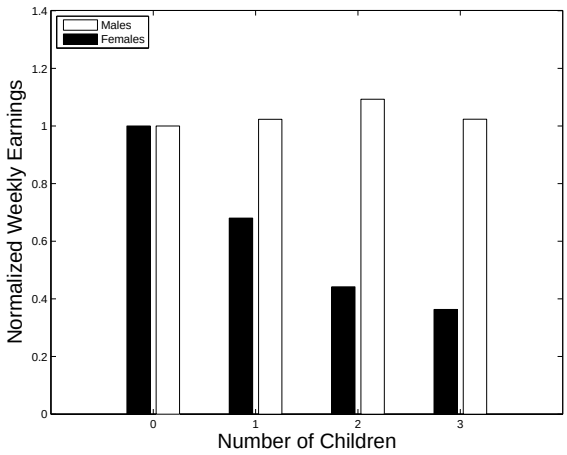
Figure B2: Gender Differences in Labor Market Outcomes by Schooling, Analytic Sample: Figure 2(a) compares hourly wages by schooling level and gender, Figure 2(b) compares weekly hours worked by schooling level and gender, and Figures 2(c) and 2(d) compare weekly earnings and normalized weekly earnings by schooling level and gender.



(a) Normalized wages by fertility



(b) Normalized hours by fertility



(c) Normalized earnings by fertility

Figure B3: Gender Differences in Labor Market Outcomes by Fertility, Analytic Sample: Figure 3(a) compares hourly wages by number of children and gender, Figure 3(b) compares weekly hours worked by number of children and gender, and Figure 3(c) compares normalized weekly earnings by number of children and gender.

Appendix B.2 Full Sample

Table B6 reports summary statistics of education, labor market outcomes and demographics for the full sample. Table B7 reports summary statistics of the BSAG maladjustment syndromes for the full sample.

Table B6: Summary Statistics of Demographics, Education and Labor Market Outcomes, Full Sample

	Both	Males	Females	
No Formal Education	0.126	0.114	0.138	***
	(0.332)	(0.317)	(0.345)	
CSE	0.124	0.111	0.137	***
	(0.330)	(0.315)	(0.344)	
O Level	0.341	0.306	0.375	***
	(0.474)	(0.461)	(0.484)	
A Level	0.141	0.184	0.0997	***
	(0.348)	(0.387)	(0.300)	
Higher Education	0.142	0.144	0.139	
	(0.349)	(0.351)	(0.346)	
Higher Degree	0.126	0.141	0.111	***
	(0.332)	(0.348)	(0.314)	
Hourly Wage	6.749	7.645	5.666	***
	(3.063)	(2.969)	(2.815)	
Weekly Hours Worked	36.71	43.54	28.71	***
	(12.54)	(7.917)	(12.23)	
Weekly Earnings	259.8	329.2	175.9	***
	(152.3)	(135.0)	(127.8)	
In Paid Work	0.792	0.902	0.685	***
	(0.406)	(0.297)	(0.464)	
Employee	0.680	0.744	0.618	***
	(0.467)	(0.437)	(0.486)	
Financial Difficulties	0.178	0.176	0.180	
	(0.382)	(0.381)	(0.384)	
London Before 16	0.409	0.410	0.409	
	(0.492)	(0.492)	(0.492)	
London at 33	0.305	0.303	0.306	
	(0.460)	(0.460)	(0.461)	
Female	0.483			
	(0.500)			
Observations	15,356	7,899	7,457	15,356

Notes: This table lists the summary statistics of demographics, education and labor market outcomes for the full sample of 15,356 individuals observed at age 11. For education categories and employment, entries are in the form of percentages divided by 100. Wages and weekly earnings are measured in 1992 British pounds. Employee means the percentage of individuals in the sample that are in paid work and not self-employed. Statistics are reported separately for both genders (Column (1)), for males (Column (2)) and for females (Column (3)). In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table B7: Summary Statistics of BSAG Syndromes, Full Sample

	Both	Males	Females	
Hostility Towards Adults	0.904	1.079	0.719	***
	(1.946)	(2.088)	(1.766)	
Hostility Towards Children	0.288	0.336	0.237	***
	(0.805)	(0.892)	(0.699)	
Anxiety for Acceptance by Adults	0.559	0.545	0.573	
	(1.212)	(1.188)	(1.237)	
Anxiety for Acceptance by Children	0.334	0.464	0.197	***
	(0.803)	(0.953)	(0.575)	
Restlessness	0.229	0.286	0.169	***
	(0.568)	(0.633)	(0.484)	
Inconsequential Behavior	1.433	1.887	0.953	***
	(1.999)	(2.278)	(1.513)	
Depression	1.049	1.196	0.893	***
	(1.546)	(1.614)	(1.454)	
Withdrawal	0.347	0.410	0.279	***
	(0.826)	(0.910)	(0.720)	
Unforthcomingness	1.606	1.630	1.582	
	(2.137)	(2.059)	(2.216)	
Writing Off of Adults and Adult Standards	1.019	1.263	0.760	***
	(1.703)	(1.911)	(1.406)	
Observations	15,356	7,899	7,457	15,356

Notes: This table lists the summary statistics of BSAG maladjustment syndromes for the full sample of 15,356 individuals observed at age 11. Measures are constructed using teachers' reports of misbehavior in school. For each maladjustment syndrome, a child receives a score, which is an integer between 0 and 15, with 15 indicating a persistent display of behavior described by the maladjustment syndrome. In the table, entries are averages for each syndrome for the full sample. Statistics are reported separately for both genders (Column (1)), for males (Column (2)) and for females (Column (3)). In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Appendix B.3 Analysis Sample, Stratified by SES

Table B8: Summary Statistics of Demographics, Education and Labor Market Outcomes, Subsamples by SES

	Both	High SES	Low SES	Diff
No Formal Education	0.112	0.0842	0.259	***
	(0.316)	(0.278)	(0.438)	
CSE	0.128	0.116	0.192	***
	(0.334)	(0.320)	(0.394)	
O Level	0.345	0.350	0.320	
	(0.475)	(0.477)	(0.467)	
A Level	0.147	0.159	0.0871	***
	(0.354)	(0.365)	(0.282)	
Higher Education	0.146	0.155	0.0992	***
	(0.354)	(0.362)	(0.299)	
Higher Degree	0.122	0.137	0.0431	***
	(0.327)	(0.343)	(0.203)	
Hourly Wage	6.636	6.831	5.599	***
	(3.053)	(3.071)	(2.730)	
Weekly Hours Worked	36.36	36.58	35.18	**
	(12.67)	(12.52)	(13.39)	
Weekly Earnings	252.5	260.6	209.1	***
	(152.5)	(153.6)	(138.4)	
In Paid Work	0.804	0.808	0.782	*
	(0.397)	(0.394)	(0.413)	
Employee	0.675	0.677	0.667	
	(0.468)	(0.468)	(0.472)	
Financial Difficulty	0.160			
	(0.367)			
London Before 16	0.355	0.366	0.302	***
	(0.479)	(0.482)	(0.459)	
London at 33	0.298	0.308	0.244	***
	(0.457)	(0.462)	(0.430)	
Female	0.507	0.503	0.523	
	(0.500)	(0.500)	(0.500)	
Observations	7241	6082	1159	7241

Notes: This table lists the summary statistics of demographics, education and labor market outcomes for the analytic sample of 7,241 individuals. For education categories, and employment, entries are in the form of percentages divided by 100. Wages and weekly earnings are measured in 1992 British pounds. Employee means the percentage of individuals in the sample that are in paid work and not self-employed. Statistics are reported separately for both SES groups (Column (1)), for high SES (Column (2)) and for low SES (Column (3)). In Column (4), *, ** and *** mean that differences between SES groups are significant at the 10, 5 and 1 percent levels, respectively.

Table B9: Summary Statistics of BSAG Syndromes, Subsamples by SES

	Both	High SES	Low SES	Diff
Hostility Towards Adults	0.763	0.698	1.104	***
	(1.753)	(1.647)	(2.198)	
Hostility Towards Children	0.239	0.216	0.361	***
	(0.718)	(0.675)	(0.902)	
Anxiety for Acceptance by Adults	0.515	0.481	0.690	***
	(1.152)	(1.098)	(1.392)	
Anxiety for Acceptance by Children	0.298	0.284	0.368	***
	(0.761)	(0.749)	(0.819)	
Restlessness	0.194	0.177	0.280	***
	(0.520)	(0.495)	(0.627)	
Inconsequential Behavior	1.262	1.165	1.770	***
	(1.869)	(1.776)	(2.229)	
Depression	0.932	0.857	1.327	***
	(1.454)	(1.382)	(1.732)	
Withdrawal	0.308	0.293	0.387	***
	(0.772)	(0.744)	(0.902)	
Unforthcomingness	1.477	1.415	1.805	***
	(2.034)	(1.991)	(2.219)	
Writing Off of Adults and Adult Standards	0.908	0.855	1.185	***
	(1.588)	(1.524)	(1.866)	
Observations	7241	6082	1159	7241

Notes: This table lists the summary statistics of the BSAG maladjustment syndromes for the analytic sample of 7,241 individuals. Measures are constructed using teachers' reports of misbehavior in school. For each maladjustment syndrome, a child receives a score, which is an integer between 0 and 15, with 15 indicating a persistent display of behavior described by the maladjustment syndrome. In the table, entries are averages for each syndrome for the analytic sample. Statistics are reported separately for all individuals (Column (1)), for individual that did not experience financial difficulties growing up (Column (2)) and for those that did (Column (3). In Column (4), *, ** and *** mean that differences between SES groups are significant at the 10, 5 and 1 percent levels, respectively.

Appendix C Benchmark Model, Sensitivity, and Generality

Appendix C.1 Estimates from the Benchmark Model

Table C1 reports the estimated correlation matrix of the three unobserved factors, separately by gender. Tables C2 and C3 report factor loadings mapping unobserved skills to BSAG measurements test scores, for males and females separately. Parameters estimates from the multinomial logit model of schooling choices are found in Table C4, where we report the marginal effects for ease of interpretation. Tables C5 and C6 report estimates from equations describing labor market outcomes. Tables 4 and 5 in the main paper are condensed versions of the tables reported here.

In addition, in Section 3.3.4 of the paper, we discuss how main results change if we condition on additional intermediate outcomes that occur before labor market outcomes are measured. The detailed results discussed in the paper are presented here. Tables C7 and C8 show how the coefficients on wages and hours change when additional intermediate outcomes are included. Table C9 reports how fertility outcomes are related to unobserved skills and schooling for males and females. Table C10 reports how occupational sorting is related to unobserved skills and schooling for males and females.

Table C1: Measurement System: Latent Factor Correlation Matrix

	Males		
	Externalizing	Internalizing	Cognition
Externalizing	1.000	0.776	-0.164
Internalizing	0.776	1.000	-0.471
Cognition	-0.164	-0.471	1.000
	Females		
Externalizing	1.000	0.807	-0.135
Internalizing	0.807	1.000	-0.415
Cognition	-0.135	-0.415	1.000

Notes: This table lists the estimated correlation matrix of the three latent skills from the measurement system, separately by gender.

Table C2: Measurement System: From Skills to Misbehaviors and Test Scores, Males

	Exter.	Inter.	Cog.	C.Size	P.GCE	LEA	N.Teac.	Con.
Hostile Towards Children	1.000	0.000	0.000	-0.002	-0.001	0.039	-0.000	0.242
	(.)	(.)	(.)	(0.001)	(0.000)	(0.059)	(0.001)	(0.063)
Hostile Towards Adults	1.639	0.206	0.026	-0.003	-0.003	0.009	-0.001	0.629
	(0.082)	(0.043)	(0.014)	(0.001)	(0.001)	(0.081)	(0.002)	(0.088)
Anxiety Towards Children	1.614	-0.335	-0.053	-0.001	-0.001	0.071	-0.001	0.252
	(0.074)	(0.036)	(0.010)	(0.001)	(0.000)	(0.060)	(0.002)	(0.065)
Anxiety Towards Adults	1.079	-0.328	-0.067	-0.002	-0.002	-0.001	0.002	0.338
	(0.068)	(0.045)	(0.012)	(0.001)	(0.001)	(0.058)	(0.002)	(0.066)
Inconsequential Behavior	2.100	0.074	-0.145	-0.002	-0.003	0.125	0.003	0.802
	(0.091)	(0.047)	(0.014)	(0.002)	(0.001)	(0.093)	(0.002)	(0.100)
Restless Behavior	0.778	-0.053	-0.058	-0.001	-0.001	0.054	-0.000	0.167
	(0.042)	(0.023)	(0.008)	(0.001)	(0.000)	(0.049)	(0.001)	(0.054)
Depression	0.000	1.000	0.000	-0.002	-0.003	0.146	-0.001	0.629
	(.)	(.)	(.)	(0.001)	(0.001)	(0.085)	(0.002)	(0.093)
Withdrawal	-0.983	1.132	0.137	0.001	-0.001	0.034	-0.000	0.234
	(0.078)	(0.050)	(0.010)	(0.001)	(0.000)	(0.069)	(0.002)	(0.075)
Unforthcomingness	-2.117	1.899	0.195	0.001	-0.002	0.134	0.003	0.588
	(0.143)	(0.088)	(0.018)	(0.002)	(0.001)	(0.105)	(0.002)	(0.114)
Write Off Adults and Standards	0.082	1.077	0.069	0.001	-0.002	0.068	-0.001	0.543
	(0.072)	(0.052)	(0.013)	(0.001)	(0.001)	(0.093)	(0.002)	(0.101)
Verbal Ability	0.000	0.000	1.000	0.020	0.017	0.051	-0.011	-1.204
	(.)	(.)	(.)	(0.002)	(0.001)	(0.107)	(0.003)	(0.120)
Reading Ability	-0.116	-0.070	0.832	0.020	0.016	-0.183	-0.006	-0.920
	(0.108)	(0.065)	(0.021)	(0.002)	(0.001)	(0.109)	(0.003)	(0.127)
Non-Verbal Ability	-0.149	0.068	0.898	0.018	0.014	-0.039	-0.011	-0.871
	(0.099)	(0.062)	(0.020)	(0.002)	(0.001)	(0.101)	(0.003)	(0.114)
Math Ability	-0.087	-0.107	0.889	0.018	0.019	0.014	-0.006	-1.074
	(0.087)	(0.054)	(0.019)	(0.002)	(0.001)	(0.109)	(0.003)	(0.124)

Notes: This table lists the parameter estimates of the measurement system (equation (1)) for the subsample of males. Standard errors in parentheses.

Table C3: Measurement System: From Skills to Misbehaviors and Test Scores, Females

	Exter.	Inter.	Cog.	C.Size	P.GCE	LEA	N.Teac.	Con.
Hostile Towards Children	1.000	0.000	0.000	-0.001	-0.002	-0.038	0.001	0.282
	(.)	(.)	(.)	(0.001)	(0.000)	(0.037)	(0.001)	(0.043)
Hostile Towards Adults	1.672	0.166	0.009	-0.005	-0.004	-0.003	0.000	0.615
	(0.080)	(0.042)	(0.012)	(0.001)	(0.001)	(0.065)	(0.002)	(0.076)
Anxiety Towards Children	1.288	-0.283	-0.033	-0.001	-0.001	-0.043	-0.000	0.240
	(0.066)	(0.035)	(0.008)	(0.001)	(0.000)	(0.032)	(0.001)	(0.039)
Anxiety Towards Adults	1.466	-0.380	-0.085	-0.002	-0.001	0.036	0.000	0.361
	(0.086)	(0.054)	(0.013)	(0.001)	(0.001)	(0.062)	(0.002)	(0.072)
Inconsequential Behavior	1.509	0.150	-0.107	-0.003	-0.004	-0.102	0.003	0.771
	(0.079)	(0.044)	(0.013)	(0.001)	(0.001)	(0.060)	(0.002)	(0.070)
Restless Behavior	0.554	-0.005	-0.055	0.000	-0.001	-0.034	0.000	0.156
	(0.036)	(0.022)	(0.007)	(0.001)	(0.000)	(0.032)	(0.001)	(0.039)
Depression	0.000	1.000	0.000	-0.004	-0.004	0.074	0.001	0.641
	(.)	(.)	(.)	(0.001)	(0.001)	(0.062)	(0.002)	(0.072)
Withdrawal	-0.957	0.935	0.099	-0.000	-0.001	-0.002	0.001	0.221
	(0.072)	(0.045)	(0.009)	(0.001)	(0.000)	(0.037)	(0.001)	(0.046)
Unforthcomingness	-2.750	2.161	0.187	-0.001	-0.002	0.219	0.002	0.544
	(0.178)	(0.106)	(0.019)	(0.002)	(0.001)	(0.086)	(0.002)	(0.096)
Write Off Adults and Standards	-0.341	1.086	0.069	-0.002	-0.003	-0.026	0.001	0.589
	(0.077)	(0.051)	(0.012)	(0.001)	(0.001)	(0.057)	(0.002)	(0.068)
Verbal Ability	0.000	0.000	1.000	0.020	0.014	-0.248	-0.009	-0.642
	(.)	(.)	(.)	(0.002)	(0.001)	(0.092)	(0.002)	(0.106)
Reading Ability	-0.101	-0.040	0.820	0.019	0.014	-0.522	-0.005	-0.508
	(0.130)	(0.075)	(0.021)	(0.002)	(0.001)	(0.087)	(0.003)	(0.102)
Non-Verbal Ability	-0.103	0.008	0.928	0.014	0.014	-0.235	-0.007	-0.546
	(0.122)	(0.071)	(0.021)	(0.002)	(0.001)	(0.089)	(0.003)	(0.103)
Math Ability	0.051	-0.189	0.879	0.016	0.017	-0.219	-0.006	-0.817
	(0.113)	(0.065)	(0.020)	(0.002)	(0.001)	(0.089)	(0.003)	(0.107)

Notes: This table lists the parameter estimates of the measurement system (equation (1)) for the sub-sample of females. Standard errors in parentheses.

Table C4: Education Attainment, Marginal Effects

	Males						Females					
	No Qual.	CSE	O-lvl	A-lvl	H.Edu	H.Deg	No Qual.	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	0.014	0.021	0.004	-0.006	-0.022	-0.011	0.003	-0.025	0.013	0.006	0.009	-0.005
	(0.003)	(0.010)	(0.019)	(0.017)	(0.015)	(0.007)	(0.003)	(0.012)	(0.021)	(0.013)	(0.016)	(0.006)
Internalizing Behavior	0.003	0.004	0.009	-0.005	-0.008	-0.003	0.014	0.034	-0.015	-0.015	-0.019	0.002
	(0.004)	(0.011)	(0.021)	(0.019)	(0.017)	(0.008)	(0.004)	(0.012)	(0.021)	(0.014)	(0.017)	(0.007)
Cognition	-0.063	-0.075	-0.064	0.051	0.069	0.081	-0.071	-0.102	0.003	0.055	0.057	0.058
	(0.005)	(0.008)	(0.014)	(0.012)	(0.010)	(0.007)	(0.006)	(0.009)	(0.015)	(0.009)	(0.011)	(0.006)
Mother Education	-0.027	-0.033	-0.046	0.027	0.049	0.031	-0.034	-0.044	-0.082	0.059	0.057	0.044
	(0.009)	(0.015)	(0.024)	(0.020)	(0.016)	(0.007)	(0.009)	(0.017)	(0.024)	(0.013)	(0.017)	(0.007)
Father Education	-0.031	-0.034	-0.006	-0.015	0.033	0.053	-0.029	-0.067	-0.050	0.048	0.060	0.039
	(0.012)	(0.018)	(0.028)	(0.023)	(0.018)	(0.009)	(0.011)	(0.020)	(0.027)	(0.015)	(0.018)	(0.007)
No Father Info.	-0.021	-0.026	-0.014	0.063	-0.044	0.042	-0.029	-0.095	0.061	0.065	-0.041	0.040
	(0.018)	(0.033)	(0.062)	(0.052)	(0.058)	(0.021)	(0.028)	(0.050)	(0.065)	(0.032)	(0.055)	(0.015)
Father in Skilled Oc.	-0.017	-0.049	-0.051	0.058	0.051	0.008	-0.018	-0.039	0.011	0.000	0.026	0.020
	(0.006)	(0.012)	(0.024)	(0.023)	(0.020)	(0.011)	(0.006)	(0.015)	(0.025)	(0.016)	(0.020)	(0.010)
Father in Managerial Oc.	-0.051	-0.092	-0.086	0.095	0.082	0.052	-0.052	-0.087	0.002	0.011	0.081	0.046
	(0.012)	(0.019)	(0.031)	(0.028)	(0.024)	(0.012)	(0.012)	(0.022)	(0.032)	(0.019)	(0.024)	(0.011)
Working Mother	-0.003	-0.006	0.015	0.004	-0.001	-0.010	-0.007	0.001	0.014	-0.017	0.010	-0.001
	(0.006)	(0.011)	(0.020)	(0.017)	(0.014)	(0.007)	(0.006)	(0.013)	(0.020)	(0.012)	(0.015)	(0.005)
London Dummy	-0.005	0.048	-0.000	-0.008	-0.013	-0.022	-0.012	0.059	0.013	-0.011	-0.046	-0.003
	(0.006)	(0.011)	(0.020)	(0.018)	(0.015)	(0.007)	(0.007)	(0.013)	(0.020)	(0.012)	(0.015)	(0.005)
Financial Difficulties	0.037	0.053	0.054	-0.054	-0.051	-0.039	0.049	0.050	-0.036	-0.063	0.018	-0.017
	(0.007)	(0.014)	(0.027)	(0.026)	(0.024)	(0.013)	(0.008)	(0.015)	(0.028)	(0.021)	(0.022)	(0.011)
Constant	-0.037	-0.031	0.280	-0.023	-0.096	-0.093	-0.038	-0.034	0.386	-0.091	-0.113	-0.110
	(0.007)	(0.014)	(0.027)	(0.023)	(0.021)	(0.010)	(0.007)	(0.017)	(0.027)	(0.015)	(0.020)	(0.010)

Notes: This table lists marginal effects estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment. We estimate educational attainment on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C5: Log Hourly Wages

	Males		Females	
Externalizing Behavior	0.055	0.064	0.023	0.013
	(0.018)	(0.017)	(0.024)	(0.020)
Internalizing Behavior	-0.099	-0.096	-0.043	-0.021
	(0.020)	(0.018)	(0.027)	(0.022)
Cognition	0.106	0.025	0.163	0.044
	(0.011)	(0.011)	(0.015)	(0.013)
CSE	.	0.035	.	0.062
		(0.032)		(0.043)
O-Level	.	0.163	.	0.182
		(0.029)		(0.036)
A-Level	.	0.222	.	0.330
		(0.030)		(0.045)
Higher Education	.	0.340	.	0.569
		(0.032)		(0.041)
Higher Degree	.	0.470	.	0.729
		(0.037)		(0.046)
London Dummy	0.208	0.200	0.172	0.149
	(0.017)	(0.016)	(0.021)	(0.018)
Financial Difficulties	-0.093	-0.048	-0.097	-0.045
	(0.022)	(0.020)	(0.028)	(0.024)
Constant	1.888	1.671	1.544	1.266
	(0.010)	(0.026)	(0.015)	(0.035)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages. We regress log hourly wages on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C6: Log Weekly Hours Worked

	Males		Females	
Externalizing Behavior	0.012	0.015	0.047	0.047
	(0.008)	(0.008)	(0.024)	(0.025)
Internalizing Behavior	-0.014	-0.018	-0.023	-0.020
	(0.010)	(0.009)	(0.027)	(0.026)
Cognition	-0.015	-0.007	0.078	0.021
	(0.005)	(0.006)	(0.016)	(0.017)
CSE	.	0.009	.	0.037
		(0.019)		(0.045)
O-Level	.	-0.016	.	0.098
		(0.017)		(0.040)
A-Level	.	-0.030	.	0.226
		(0.019)		(0.058)
Higher Education	.	-0.027	.	0.199
		(0.019)		(0.049)
Higher Degree	.	-0.047	.	0.301
		(0.021)		(0.057)
London Dummy	0.014	0.015	0.049	0.041
	(0.009)	(0.009)	(0.025)	(0.025)
Financial Difficulties	-0.002	-0.008	-0.020	0.004
	(0.010)	(0.011)	(0.030)	(0.030)
Constant	3.755	3.776	3.206	3.078
	(0.005)	(0.016)	(0.016)	(0.037)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked. We regress log weekly hours worked on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C7: Log Hourly Wages, Varying Controls of Intermediate Outcomes

	Males					Females				
Externalizing Behavior	0.064	0.052	0.052	0.049	0.049	0.013	0.023	0.034	0.040	0.036
	(0.017)	(0.016)	(0.016)	(0.015)	(0.015)	(0.020)	(0.022)	(0.020)	(0.020)	(0.018)
Internalizing Behavior	-0.096	-0.084	-0.082	-0.079	-0.073	-0.021	-0.032	-0.038	-0.042	-0.033
	(0.018)	(0.018)	(0.018)	(0.018)	(0.017)	(0.022)	(0.024)	(0.022)	(0.022)	(0.021)
Cognition	0.025	0.027	0.027	0.027	0.009	0.044	0.042	0.034	0.029	0.021
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.013)	(0.013)	(0.012)	(0.012)	(0.012)
CSE	0.035	0.040	0.041	0.028	0.006	0.062	0.063	0.057	0.036	0.005
	(0.032)	(0.031)	(0.031)	(0.031)	(0.030)	(0.043)	(0.043)	(0.040)	(0.039)	(0.034)
O-Level	0.163	0.154	0.157	0.142	0.099	0.182	0.181	0.148	0.122	0.052
	(0.029)	(0.029)	(0.029)	(0.029)	(0.028)	(0.036)	(0.036)	(0.034)	(0.033)	(0.030)
A-Level	0.222	0.216	0.219	0.211	0.144	0.330	0.329	0.272	0.261	0.149
	(0.030)	(0.030)	(0.031)	(0.031)	(0.030)	(0.045)	(0.045)	(0.041)	(0.040)	(0.037)
Higher Education	0.340	0.328	0.332	0.325	0.209	0.569	0.568	0.516	0.487	0.274
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.041)	(0.041)	(0.037)	(0.036)	(0.035)
Higher Degree	0.470	0.459	0.462	0.509	0.379	0.729	0.729	0.647	0.689	0.448
	(0.037)	(0.037)	(0.037)	(0.039)	(0.038)	(0.046)	(0.046)	(0.042)	(0.041)	(0.039)
Partner Dummy	.	0.148	0.137	0.128	0.107	.	0.020	0.085	0.076	0.067
		(0.022)	(0.024)	(0.024)	(0.023)		(0.028)	(0.026)	(0.026)	(0.024)
Number of Children	.	.	0.009	0.007	0.011	.	.	-0.108	-0.081	-0.066
			(0.007)	(0.007)	(0.007)			(0.008)	(0.008)	(0.007)
Experience	.	.	.	0.001	0.001	.	.	.	0.002	0.001
				(0.000)	(0.000)				(0.000)	(0.000)
Skilled Manual Occu.	.	.	.	.	0.061	.	.	.	.	0.073
					(0.022)					(0.035)
Skilled Non-manual Occu.	.	.	.	.	0.203	.	.	.	.	0.176
					(0.027)					(0.023)
Managerial Occu.	.	.	.	.	0.257	.	.	.	.	0.381
					(0.023)					(0.025)
London Dummy	0.200	0.202	0.203	0.204	0.178	0.149	0.149	0.133	0.132	0.126
	(0.016)	(0.016)	(0.016)	(0.016)	(0.015)	(0.018)	(0.018)	(0.017)	(0.017)	(0.016)
Financial Difficulties	-0.048	-0.047	-0.048	-0.045	-0.035	-0.045	-0.045	-0.026	-0.020	-0.018
	(0.020)	(0.020)	(0.020)	(0.020)	(0.019)	(0.024)	(0.024)	(0.022)	(0.022)	(0.020)
Constant	1.671	1.544	1.540	1.369	1.287	1.266	1.249	1.382	1.149	1.086
	(0.026)	(0.033)	(0.033)	(0.046)	(0.045)	(0.035)	(0.043)	(0.041)	(0.045)	(0.044)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages with different sets of controls. We regress log hourly wages of workers on a set of observable variables along with the three skills. The goal is to understand how the relationship between socio-emotional skills and wages changes as we change the set of additional regressors. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C8: Log Weekly Hours Worked, Varying Controls of Intermediate Outcomes

	Males					Females				
Externalizing Behavior	0.015	0.012	0.015	0.012	0.013	0.047	0.061	0.078	0.086	0.083
	(0.008)	(0.009)	(0.009)	(0.008)	(0.009)	(0.025)	(0.026)	(0.022)	(0.023)	(0.022)
Internalizing Behavior	-0.018	-0.014	-0.017	-0.014	-0.015	-0.020	-0.045	-0.045	-0.053	-0.045
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.026)	(0.027)	(0.024)	(0.026)	(0.024)
Cognition	-0.007	-0.006	-0.007	-0.006	-0.004	0.021	0.019	0.007	0.007	-0.000
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.017)	(0.017)	(0.015)	(0.015)	(0.014)
CSE	0.009	0.010	0.010	0.009	0.006	0.037	0.032	0.019	0.006	-0.018
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.045)	(0.044)	(0.038)	(0.038)	(0.036)
O-Level	-0.016	-0.017	-0.015	-0.017	-0.020	0.098	0.089	0.023	0.005	-0.040
	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.040)	(0.040)	(0.034)	(0.034)	(0.033)
A-Level	-0.030	-0.030	-0.029	-0.030	-0.033	0.226	0.214	0.097	0.086	0.003
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.058)	(0.058)	(0.048)	(0.047)	(0.046)
Higher Education	-0.027	-0.028	-0.027	-0.028	-0.032	0.199	0.186	0.081	0.059	-0.112
	(0.019)	(0.020)	(0.019)	(0.020)	(0.020)	(0.049)	(0.049)	(0.041)	(0.042)	(0.044)
Higher Degree	-0.047	-0.049	-0.046	-0.043	-0.049	0.301	0.292	0.124	0.141	-0.045
	(0.021)	(0.021)	(0.021)	(0.022)	(0.022)	(0.057)	(0.056)	(0.048)	(0.048)	(0.052)
Partner Dummy	.	0.022	0.014	0.013	0.011	.	-0.156	-0.020	-0.026	-0.032
		(0.015)	(0.016)	(0.016)	(0.016)		(0.035)	(0.030)	(0.030)	(0.029)
Number of Children	.	.	0.006	0.006	0.006	.	.	-0.222	-0.207	-0.193
			(0.004)	(0.004)	(0.004)			(0.012)	(0.012)	(0.011)
Experience	.	.	.	0.000	0.000	.	.	.	0.001	0.001
				(0.000)	(0.000)				(0.000)	(0.000)
Skilled Manual Occu.	.	.	.	.	0.025	.	.	.	.	0.234
					(0.013)					(0.042)
Skilled Non-manual Occu.	.	.	.	.	-0.023	.	.	.	.	0.131
					(0.016)					(0.025)
Managerial Occu.	.	.	.	.	0.015	.	.	.	.	0.316
					(0.014)					(0.032)
London Dummy	0.015	0.015	0.016	0.016	0.015	0.041	0.039	0.006	0.005	0.000
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.025)	(0.025)	(0.022)	(0.021)	(0.021)
Financial Difficulties	-0.008	-0.007	-0.008	-0.007	-0.007	0.004	0.001	0.040	0.044	0.038
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.030)	(0.030)	(0.026)	(0.026)	(0.025)
Constant	3.776	3.757	3.755	3.739	3.735	3.078	3.220	3.491	3.369	3.295
	(0.016)	(0.022)	(0.021)	(0.026)	(0.027)	(0.037)	(0.049)	(0.045)	(0.053)	(0.051)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to weekly work hours with different sets of controls. We regress log weekly hours worked of workers on a set of observable variables along with the three skills. The goal is to understand how the relationship between socio-emotional skills and hours changes as we change the set of additional regressors. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C9: Number of Children

	Males	Females
Externalizing Behavior	0.112	0.102
	(0.037)	(0.040)
Internalizing Behavior	-0.131	-0.056
	(0.044)	(0.046)
Cognition	-0.042	-0.037
	(0.029)	(0.028)
CSE	-0.127	-0.036
	(0.084)	(0.072)
O-Level	-0.101	-0.243
	(0.072)	(0.065)
A-Level	-0.174	-0.403
	(0.082)	(0.086)
Higher Education	-0.174	-0.455
	(0.088)	(0.078)
Higher Degree	-0.351	-0.626
	(0.096)	(0.088)
London Dummy	-0.066	-0.055
	(0.043)	(0.039)
Financial Difficulties	0.115	0.064
	(0.055)	(0.052)
Constant	1.491	1.877
	(0.067)	(0.060)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to the number of children. We model the number of children as a linear function of a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C10: Occupation Decision, Multinomial Logit

	Males			Females		
	Sk. Manual	Sk. Non-Manual	Managerial	Sk. Manual	Sk. Non-Manual	Managerial
Externalizing Behavior	0.143	-0.045	0.126	0.260	0.077	0.099
	(0.080)	(0.115)	(0.090)	(0.130)	(0.087)	(0.107)
Internalizing Behavior	-0.181	-0.254	-0.363	-0.375	-0.323	-0.366
	(0.097)	(0.137)	(0.113)	(0.158)	(0.105)	(0.127)
Cognition	-0.034	0.533	0.389	-0.133	0.203	0.101
	(0.078)	(0.109)	(0.087)	(0.109)	(0.068)	(0.082)
CSE	0.565	0.998	0.561	0.050	0.653	0.816
	(0.170)	(0.373)	(0.250)	(0.245)	(0.163)	(0.256)
O-Level	1.142	1.780	1.464	0.641	1.469	1.722
	(0.157)	(0.341)	(0.222)	(0.222)	(0.154)	(0.235)
A-Level	1.724	2.563	2.420	1.275	1.706	2.771
	(0.209)	(0.371)	(0.257)	(0.318)	(0.224)	(0.287)
Higher Education	1.210	2.664	3.361	1.284	0.964	3.945
	(0.268)	(0.402)	(0.290)	(0.314)	(0.240)	(0.272)
Higher Degree	0.610	3.276	4.705	0.272	1.578	4.891
	(0.545)	(0.564)	(0.471)	(0.704)	(0.356)	(0.377)
London Dummy	0.123	0.188	0.669	0.001	0.242	0.352
	(0.133)	(0.169)	(0.141)	(0.173)	(0.106)	(0.122)
Financial Difficulties	-0.399	-0.640	-0.522	0.212	-0.281	0.008
	(0.131)	(0.205)	(0.160)	(0.180)	(0.126)	(0.155)
Constant	-0.016	-1.938	-1.060	-1.758	-0.589	-2.096
	(0.145)	(0.319)	(0.206)	(0.205)	(0.145)	(0.221)

Notes: This table lists parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to the occupation decision at age 33. We estimate the relationship between occupation sorting and a set of observable variables along with the unobserved skills. The base category is the "unskilled manual occupation." The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Appendix C.2 Sensitivity Analysis

This appendix presents a host of sensitivity analyses to our benchmark model. We present estimates from the measurement system under a variety of different model and estimation assumptions. Appendix C.2.1 presents alternative set of results when we change the specification for educational attainment. It shows that our results are robust across different specifications of the educational choice. Appendix C.2.2 reports alternative sets of estimates when we change the set of controls used in the labor market outcome equations. It shows that our results do not depend on the inclusion of the London and financial difficulties controls. Appendix C.2.3 presents alternative estimates for when we allow for a fourth factor to load on the outcome equations. Appendix C.2.4 presents alternative estimates when we assume the three factors are independent. Appendix C.2.5 reports additional estimates for externalizing behavior when we change the dedicated measurement for each of the 3 factors. Independence allows us to relax some of the assumptions in the measurement system. Appendix C.2.6 presents alternative estimates when we re-estimate our benchmark model in one single step. That is, we jointly estimate the parameters in the measurement system with the outcome equations. These exercises together show how robust and consistent our findings are. They hold under a variety of different specifications and estimation procedures.

Appendix C.2.1 Alternative Assumptions on the Functional Form of Educational Attainment

Here, we present estimates from versions of the benchmark measurement system where the schooling equation is modeled under alternative functional form assumptions. In Table C11, we use years of schooling as the measure of educational attainment. In Table C12, we keep the six schooling categories as in the benchmark model and instead assume an ordered probit model for schooling. In Table C13, we use four coarser categories of schooling outcomes and a multinomial logit model. We verify that in all the aforementioned specifications, we obtain results that are consistent with results from the benchmark model. In particular, there is a significantly negative effect on schooling from the externalizing factor for boys, while we do not find a significant effect for girls. Lastly, in our benchmark results we report the marginal effect estimates from a multinomial logit for educational attainment. In Table C14, we report the parameter estimates used to compute the marginal effect estimates in the benchmark model.

Appendix C.2.2 Alternative Assumptions on the Set of Controls

We report additional results from the main econometric model as we change the set of controls. We first report estimates for hourly wages and hours worked where we do not control for living in London or experiencing financial difficulties during childhood (Tables C15 and C16). The controls for educational attainment are the same used in the benchmark model. We show that the positive relationship between externalizing behavior and earnings emerges as soon as we control for internalizing behavior and cognition.

We also report estimates for educational attainment, hourly wages and hours worked where we assume the sets of controls Z and X are empty (Tables C17, C18 and C19). We show that the negative relationship between externalizing behavior and educational attainment and the positive relationship between externalizing behavior and earnings remain in a model without any observable controls. While we continue to control for these variables in our benchmark model to eliminate potential biases, our main results are qualitatively robust to excluding them.

Appendix C.2.3 Alternative Assumptions on the Number of Factors

In this section, we test the assumption on the number of factors. First, if an important fourth factor has been omitted, then the model with only three factors should make poor predictions on sample covariances between outcomes and choices. In Tables C20 and C21, we present the simulated covariances between schooling levels and outcomes. The tables show that our model with three factors has a good sample fit, suggesting that the benchmark model adequately accounts for the observed relationship between choices and outcomes.

In addition, we re-estimate the model under the assumption that there are four unobserved factors underlying childhood classroom misbehaviors and include the fourth factor, in addition to externalizing behavior, internalizing behavior, and cognition, in the choice and outcome equations. Tables C22, C23, and C24 report the estimation results from the schooling, hourly wage, and weekly hours worked, by gender respectively.

For males, the fourth factor is insignificant in the schooling choice equation and adding the factor does not affect the coefficients of externalizing skill in the schooling equation in any material way. In determining wages and hours, the fourth factor does have a negative and significant coefficient in the wage equation and a positive and significant coefficient in the hours equation. Including the fourth factor reduces the point estimates of externalizing in the outcome equations slightly without changing the significance level. The bottom line is that, for males, the externalizing skill carries a significant schooling penalty and a significant

wage premium even after including a fourth factor.

For females, the fourth factor is insignificant in the schooling equation and adding the fourth factor does not affect the main result that externalizing behavior does not significantly affect schooling for females. In the outcome equations, the fourth factor is significantly positively correlated with wages and significantly positively correlated with hours. This factor might be capturing a residual factor that improves labor market outcomes without affecting schooling. However, including this factor barely changes point estimates of externalizing's impact on wages and hours. The main result that the externalizing skill carries an earnings premium specifically through increasing hours worked for females continues to hold even after including a fourth factor.

Appendix C.2.4 Alternative Assumptions that Allow for Independent Factors

In this section, we report estimates from a measurement system where the three latent factors are assumed to be independent from each other. Since we assume independent factors, we can relax the identification assumption of three dedicated measure and assume only one dedicated measure (verbal ability as a dedicated measure for cognition) and one semi-dedicated measure (depression as a measure for internalizing and cognition). All other measures are allowed to have nonzero factor loadings.

The estimated measurement system is reported in Table C25 and C26 for boys and girls respectively. The estimates in the schooling equation are found in Table C27, those in the wages equation in Table C28, and those in the hours equation in Table C29.

In this specification, the externalizing factor is found to significantly lower schooling and increase wages and hours and hence earnings for males, while the effects for females are weaker than in the benchmark model but in general point in the same direction.

Appendix C.2.5 Alternative Assumptions on Dedicated Measures

In this section, we vary which BSAG measures are used as dedicated measures of externalizing and internalizing behaviors and re-estimate the model. We report the loadings of the externalizing behavior on all measurements, for all possible pairs of dedicated measurements of the two socio-emotional skills in Tables C30 and C31 for males and females. A measure of externalizing skill with a loading of "1" indicates that in that specification that measure is chosen as the dedicated measure of externalizing skill. A measure of internalizing skill with a loading of "0" indicates that in that specification that measure is chosen as the dedicated measure of internalizing skill, and hence does not load on externalizing. Finally, we maintain

throughout that verbal ability is the dedicated measure of cognition and hence always loads zero on externalizing.

We summarize the effects of the externalizing skill on the schooling, wage, and hours equations for each possible pair of dedicated measure for the male sample in Table C32 and for the female sample in Table C33. Table C32 suggests that the externalizing skill reduces educational attainment in all specifications and in most of the specifications it significantly increases wages for males. Even in cases where externalizing no longer predicts a wage premium, it is never significantly negatively associated with any labor market outcomes. For females, consistent with the benchmark result, the effect of externalizing skill on schooling is inconclusive (Table C33). However, the positive effect that externalizing has on hours is almost always significant in all specifications. Again, there is no single specification in which the effect of externalizing goes significantly in the opposite direction to what is presented in the benchmark model.[1] Finally, it is worth noting that in cases where externalizing is not associated with significantly higher earnings for males, the latent factor loads heavily on depression, which is negatively associated with earnings. There is no econometric reason to rule out this type of skill even though it runs counter to the notion that internalizing (and not externalizing) should capture depression. This issues gets at the fundamental identification problem discussed in Almlund et al. (2011). We discuss this point in greater detail in Section 3.4.1 of the main text.

Appendix C.2.6 Joint Estimation of the Benchmark Econometric Model

In this section, we present estimates when the measurement system for the unobserved skills is estimated jointly with the choice and outcome equations. Tables C34 and C35 report the estimates of the measurement systems, for males and females respectively. The estimates display minimal differences compared to the estimates from the two-step estimation procedure from Tables C2 and C3 in the paper.

Tables C36, C37, and C38 present the estimates of the choice equation (schooling) and the two main outcome equations (hourly wage and weekly hours worked) by gender. Compared to the benchmark estimates from Table C4 in the main paper, externalizing behavior still tends to decrease schooling, especially for boys, albeit the effects appear smaller and less significant in the joint estimation. The negative impact from the internalizing behavior and the positive impact from cognition on schooling continue to hold in the joint estimation. In addition, the impact of externalizing behavior on wages and hours from the joint estimation

[1] We plot the effect on weekly earnings from a one-standard-deviation increase in externalizing for each different choice of dedicated factor measurements in Figure 2 of the main text. The figure is discussed in Section 3.4.1.

are almost identical to what the benchmark estimation produces (see Tables C5 and C6 in the paper).

Consistency of results across methods is reassuring. It suggests that, whether or not we use later labor market information to aid in the identification of the unobserved skills that underlie childhood classroom misbehavior, the three unobserved skills exhibit stable relationships with labor market outcomes.

Table C11: Education Attainment - Years of Education

	Males	Females
Externalizing Behavior	-0.130	0.071
	(0.076)	(0.089)
Internalizing Behavior	-0.077	-0.144
	(0.088)	(0.100)
Cognition	1.004	0.780
	(0.061)	(0.062)
Mother Education	0.545	0.887
	(0.089)	(0.088)
Father Education	0.754	0.863
	(0.098)	(0.095)
No Father Info.	0.338	0.356
	(0.266)	(0.234)
Father in Skilled Oc.	0.287	0.178
	(0.106)	(0.113)
Father in Managerial Oc.	0.935	0.797
	(0.126)	(0.131)
Working Mother	-0.088	0.003
	(0.078)	(0.078)
London Dummy	-0.245	-0.203
	(0.081)	(0.081)
Financial Difficulties	-0.453	-0.114
	(0.126)	(0.123)
Constant	12.574	12.016
	(0.127)	(0.133)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to educational attainment, measured by years of schooling. We estimate educational attainment on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C12: Education Attainment - Ordered Probit

	Males	Females
Externalizing Behavior	-0.100	0.025
	(0.036)	(0.038)
Internalizing Behavior	-0.058	-0.125
	(0.042)	(0.042)
Cognition	0.581	0.592
	(0.028)	(0.029)
Mother Education	0.263	0.415
	(0.047)	(0.047)
Father Education	0.347	0.402
	(0.052)	(0.051)
No Father Info.	0.211	0.325
	(0.122)	(0.130)
Father in Skilled Oc.	0.211	0.179
	(0.047)	(0.048)
Father in Managerial Oc.	0.534	0.468
	(0.061)	(0.063)
Working Mother	-0.021	0.027
	(0.038)	(0.039)
London Dummy	-0.108	-0.073
	(0.040)	(0.041)
Financial Difficulties	-0.369	-0.357
	(0.053)	(0.050)
Cutoff 1	-1.346	-1.193
	(0.060)	(0.060)
Cutoff 2	-0.715	-0.462
	(0.067)	(0.067)
Cutoff 3	0.378	0.883
	(0.073)	(0.075)
Cutoff 4	1.037	1.265
	(0.077)	(0.077)
Cutoff 5	1.737	2.003
	(0.083)	(0.084)

Notes: This table contains parameter estimates from an ordered probit model used to link socio-emotional and cognitive skills to educational attainment. We estimate educational attainment on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C13: Education Attainment - 4 Levels

	Males			Females		
	CSE & O-lvl	A-levels	H.Edu & Deg	CSE & O-lvl	A-levels	H.Edu & Deg
Externalizing Behavior	-0.153	-0.192	-0.349	-0.003	0.053	0.035
	(0.081)	(0.098)	(0.105)	(0.083)	(0.134)	(0.113)
Internalizing Behavior	-0.095	-0.189	-0.193	-0.289	-0.432	-0.399
	(0.104)	(0.125)	(0.131)	(0.106)	(0.165)	(0.134)
Cognition	0.997	1.471	2.031	1.196	1.831	2.029
	(0.097)	(0.110)	(0.115)	(0.100)	(0.131)	(0.121)
Mother Education	0.411	0.682	0.958	0.473	1.182	1.279
	(0.216)	(0.233)	(0.232)	(0.206)	(0.239)	(0.224)
Father Education	0.561	0.554	1.136	0.384	0.969	1.135
	(0.276)	(0.294)	(0.292)	(0.253)	(0.286)	(0.267)
No Father Info.	0.356	0.670	0.565	0.460	1.042	0.733
	(0.397)	(0.471)	(0.507)	(0.610)	(0.685)	(0.660)
Father in Skilled Oc.	0.120	0.589	0.585	0.273	0.325	0.551
	(0.144)	(0.178)	(0.183)	(0.136)	(0.205)	(0.179)
Father in Managerial Oc.	0.651	1.414	1.688	0.830	1.037	1.634
	(0.265)	(0.288)	(0.291)	(0.259)	(0.318)	(0.291)
Working Mother	0.065	0.067	-0.022	0.172	-0.008	0.180
	(0.136)	(0.156)	(0.158)	(0.131)	(0.173)	(0.154)
London Dummy	0.264	0.124	-0.026	0.430	0.199	0.112
	(0.148)	(0.168)	(0.168)	(0.141)	(0.183)	(0.165)
Financial Difficulties	-0.527	-0.999	-1.176	-0.913	-1.534	-0.969
	(0.149)	(0.193)	(0.202)	(0.139)	(0.253)	(0.187)
Constant	1.871	0.716	0.605	1.905	-0.019	0.210
	(0.180)	(0.209)	(0.219)	(0.167)	(0.231)	(0.210)

Notes: This table contains parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment, where educational attainment can take on only 4 levels. We reduce the 6 educational groups by combining individuals with a CSE and O-levels qualifications and those with higher education and higher degrees. We estimate educational attainment on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C14: Parameter Estimates: Multinomial Logit for Educational Attainment

	Males					Females				
	CSE	O-lvl	A-lvl	H.Edu	H.Deg	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	-0.094	-0.281	-0.316	-0.427	-0.486	-0.239	-0.028	-0.003	0.003	-0.184
	(0.107)	(0.088)	(0.099)	(0.114)	(0.136)	(0.104)	(0.092)	(0.129)	(0.113)	(0.168)
Internalizing Behavior	-0.037	-0.052	-0.095	-0.126	-0.132	-0.050	-0.324	-0.429	-0.407	-0.254
	(0.125)	(0.106)	(0.121)	(0.138)	(0.162)	(0.116)	(0.106)	(0.153)	(0.132)	(0.189)
Cognition	0.638	1.194	1.572	1.783	2.740	0.744	1.485	1.985	1.824	2.884
	(0.118)	(0.099)	(0.108)	(0.117)	(0.145)	(0.107)	(0.100)	(0.130)	(0.121)	(0.157)
Mother Education	0.259	0.458	0.691	0.876	1.099	0.388	0.545	1.255	1.054	1.771
	(0.244)	(0.218)	(0.229)	(0.234)	(0.247)	(0.230)	(0.216)	(0.245)	(0.236)	(0.253)
Father Education	0.348	0.663	0.617	0.882	1.579	0.125	0.514	1.055	0.975	1.550
	(0.302)	(0.281)	(0.295)	(0.299)	(0.308)	(0.283)	(0.258)	(0.288)	(0.275)	(0.289)
No Father Info.	0.202	0.415	0.715	0.180	1.167	-0.083	0.732	1.204	0.360	1.576
	(0.466)	(0.429)	(0.475)	(0.587)	(0.553)	(0.689)	(0.619)	(0.682)	(0.708)	(0.714)
Father in Skilled Oc.	-0.098	0.242	0.616	0.686	0.512	0.099	0.405	0.385	0.542	0.856
	(0.167)	(0.150)	(0.177)	(0.198)	(0.237)	(0.154)	(0.147)	(0.207)	(0.189)	(0.287)
Father in Managerial Oc.	0.215	0.879	1.498	1.602	1.990	0.459	1.093	1.188	1.576	2.193
	(0.314)	(0.275)	(0.293)	(0.309)	(0.333)	(0.284)	(0.265)	(0.320)	(0.299)	(0.368)
Working Mother	0.006	0.103	0.082	0.059	-0.102	0.148	0.167	-0.022	0.200	0.111
	(0.160)	(0.142)	(0.156)	(0.165)	(0.183)	(0.148)	(0.138)	(0.175)	(0.163)	(0.189)
London Dummy	0.569	0.104	0.070	0.026	-0.265	0.679	0.277	0.146	-0.025	0.175
	(0.167)	(0.153)	(0.167)	(0.174)	(0.194)	(0.158)	(0.150)	(0.187)	(0.177)	(0.198)
Financial Difficulties	-0.287	-0.657	-1.024	-1.108	-1.464	-0.668	-1.102	-1.615	-0.922	-1.441
	(0.174)	(0.159)	(0.193)	(0.219)	(0.287)	(0.159)	(0.152)	(0.252)	(0.198)	(0.302)
Constant	0.504	1.516	0.702	0.210	-0.787	0.541	1.563	-0.047	0.109	-1.882
	(0.207)	(0.185)	(0.207)	(0.233)	(0.263)	(0.187)	(0.174)	(0.230)	(0.215)	(0.329)

Notes: This table contains parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment. We estimate educational attainment on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C15: Changing Set of Controls: Log Hourly Wages

	Males					Females				
Externalizing Behavior	-0.066	0.145	0.051	0.055	0.064	-0.061	0.231	0.038	0.023	0.013
	(0.010)	(0.019)	(0.017)	(0.018)	(0.017)	(0.014)	(0.027)	(0.024)	(0.024)	(0.020)
Internalizing Behavior	.	-0.255	-0.106	-0.099	-0.096	.	-0.313	-0.058	-0.043	-0.021
		(0.019)	(0.019)	(0.020)	(0.018)		(0.027)	(0.027)	(0.027)	(0.022)
Cognition	.	.	0.115	0.106	0.025	.	.	0.177	0.163	0.044
			(0.011)	(0.011)	(0.011)			(0.015)	(0.015)	(0.013)
CSE	.	.	.	.	0.035	.	.	.	.	0.062
					(0.032)					(0.043)
O-Level	.	.	.	.	0.163	.	.	.	.	0.182
					(0.029)					(0.036)
A-Level	.	.	.	.	0.222	.	.	.	.	0.330
					(0.030)					(0.045)
Higher Education	.	.	.	.	0.340	.	.	.	.	0.569
					(0.032)					(0.041)
Higher Degree	.	.	.	.	0.470	.	.	.	.	0.729
					(0.037)					(0.046)
London Dummy	.	.	.	0.208	0.200	.	.	.	0.172	0.149
				(0.017)	(0.016)				(0.021)	(0.018)
Financial Difficulties	.	.	.	-0.093	-0.048	.	.	.	-0.097	-0.045
				(0.022)	(0.020)				(0.028)	(0.024)
Constant	1.943	1.925	1.929	1.888	1.671	1.578	1.559	1.570	1.544	1.266
	(0.009)	(0.009)	(0.009)	(0.010)	(0.026)	(0.013)	(0.013)	(0.012)	(0.015)	(0.035)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages. We regress log hourly wages on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C16: Changing Set of Controls: Log Weekly Hours Worked

	Males					Females				
Externalizing Behavior	0.007	-0.001	0.014	0.012	0.015	0.003	0.172	0.055	0.047	0.047
	(0.004)	(0.007)	(0.008)	(0.008)	(0.008)	(0.014)	(0.026)	(0.025)	(0.024)	(0.025)
Internalizing Behavior	.	0.007	-0.015	-0.014	-0.018	.	-0.178	-0.034	-0.023	-0.020
		(0.007)	(0.009)	(0.010)	(0.009)		(0.025)	(0.027)	(0.027)	(0.026)
Cognition	.	.	-0.014	-0.015	-0.007	.	.	0.081	0.078	0.021
			(0.005)	(0.005)	(0.006)			(0.016)	(0.016)	(0.017)
CSE	.	.	.	.	0.009	.	.	.	.	0.037
					(0.019)					(0.045)
O-Level	.	.	.	.	-0.016	.	.	.	.	0.098
					(0.017)					(0.040)
A-Level	.	.	.	.	-0.030	.	.	.	.	0.226
					(0.019)					(0.058)
Higher Education	.	.	.	.	-0.027	.	.	.	.	0.199
					(0.019)					(0.049)
Higher Degree	.	.	.	.	-0.047	.	.	.	.	0.301
					(0.021)					(0.057)
London Dummy	.	.	.	0.014	0.015	.	.	.	0.049	0.041
				(0.009)	(0.009)				(0.025)	(0.025)
Financial Difficulties	.	.	.	-0.002	-0.008	.	.	.	-0.020	0.004
				(0.010)	(0.011)				(0.030)	(0.030)
Constant	3.760	3.760	3.758	3.755	3.776	3.218	3.208	3.213	3.206	3.078
	(0.004)	(0.004)	(0.004)	(0.005)	(0.016)	(0.014)	(0.013)	(0.014)	(0.016)	(0.037)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked. We regress log weekly hours worked on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C17: No Controls: Multinomial Logit for Educational Attainment

	Males					Females				
	CSE	O-lvl	A-lvl	H.Edu	H.Deg	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Factor	-0.102	-0.169	-0.170	-0.247	-0.326	-0.198	0.013	0.009	0.103	-0.033
	(0.094)	(0.079)	(0.088)	(0.105)	(0.132)	(0.097)	(0.085)	(0.129)	(0.111)	(0.154)
Internalizing Factor	-0.046	-0.176	-0.255	-0.325	-0.274	-0.100	-0.410	-0.496	-0.549	-0.412
	(0.121)	(0.102)	(0.116)	(0.131)	(0.161)	(0.114)	(0.104)	(0.153)	(0.132)	(0.175)
Cognition	0.648	1.239	1.649	1.891	2.885	0.791	1.570	2.186	2.012	3.245
	(0.117)	(0.098)	(0.108)	(0.118)	(0.146)	(0.104)	(0.098)	(0.128)	(0.121)	(0.157)
Mother Education	.	.	.	.	.	.	.	.	.	.
Father Education	.	.	.	.	.	.	.	.	.	.
No Father Info.	.	.	.	.	.	.	.	.	.	.
Father in Skilled Oc.	.	.	.	.	.	.	.	.	.	.
Father in Managerial Oc.	.	.	.	.	.	.	.	.	.	.
Working Mother	.	.	.	.	.	.	.	.	.	.
London Dummy	.	.	.	.	.	.	.	.	.	.
Financial Difficulties	.	.	.	.	.	.	.	.	.	.
Constant	0.676	1.901	1.423	1.054	0.271	0.851	2.032	0.542	0.927	-0.194
	(0.116)	(0.103)	(0.108)	(0.115)	(0.147)	(0.106)	(0.102)	(0.123)	(0.116)	(0.161)

Notes: This table contains parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment. In this version of the model, we do not control for any observable variables, so the educational choice only depends on the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C18: No Controls: Log Hourly Wages

	Males	Females
Externalizing Factor	0.045	0.036
	(0.016)	(0.025)
Internalizing Factor	-0.098	-0.056
	(0.019)	(0.027)
Cognition	0.118	0.179
	(0.011)	(0.015)
CSE	.	.
O-Level	.	.
A-Level	.	.
Higher Education	.	.
Higher Degree	.	.
London Dummy	.	.
Financial Difficulties	.	.
Constant	1.930	1.571
	(0.009)	(0.012)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages. In this version of the model, we do not control for any observable variables, so log hourly wages only depend on the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C19: No Controls: Log Weekly Hours Worked

	Males	Females
Externalizing Factor	0.013	0.063
	(0.007)	(0.025)
Internalizing Factor	-0.015	-0.042
	(0.009)	(0.027)
Cognition	-0.014	0.077
	(0.005)	(0.016)
CSE	.	.
O-Level	.	.
A-Level	.	.
Higher Education	.	.
Higher Degree	.	.
London Dummy	.	.
Financial Difficulties	.	.
Constant	3.758	3.214
	(0.004)	(0.014)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked. In this version of the model, we do not control for any observable variables, so log hours worked only depend on the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C20: Sample Covariance vs Simulated Covariance, Males

	Log-Hourly Wages		Log-Hours Worked	
	Sample	Simu.	Sample	Simu.
No Formal Edu.	-0.028	-0.025	0.002	0.002
CSE	-0.025	-0.019	0.003	0.003
O-Level	-0.022	-0.021	0.001	0.002
A-Level	0.003	0.005	-0.002	-0.002
Higher Education	0.024	0.022	-0.001	-0.001
Higher Degree	0.048	0.038	-0.004	-0.003

Notes: This table compares the data and the benchmark-model simulated variance-covariance matrix of choices and outcomes for males.

Table C21: Sample Covariance vs Simulated Covariance, Females

	Log-Hourly Wages		Log-Hours Worked	
	Sample	Simu.	Sample	Simu.
No Formal Edu.	-0.040	-0.034	-0.017	-0.015
CSE	-0.035	-0.029	-0.015	-0.013
O-Level	-0.039	-0.030	-0.012	-0.008
A-Level	0.007	0.008	0.010	0.009
Higher Education	0.048	0.044	0.012	0.012
Higher Degree	0.058	0.041	0.022	0.015

Notes: This table compares the data and the benchmark-model simulated variance-covariance matrix of choices and outcomes for females.

Table C22: Four Factors: Educational Attainment, Multinomial Logit

	Males					Females				
	CSE	O-lvl	A-lvl	H.Edu	H.Deg	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	-0.099	-0.181	-0.189	-0.308	-0.433	-0.148	0.099	0.104	0.133	-0.068
	(0.125)	(0.113)	(0.130)	(0.151)	(0.182)	(0.131)	(0.117)	(0.186)	(0.158)	(0.220)
Internalizing Behavior	-0.021	-0.141	-0.214	-0.244	-0.186	-0.089	-0.415	-0.496	-0.504	-0.325
	(0.150)	(0.136)	(0.155)	(0.176)	(0.208)	(0.149)	(0.139)	(0.209)	(0.176)	(0.242)
Cognition	0.635	1.176	1.543	1.764	2.712	0.752	1.489	2.012	1.844	2.895
	(0.126)	(0.106)	(0.116)	(0.128)	(0.155)	(0.118)	(0.111)	(0.143)	(0.134)	(0.171)
Additional Factor	-0.249	-0.115	-0.085	0.068	0.129	0.223	-0.065	-0.259	-0.073	-0.108
	(0.244)	(0.205)	(0.240)	(0.282)	(0.296)	(0.200)	(0.184)	(0.256)	(0.238)	(0.263)
Mother Education	0.271	0.476	0.710	0.899	1.120	0.381	0.560	1.280	1.069	1.789
	(0.253)	(0.225)	(0.237)	(0.243)	(0.255)	(0.233)	(0.220)	(0.248)	(0.239)	(0.257)
Father Education	0.351	0.665	0.619	0.892	1.596	0.111	0.526	1.078	0.987	1.561
	(0.315)	(0.291)	(0.304)	(0.311)	(0.318)	(0.285)	(0.262)	(0.292)	(0.279)	(0.294)
No Father Info.	0.230	0.432	0.724	0.186	1.169	-0.083	0.750	1.245	0.384	1.621
	(0.469)	(0.424)	(0.474)	(0.589)	(0.554)	(0.719)	(0.661)	(0.732)	(0.750)	(0.757)
Father in Skilled Oc.	-0.094	0.240	0.612	0.684	0.520	0.092	0.407	0.390	0.541	0.848
	(0.171)	(0.154)	(0.180)	(0.200)	(0.241)	(0.156)	(0.148)	(0.210)	(0.192)	(0.290)
Father in Managerial Oc.	0.206	0.865	1.484	1.593	1.998	0.419	1.077	1.180	1.561	2.184
	(0.318)	(0.279)	(0.297)	(0.313)	(0.337)	(0.293)	(0.275)	(0.328)	(0.308)	(0.376)
Working Mother	0.000	0.094	0.072	0.047	-0.112	0.158	0.176	-0.008	0.211	0.126
	(0.162)	(0.144)	(0.158)	(0.168)	(0.186)	(0.151)	(0.141)	(0.179)	(0.166)	(0.192)
London Dummy	0.575	0.100	0.065	0.022	-0.265	0.666	0.253	0.110	-0.052	0.139
	(0.171)	(0.156)	(0.171)	(0.178)	(0.198)	(0.160)	(0.152)	(0.190)	(0.179)	(0.201)
Financial Difficulties	-0.286	-0.665	-1.036	-1.122	-1.489	-0.669	-1.106	-1.617	-0.926	-1.453
	(0.177)	(0.161)	(0.195)	(0.221)	(0.290)	(0.162)	(0.153)	(0.258)	(0.200)	(0.306)
Constant	0.496	1.545	0.735	0.233	-0.765	0.543	1.577	-0.063	0.122	-1.835
	(0.217)	(0.192)	(0.214)	(0.242)	(0.272)	(0.197)	(0.181)	(0.242)	(0.224)	(0.334)

Notes: This table contains parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment, while including a fourth factor. We estimate educational attainment on a set of observable variables along with the unobserved factors. The coefficients on all four factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C23: Four Factors: Log Hourly Wages

	Males	Females
Externalizing Behavior	0.058	0.013
	(0.014)	(0.017)
Internalizing Behavior	-0.098	-0.018
	(0.016)	(0.019)
Cognition	0.021	0.038
	(0.011)	(0.013)
Additional Factor	-0.093	0.190
	(0.019)	(0.016)
CSE	0.017	0.016
	(0.036)	(0.045)
O-Level	0.152	0.190
	(0.032)	(0.038)
A-Level	0.213	0.375
	(0.035)	(0.055)
Higher Education	0.345	0.577
	(0.040)	(0.048)
Higher Degree	0.481	0.739
	(0.044)	(0.056)
London Dummy	0.200	0.151
	(0.016)	(0.017)
Financial Difficulties	-0.046	-0.047
	(0.020)	(0.022)
Constant	1.671	1.266
	(0.029)	(0.035)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages, while including a fourth factor. We regress log hourly wages on a set of observable variables along with the unobserved factors. The coefficients on all four factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C24: Four Factors: Log Weekly Hours Worked

	Males	Females
Externalizing Behavior	0.011	0.048
	(0.008)	(0.021)
Internalizing Behavior	-0.012	-0.016
	(0.009)	(0.023)
Cognition	-0.003	0.014
	(0.006)	(0.017)
Additional Factor	0.037	0.217
	(0.010)	(0.022)
CSE	0.019	-0.017
	(0.020)	(0.052)
O-Level	-0.011	0.106
	(0.018)	(0.045)
A-Level	-0.027	0.276
	(0.020)	(0.067)
Higher Education	-0.030	0.207
	(0.022)	(0.060)
Higher Degree	-0.053	0.310
	(0.023)	(0.068)
London Dummy	0.015	0.042
	(0.009)	(0.023)
Financial Difficulties	-0.009	0.001
	(0.011)	(0.028)
Constant	3.775	3.079
	(0.017)	(0.040)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked, while including a fourth factor. We regress log weekly hours worked on a set of observable variables along with the unobserved factors. The coefficients on all four factors have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C25: Independent Factors: Measurement System, Males

	Exter.	Inter.	Cog.	C.Size	P.GCE	LEA	N.Teac .	Con.
Hostile Towards Children	1.000	0.555	-0.063	-0.002	-0.001	0.047	-0.001	0.241
	(.)	(0.058)	(0.069)	(0.001)	(0.000)	(0.059)	(0.001)	(0.063)
Hostile Towards Adults	1.445	1.123	-0.110	-0.003	-0.003	0.032	-0.001	0.623
	(0.073)	(0.057)	(0.074)	(0.001)	(0.001)	(0.080)	(0.002)	(0.087)
Anxiety Towards Children	1.477	0.596	-0.065	-0.002	-0.001	0.076	-0.001	0.263
	(0.045)	(0.036)	(0.014)	(0.001)	(0.000)	(0.060)	(0.002)	(0.065)
Anxiety Towards Adults	0.982	0.295	-0.053	-0.002	-0.001	-0.001	0.001	0.351
	(0.039)	(0.031)	(0.010)	(0.001)	(0.001)	(0.058)	(0.002)	(0.066)
Inconsequential Behavior	1.832	1.242	-0.278	-0.003	-0.003	0.154	0.002	0.807
	(0.069)	(0.036)	(0.012)	(0.002)	(0.001)	(0.093)	(0.002)	(0.099)
Restless Behavior	0.720	0.386	-0.089	-0.001	-0.001	0.061	-0.001	0.171
	(0.033)	(0.040)	(0.014)	(0.001)	(0.000)	(0.049)	(0.001)	(0.054)
Depression	0.000	1.000	-0.189	-0.003	-0.002	0.185	-0.002	0.605
	(.)	(.)	(0.008)	(0.001)	(0.001)	(0.084)	(0.002)	(0.093)
Withdrawal	-0.920	0.488	-0.063	0.001	-0.001	0.062	-0.000	0.197
	(0.059)	(0.020)	(0.010)	(0.001)	(0.000)	(0.068)	(0.002)	(0.074)
Unforthcomingness	-2.743	0.644	-0.110	0.002	-0.001	0.189	0.003	0.529
	(0.038)	(0.039)	(0.018)	(0.002)	(0.001)	(0.103)	(0.002)	(0.113)
Write Off Adults and Standards	-0.112	1.064	-0.175	0.001	-0.001	0.109	-0.001	0.512
	(0.058)	(0.070)	(0.013)	(0.001)	(0.001)	(0.092)	(0.002)	(0.100)
Verbal Ability	0.000	0.000	1.000	0.022	0.016	0.019	-0.009	-1.251
	(.)	(.)	(.)	(0.002)	(0.001)	(0.108)	(0.003)	(0.121)
Reading Ability	-0.092	-0.151	0.856	0.022	0.015	-0.214	-0.003	-0.959
	(-0.092)	(0.043)	(0.021)	(0.002)	(0.001)	(0.110)	(0.003)	(0.127)
Non-Verbal Ability	-0.178	-0.033	0.893	0.020	0.013	-0.066	-0.009	-0.916
	(-0.178)	(0.069)	(0.020)	(0.002)	(0.001)	(0.101)	(0.003)	(0.114)
Math Ability	-0.083	-0.172	0.917	0.020	0.018	-0.022	-0.004	-1.113
	(-0.083)	(0.072)	(0.019)	(0.002)	(0.001)	(0.109)	(0.003)	(0.124)

Notes: This table contains the parameter estimates of the measurement system for males, assuming independent factors. Standard errors in parentheses.

Table C26: Independent Factors: Measurement System, Females

	Exter.	Inter.	Cog.	C.Size	P.GCE	LEA	N.Teac .	Con.
Hostile Towards Children	1.000	0.537	-0.062	-0.001	-0.002	-0.008	0.001	0.253
	(.)	(0.019)	(0.006)	(0.001)	(0.000)	(0.035)	(0.001)	(0.042)
Hostile Towards Adults	1.444	1.101	-0.101	-0.005	-0.003	0.052	0.001	0.564
	(0.080)	(0.037)	(0.011)	(0.001)	(0.001)	(0.059)	(0.002)	(0.069)
Anxiety Towards Children	1.072	0.425	-0.040	-0.001	-0.001	-0.017	0.000	0.218
	(0.063)	(0.017)	(0.006)	(0.001)	(0.000)	(0.032)	(0.001)	(0.039)
Anxiety Towards Adults	1.237	0.422	-0.081	-0.002	-0.001	0.062	0.001	0.338
	(0.084)	(0.025)	(0.010)	(0.001)	(0.001)	(0.057)	(0.002)	(0.067)
Inconsequential Behavior	1.226	0.974	-0.205	-0.003	-0.003	-0.056	0.004	0.725
	(0.077)	(0.035)	(0.011)	(0.001)	(0.001)	(0.057)	(0.002)	(0.069)
Restless Behavior	0.434	0.301	-0.078	0.000	-0.001	-0.019	0.001	0.142
	(0.035)	(0.015)	(0.006)	(0.001)	(0.000)	(0.032)	(0.001)	(0.040)
Depression	0.000	1.000	-0.177	-0.004	-0.003	0.110	0.002	0.598
	(.)	(.)	(0.011)	(0.001)	(0.001)	(0.067)	(0.002)	(0.077)
Withdrawal	-0.842	0.373	-0.035	0.001	-0.001	0.006	0.001	0.206
	(0.061)	(0.021)	(0.007)	(0.001)	(0.000)	(0.042)	(0.001)	(0.051)
Unforthcomingness	-3.114	0.624	-0.085	0.001	-0.002	0.220	0.002	0.538
	(0.165)	(0.038)	(0.014)	(0.002)	(0.001)	(0.091)	(0.002)	(0.101)
Write Off Adults and Standards	-0.472	0.881	-0.120	-0.001	-0.003	0.005	0.001	0.555
	(0.067)	(0.031)	(0.011)	(0.001)	(0.001)	(0.061)	(0.002)	(0.071)
Verbal Ability	0.000	0.000	1.000	0.018	0.015	-0.233	-0.013	-0.632
	(.)	(.)	(.)	(0.002)	(0.001)	(0.083)	(0.002)	(0.098)
Reading Ability	-0.115	-0.161	0.820	0.018	0.014	-0.515	-0.009	-0.498
	(0.109)	(0.037)	(0.016)	(0.002)	(0.001)	(0.086)	(0.003)	(0.103)
Non-Verbal Ability	-0.083	-0.109	0.930	0.012	0.014	-0.224	-0.011	-0.539
	(0.097)	(0.034)	(0.016)	(0.002)	(0.001)	(0.083)	(0.003)	(0.098)
Math Ability	0.056	-0.223	0.898	0.015	0.018	-0.210	-0.009	-0.806
	(0.094)	(0.032)	(0.017)	(0.002)	(0.001)	(0.086)	(0.003)	(0.103)

Notes: This table contains the parameter estimates of the measurement system for females, assuming independent factors. Standard errors in parentheses.

Table C27: Independent Factors: Educational Attainment, Multinomial Logit

	Males					Females				
	CSE	O-lvl	A-lvl	H.Edu	H.Deg	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	-0.049	-0.129	-0.110	-0.173	-0.227	-0.063	0.085	0.067	0.139	-0.025
	(0.042)	(0.037)	(0.043)	(0.049)	(0.062)	(0.061)	(0.053)	(0.083)	(0.067)	(0.099)
Internalizing Behavior	-0.118	-0.300	-0.374	-0.506	-0.575	-0.241	-0.327	-0.425	-0.400	-0.468
	(0.105)	(0.092)	(0.105)	(0.118)	(0.151)	(0.071)	(0.066)	(0.093)	(0.082)	(0.114)
Cognition	0.679	1.292	1.686	1.934	2.899	0.800	1.567	2.100	1.925	2.940
	(0.119)	(0.099)	(0.109)	(0.120)	(0.146)	(0.100)	(0.092)	(0.117)	(0.108)	(0.136)
Mother Education	0.258	0.457	0.690	0.875	1.090	0.384	0.541	1.252	1.050	1.774
	(0.245)	(0.220)	(0.230)	(0.237)	(0.249)	(0.226)	(0.213)	(0.240)	(0.233)	(0.251)
Father Education	0.357	0.669	0.621	0.885	1.579	0.110	0.500	1.043	0.962	1.538
	(0.303)	(0.281)	(0.293)	(0.300)	(0.306)	(0.279)	(0.256)	(0.283)	(0.273)	(0.287)
No Father Info.	0.248	0.473	0.771	0.234	1.214	-0.055	0.762	1.235	0.388	1.602
	(0.483)	(0.436)	(0.485)	(0.604)	(0.569)	(0.693)	(0.644)	(0.703)	(0.724)	(0.728)
Father in Skilled Oc.	-0.090	0.250	0.625	0.695	0.533	0.094	0.404	0.383	0.542	0.846
	(0.168)	(0.152)	(0.177)	(0.198)	(0.238)	(0.154)	(0.147)	(0.208)	(0.190)	(0.286)
Father in Managerial Oc.	0.209	0.869	1.486	1.590	1.994	0.443	1.088	1.184	1.574	2.185
	(0.311)	(0.274)	(0.292)	(0.308)	(0.330)	(0.282)	(0.264)	(0.315)	(0.296)	(0.365)
Working Mother	0.008	0.106	0.085	0.062	-0.091	0.151	0.170	-0.018	0.200	0.106
	(0.159)	(0.142)	(0.156)	(0.165)	(0.183)	(0.149)	(0.138)	(0.175)	(0.163)	(0.189)
London Dummy	0.572	0.111	0.078	0.035	-0.250	0.668	0.264	0.134	-0.037	0.165
	(0.169)	(0.154)	(0.168)	(0.176)	(0.195)	(0.157)	(0.149)	(0.186)	(0.177)	(0.198)
Financial Difficulties	-0.280	-0.649	-1.019	-1.101	-1.458	-0.668	-1.105	-1.622	-0.926	-1.462
	(0.174)	(0.160)	(0.193)	(0.220)	(0.284)	(0.160)	(0.152)	(0.256)	(0.198)	(0.305)
Constant	0.507	1.524	0.703	0.207	-0.807	0.485	1.411	-0.245	-0.088	-2.113
	(0.205)	(0.182)	(0.203)	(0.231)	(0.263)	(0.186)	(0.172)	(0.231)	(0.215)	(0.326)

Notes: This table contains parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment. We estimate educational attainment on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C28: Independent Factors: Log Hourly Wages

	Males	Females
Externalizing Behavior	0.038	0.009
	(0.005)	(0.012)
Internalizing Behavior	-0.024	-0.010
	(0.012)	(0.010)
Cognition	0.054	0.048
	(0.011)	(0.011)
CSE	0.039	0.062
	(0.032)	(0.043)
O-Level	0.166	0.182
	(0.029)	(0.036)
A-Level	0.224	0.332
	(0.031)	(0.045)
Higher Education	0.341	0.570
	(0.032)	(0.041)
Higher Degree	0.471	0.732
	(0.037)	(0.046)
London Dummy	0.201	0.149
	(0.016)	(0.018)
Financial Difficulties	-0.047	-0.045
	(0.020)	(0.024)
Constant	1.663	1.260
	(0.026)	(0.035)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages. We regress log hourly wages on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C29: Independent Factors: Log Weekly Hours Worked

	Males	Females
Externalizing Behavior	0.008	0.023
	(0.003)	(0.014)
Internalizing Behavior	-0.000	0.022
	(0.007)	(0.013)
Cognition	-0.002	0.019
	(0.006)	(0.015)
CSE	0.010	0.036
	(0.019)	(0.045)
O-Level	-0.015	0.097
	(0.017)	(0.040)
A-Level	-0.030	0.227
	(0.019)	(0.058)
Higher Education	-0.027	0.198
	(0.019)	(0.049)
Higher Degree	-0.048	0.302
	(0.021)	(0.057)
London Dummy	0.015	0.041
	(0.009)	(0.025)
Financial Difficulties	-0.008	0.004
	(0.011)	(0.030)
Constant	3.775	3.076
	(0.016)	(0.037)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked. We regress log weekly hours worked on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C30: Alternative Dedicated Measures: Loadings on Externalizing Behavior, Males

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]
Hostile Towards Children	1	0.729	0.695	2.069	0.538	1.398	1	0.589	0.853	1.380	0.473	1.327	1	0.543	1.071	1.787	0.427	1.447	1	0.855	0.699	1.240	0.451	1.166
	(.)	(0.035)	(0.037)	(0.120)	(0.023)	(0.064)	(.)	(0.022)	(0.030)	(0.068)	(0.015)	(0.060)	(.)	(0.019)	(0.049)	(0.100)	(0.014)	(0.061)	(.)	(0.042)	(0.035)	(0.094)	(0.025)	(0.058)
Hostile Towards Adults	1.639	1	1.080	3.090	0.801	2.097	1.717	1	1.459	2.273	0.832	2.481	1.836	1	2.028	3.199	0.787	2.616	1.697	1	1.005	1.868	0.735	1.700
	(0.082)	(.)	(0.057)	(0.174)	(0.037)	(0.098)	(0.068)	(.)	(0.052)	(0.111)	(0.026)	(0.103)	(0.077)	(.)	(0.084)	(0.168)	(0.025)	(0.107)	(0.093)	(.)	(0.049)	(0.142)	(0.036)	(0.085)
Anxiety Towards Children	1.614	1.079	1	2.957	0.811	1.988	1.253	0.767	1	1.734	0.590	1.688	1.235	0.648	1	2.105	0.512	1.697	1.812	1.342	1	1.802	0.731	1.754
	(0.073)	(0.050)	(.)	(0.174)	(0.034)	(0.094)	(0.049)	(0.026)	(.)	(0.086)	(0.019)	(0.076)	(0.051)	(0.021)	(.)	(0.120)	(0.017)	(0.076)	(0.093)	(0.064)	(.)	(0.128)	(0.034)	(0.085)
Anxiety Towards Adults	1.079	0.697	0.706	1	0.534	1.295	0.726	0.448	0.576	1	0.348	0.932	0.704	0.356	0.725	1	0.284	0.967	1.276	0.890	0.679	1	0.501	1.123
	(0.068)	(0.047)	(0.046)	(.)	(0.036)	(0.079)	(0.042)	(0.023)	(0.033)	(.)	(0.017)	(0.057)	(0.042)	(0.020)	(0.046)	(.)	(0.017)	(0.058)	(0.088)	(0.057)	(0.046)	(.)	(0.034)	(0.077)
Inconsequential Behavior	2.100	1.339	1.494	3.853	1	2.513	2.082	1.179	1.612	2.629	1	2.913	2.207	1.137	2.373	3.629	1	3.023	2.336	1.617	1.334	2.387	1	2.233
	(0.091)	(0.058)	(0.065)	(0.216)	(.)	(0.128)	(0.069)	(0.038)	(0.061)	(0.128)	(.)	(0.127)	(0.075)	(0.034)	(0.092)	(0.189)	(.)	(0.125)	(0.104)	(0.075)	(0.059)	(0.174)	(.)	(0.114)
Restless Behavior	0.778	0.513	0.539	1.441	0.377	1	0.704	0.412	0.565	0.911	0.332	1	0.736	0.377	0.772	1.214	0.306	1	0.898	0.668	0.506	0.890	0.376	1
	(0.042)	(0.027)	(0.031)	(0.093)	(0.022)	(.)	(0.032)	(0.017)	(0.026)	(0.052)	(0.014)	(.)	(0.033)	(0.015)	(0.041)	(0.074)	(0.014)	(.)	(0.052)	(0.035)	(0.029)	(0.071)	(0.023)	(.)
Depression	0	0	0	0	0	0	0.778	0.441	0.780	0.973	0.408	1.461	1.156	0.594	1.286	1.970	0.490	1.611	-0.260	-0.135	-0.137	-0.088	-0.060	-0.253
	(.)	(.)	(.)	(.)	(.)	(.)	(0.053)	(0.030)	(0.043)	(0.081)	(0.024)	(0.079)	(0.057)	(0.028)	(0.070)	(0.127)	(0.024)	(0.089)	(0.093)	(0.059)	(0.050)	(0.081)	(0.037)	(0.086)
Withdrawal	-0.983	-0.665	-0.557	-1.688	-0.514	-0.928	0	0	0	0	0	0	0.295	0.151	0.358	0.570	0.133	0.433	-1.102	-0.802	-0.695	-1.030	-0.424	-1.085
	(0.078)	(0.056)	(0.047)	(0.146)	(0.040)	(0.082)	(.)	(.)	(.)	(.)	(.)	(.)	(0.037)	(0.017)	(0.040)	(0.063)	(0.015)	(0.049)	(0.101)	(0.070)	(0.048)	(0.084)	(0.039)	(0.086)
Unforthcomingness	-2.117	-1.372	-1.441	-3.711	-1.085	-2.239	-0.623	-0.318	-0.037	-0.785	-0.171	0.009	0	0	0	0	0	0	-2.550	-1.627	-1.494	-2.523	-1.152	-2.698
	(0.142)	(0.103)	(0.091)	(0.284)	(0.074)	(0.158)	(0.063)	(0.042)	(0.051)	(0.086)	(0.029)	(0.080)	(.)	(.)	(.)	(.)	(.)	(.)	(0.186)	(0.124)	(0.087)	(0.177)	(0.075)	(0.160)
Write Off Adults and Standards	0.082	0.017	0.129	0.408	0.006	0.381	0.934	0.544	0.997	1.236	0.492	1.683	1.295	0.675	1.412	2.272	0.570	1.852	0	0	0	0	0	0
	(0.072)	(0.049)	(0.050)	(0.123)	(0.038)	(0.083)	(0.057)	(0.029)	(0.044)	(0.085)	(0.025)	(0.083)	(0.061)	(0.027)	(0.071)	(0.133)	(0.024)	(0.092)	(.)	(.)	(.)	(.)	(.)	(.)
Verbal Ability	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Reading Ability	-0.116	-0.058	-0.066	-0.268	-0.048	-0.128	-0.175	-0.099	-0.132	-0.198	-0.079	-0.267	-0.216	-0.099	-0.236	-0.343	-0.097	-0.288	-0.129	-0.072	-0.078	-0.117	-0.040	-0.113
	(0.109)	(0.072)	(0.075)	(0.190)	(0.057)	(0.129)	(0.070)	(0.042)	(0.073)	(0.096)	(0.033)	(0.103)	(0.070)	(0.036)	(0.075)	(0.121)	(0.030)	(0.098)	(0.128)	(0.088)	(0.075)	(0.125)	(0.054)	(0.121)
Non-Verbal Ability	-0.149	-0.084	-0.105	-0.293	-0.080	-0.163	-0.091	-0.051	-0.015	-0.110	-0.037	-0.088	-0.083	-0.044	-0.084	-0.110	-0.041	-0.101	-0.167	-0.082	-0.088	-0.149	-0.074	-0.176
	(0.098)	(0.067)	(0.069)	(0.178)	(0.051)	(0.117)	(0.064)	(0.038)	(0.069)	(0.088)	(0.029)	(0.097)	(0.064)	(0.033)	(0.069)	(0.110)	(0.028)	(0.089)	(0.117)	(0.080)	(0.068)	(0.115)	(0.049)	(0.111)
Math Ability	-0.087	-0.038	-0.062	-0.222	-0.046	-0.109	-0.183	-0.097	-0.100	-0.218	-0.082	-0.249	-0.219	-0.117	-0.256	-0.356	-0.096	-0.290	-0.071	-0.033	-0.058	-0.098	-0.046	-0.095
	(0.086)	(0.059)	(0.061)	(0.152)	(0.045)	(0.104)	(0.056)	(0.033)	(0.059)	(0.076)	(0.026)	(0.080)	(0.054)	(0.028)	(0.058)	(0.096)	(0.023)	(0.077)	(0.104)	(0.070)	(0.059)	(0.102)	(0.044)	(0.098)

Notes: This table contains the factor loadings for externalizing behavior for males under the different assumptions on dedicated measures.

Table C31: Alternative Dedicated Measures: Loadings on Externalizing Behavior, Females

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]
Hostile Towards Children	1	0.732	0.854	0.858	0.735	2.366	1	0.547	1.041	1.692	0.654	2.718	1	0.575	1.114	1.132	0.579	1.744	1	0.815	0.958	3.044	0.976	3.290
	(.)	(0.032)	(0.035)	(0.043)	(0.035)	(0.125)	(.)	(0.022)	(0.043)	(0.079)	(0.021)	(0.117)	(.)	(0.020)	(0.040)	(0.048)	(0.020)	(0.070)	(.)	(0.034)	(0.043)	(0.181)	(0.045)	(0.164)
Hostile Towards Adults	1.340	1	1.220	1.300	1.130	3.466	1.887	1	1.856	2.927	1.147	4.634	2.036	1	2.032	2.089	1.071	3.186	1.589	1	1.491	4.403	1.436	5.129
	(0.060)	(.)	(0.055)	(0.067)	(0.049)	(0.177)	(0.065)	(.)	(0.071)	(0.136)	(0.036)	(0.193)	(0.069)	(.)	(0.072)	(0.086)	(0.035)	(0.123)	(0.067)	(.)	(0.065)	(0.253)	(0.061)	(0.246)
Anxiety Towards Children	0.906	0.799	1	0.924	0.803	2.596	1.001	0.513	1	1.525	0.604	2.546	0.983	0.510	1	1.024	0.516	1.572	1.070	0.919	1	3.227	1.066	3.542
	(0.044)	(0.038)	(.)	(0.049)	(0.041)	(0.141)	(0.037)	(0.022)	(.)	(0.077)	(0.023)	(0.122)	(0.036)	(0.018)	(.)	(0.045)	(0.020)	(0.071)	(0.050)	(0.042)	(.)	(0.202)	(0.057)	(0.189)
Anxiety Towards Adults	1.024	0.884	0.992	1	0.892	2.964	1.078	0.567	1.093	1	0.630	2.658	1.031	0.535	1.034	1	0.549	1.638	1.191	0.966	1.111	1	1.176	3.828
	(0.059)	(0.049)	(0.055)	(.)	(0.054)	(0.186)	(0.048)	(0.028)	(0.055)	(.)	(0.028)	(0.149)	(0.049)	(0.024)	(0.050)	(.)	(0.025)	(0.087)	(0.066)	(0.052)	(0.061)	(.)	(0.070)	(0.227)
Inconsequential Behavior	1.156	0.901	1.017	1.086	1	3.114	1.691	0.918	1.691	2.444	1	3.904	1.811	0.966	1.816	1.854	1	2.907	1.408	0.985	1.318	3.814	1	4.337
	(0.060)	(0.046)	(0.056)	(0.064)	(.)	(0.192)	(0.061)	(0.032)	(0.068)	(0.119)	(.)	(0.200)	(0.062)	(0.032)	(0.070)	(0.080)	(.)	(0.131)	(0.065)	(0.048)	(0.069)	(0.245)	(.)	(0.251)
Restless Behavior	0.389	0.312	0.355	0.387	0.328	1	0.569	0.288	0.554	0.805	0.314	1	0.579	0.314	0.582	0.593	0.318	1	0.471	0.371	0.452	1.317	0.430	1
	(0.026)	(0.020)	(0.024)	(0.028)	(0.025)	(.)	(0.025)	(0.014)	(0.030)	(0.048)	(0.016)	(.)	(0.026)	(0.013)	(0.029)	(0.032)	(0.016)	(.)	(0.028)	(0.020)	(0.028)	(0.103)	(0.027)	(.)
Depression	0	0	0	0	0	0	1.004	0.545	1.057	1.466	0.612	2.135	1.356	0.713	1.335	1.402	0.741	2.138	0.228	0.017	0.282	-0.242	0.181	1.149
	(.)	(.)	(.)	(.)	(.)	(.)	(0.054)	(0.031)	(0.063)	(0.096)	(0.032)	(0.133)	(0.059)	(0.031)	(0.069)	(0.081)	(0.032)	(0.105)	(0.058)	(0.042)	(0.054)	(0.164)	(0.052)	(0.159)
Withdrawal	-0.704	-0.571	-0.695	-0.623	-0.556	-1.871	0	0	0	0	0	0	0.230	0.135	0.200	0.227	0.134	0.326	-0.528	-0.554	-0.546	-2.295	-0.547	-1.630
	(0.047)	(0.045)	(0.039)	(0.044)	(0.047)	(0.143)	(.)	(.)	(.)	(.)	(.)	(.)	(0.035)	(0.018)	(0.040)	(0.039)	(0.021)	(0.057)	(0.052)	(0.045)	(0.043)	(0.173)	(0.057)	(0.137)
Unforthcomingness	-2.282	-1.607	-1.675	-1.900	-2.039	-5.597	-0.692	-0.417	-0.655	-0.882	-0.344	-1.830	0	0	0	0	0	0	-2.085	-1.526	-1.719	-6.804	-1.608	-5.153
	(0.113)	(0.111)	(0.094)	(0.116)	(0.127)	(0.370)	(0.086)	(0.054)	(0.090)	(0.118)	(0.050)	(0.208)	(.)	(.)	(.)	(.)	(.)	(.)	(0.134)	(0.106)	(0.102)	(0.450)	(0.139)	(0.356)
Write Off Adults and Standards	-0.254	-0.177	-0.175	-0.178	-0.246	-0.749	0.748	0.392	0.749	1.178	0.463	1.652	1.089	0.592	1.089	1.143	0.592	1.736	0	0	0	0	0	0
	(0.052)	(0.044)	(0.045)	(0.050)	(0.050)	(0.149)	(0.051)	(0.028)	(0.057)	(0.083)	(0.029)	(0.124)	(0.055)	(0.027)	(0.062)	(0.069)	(0.030)	(0.094)	(.)	(.)	(.)	(.)	(.)	(.)
Verbal Ability	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Reading Ability	-0.068	-0.078	-0.106	-0.086	-0.079	-0.296	-0.161	-0.094	-0.155	-0.194	-0.088	-0.317	-0.135	-0.103	-0.181	-0.158	-0.087	-0.288	-0.107	-0.085	-0.078	-0.382	-0.063	-0.337
	(0.094)	(0.077)	(0.085)	(0.086)	(0.080)	(0.249)	(0.079)	(0.043)	(0.082)	(0.116)	(0.046)	(0.195)	(0.077)	(0.040)	(0.078)	(0.078)	(0.041)	(0.120)	(0.100)	(0.077)	(0.091)	(0.296)	(0.090)	(0.289)
Non-Verbal Ability	-0.051	-0.049	-0.074	-0.083	-0.063	-0.186	-0.080	-0.036	-0.086	-0.087	-0.059	-0.185	-0.088	-0.048	-0.098	-0.100	-0.046	-0.158	-0.085	-0.051	-0.059	-0.212	-0.090	-0.216
	(0.086)	(0.068)	(0.078)	(0.078)	(0.074)	(0.225)	(0.072)	(0.040)	(0.075)	(0.106)	(0.042)	(0.181)	(0.069)	(0.036)	(0.072)	(0.072)	(0.037)	(0.111)	(0.089)	(0.069)	(0.081)	(0.264)	(0.081)	(0.260)
Math Ability	0.047	0.020	0.013	0.018	0.015	0.010	-0.133	-0.071	-0.134	-0.189	-0.083	-0.280	-0.181	-0.123	-0.205	-0.183	-0.102	-0.362	-0.008	0.021	0.018	0.043	0.027	-0.108
	(0.082)	(0.066)	(0.075)	(0.076)	(0.071)	(0.217)	(0.071)	(0.039)	(0.072)	(0.106)	(0.040)	(0.170)	(0.068)	(0.036)	(0.069)	(0.070)	(0.036)	(0.107)	(0.086)	(0.067)	(0.080)	(0.258)	(0.079)	(0.247)

Notes: This table contains the factor loadings for externalizing behavior for females under the different assumptions on dedicated measures.

Table C32: Alternative Dedicated Measures: Effects of Externalizing Behavior on Schooling and Labor Market Outcomes, Males

Intern. Meas.	Extern. Meas.	Wages	Hours	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Depression	Hostility C.	0.064	0.015	-0.094	-0.281	-0.316	-0.427	-0.486
		(0.017)	(0.008)	(0.107)	(0.088)	(0.099)	(0.114)	(0.136)
Depression	Hostility A.	0.067	0.013	-0.107	-0.207	-0.221	-0.358	-0.487
		(0.018)	(0.009)	(0.126)	(0.105)	(0.121)	(0.138)	(0.177)
Depression	Anxiety C.	0.050	0.010	-0.075	-0.192	-0.176	-0.277	-0.237
		(0.013)	(0.007)	(0.097)	(0.081)	(0.094)	(0.109)	(0.132)
Depression	Anxiety A.	0.060	0.018	-0.145	-0.282	-0.295	-0.427	-0.569
		(0.017)	(0.009)	(0.092)	(0.075)	(0.086)	(0.099)	(0.129)
Depression	Inconseq.	0.065	0.017	-0.050	-0.205	-0.213	-0.298	-0.343
		(0.016)	(0.009)	(0.120)	(0.106)	(0.121)	(0.139)	(0.172)
Depression	Restless.	0.050	0.011	-0.105	-0.271	-0.255	-0.379	-0.491
		(0.014)	(0.007)	(0.089)	(0.073)	(0.084)	(0.102)	(0.131)
Withdrawal	Hostility C.	0.014	0.006	-0.114	-0.270	-0.298	-0.408	-0.459
		(0.009)	(0.005)	(0.070)	(0.061)	(0.070)	(0.079)	(0.098)
Withdrawal	Hostility A.	0.016	0.006	-0.128	-0.303	-0.346	-0.495	-0.570
		(0.011)	(0.005)	(0.087)	(0.077)	(0.089)	(0.103)	(0.128)
Withdrawal	Anxiety C.	0.005	0.001	-0.168	-0.283	-0.365	-0.471	-0.529
		(0.010)	(0.005)	(0.074)	(0.063)	(0.075)	(0.089)	(0.114)
Withdrawal	Anxiety A.	0.018	0.006	-0.105	-0.250	-0.287	-0.412	-0.461
		(0.010)	(0.005)	(0.067)	(0.059)	(0.068)	(0.078)	(0.105)
Withdrawal	Inconseq.	0.012	0.006	-0.116	-0.280	-0.329	-0.468	-0.597
		(0.010)	(0.005)	(0.081)	(0.073)	(0.085)	(0.098)	(0.124)
Withdrawal	Restless.	0.005	0.006	-0.107	-0.278	-0.353	-0.508	-0.613
		(0.010)	(0.005)	(0.071)	(0.061)	(0.069)	(0.080)	(0.106)
Unforthc.	Hostility C.	0.005	0.003	-0.117	-0.269	-0.325	-0.445	-0.454
		(0.009)	(0.004)	(0.067)	(0.058)	(0.067)	(0.076)	(0.096)
Unforthc.	Hostility A.	0.001	0.004	-0.135	-0.327	-0.383	-0.525	-0.589
		(0.009)	(0.005)	(0.079)	(0.072)	(0.082)	(0.093)	(0.113)
Unforthc.	Anxiety C.	0.000	0.005	-0.152	-0.371	-0.424	-0.573	-0.660
		(0.011)	(0.005)	(0.083)	(0.072)	(0.082)	(0.090)	(0.109)
Unforthc.	Anxiety A.	-0.000	0.004	-0.104	-0.264	-0.323	-0.461	-0.518
		(0.009)	(0.004)	(0.059)	(0.050)	(0.058)	(0.066)	(0.088)
Unforthc.	Inconseq.	0.001	0.004	-0.108	-0.304	-0.361	-0.504	-0.542
		(0.009)	(0.005)	(0.079)	(0.071)	(0.082)	(0.093)	(0.116)
Unforthc.	Restless.	0.002	0.004	-0.099	-0.257	-0.302	-0.441	-0.552
		(0.009)	(0.005)	(0.062)	(0.053)	(0.061)	(0.070)	(0.095)
Write Off	Hostility C.	0.076	0.016	-0.126	-0.201	-0.209	-0.323	-0.360
		(0.018)	(0.010)	(0.115)	(0.094)	(0.106)	(0.128)	(0.160)
Write Off	Hostility A.	0.088	0.011	-0.201	-0.298	-0.305	-0.471	-0.548
		(0.022)	(0.012)	(0.151)	(0.133)	(0.146)	(0.177)	(0.226)
Write Off	Anxiety C.	0.051	0.011	-0.098	-0.179	-0.161	-0.242	-0.262
		(0.012)	(0.007)	(0.092)	(0.080)	(0.091)	(0.106)	(0.129)
Write Off	Anxiety A.	0.040	0.011	-0.083	-0.163	-0.168	-0.243	-0.298
		(0.011)	(0.006)	(0.069)	(0.057)	(0.066)	(0.077)	(0.096)
Write Off	Inconseq.	0.071	0.021	-0.184	-0.324	-0.310	-0.422	-0.542
		(0.019)	(0.010)	(0.152)	(0.130)	(0.147)	(0.165)	(0.197)
Write Off	Restless.	0.053	0.013	-0.108	-0.209	-0.213	-0.284	-0.416
		(0.014)	(0.007)	(0.091)	(0.075)	(0.084)	(0.097)	(0.125)

Notes: This table reports the returns to externalizing behavior on schooling and the labor market outcomes for males under different assumptions of dedicated measurements. In the first row we report our preferred specification. In all models, the coefficient on the externalizing factor has been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C33: Alternative Dedicated Measures: Effects of Externalizing Behavior on Schooling and Labor Market Outcomes, Females

Intern. Meas.	Extern. Meas.	Wages	Hours	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Depression	Hostility C.	0.013	0.047	-0.239	-0.028	-0.003	0.003	-0.184
		(0.020)	(0.025)	(0.104)	(0.092)	(0.129)	(0.113)	(0.168)
Depression	Hostility A.	0.018	0.049	-0.154	0.091	0.103	0.113	-0.005
		(0.021)	(0.027)	(0.119)	(0.104)	(0.168)	(0.141)	(0.208)
Depression	Anxiety C.	0.012	0.034	-0.108	0.072	0.061	0.068	0.029
		(0.014)	(0.017)	(0.078)	(0.069)	(0.106)	(0.091)	(0.127)
Depression	Anxiety A.	0.017	0.037	-0.129	0.013	0.013	0.036	-0.111
		(0.014)	(0.018)	(0.082)	(0.072)	(0.111)	(0.093)	(0.132)
Depression	Inconseq.	0.032	0.067	-0.206	0.142	0.158	0.245	0.050
		(0.028)	(0.034)	(0.154)	(0.135)	(0.205)	(0.182)	(0.253)
Depression	Restless.	0.027	0.067	-0.235	0.085	0.132	0.145	-0.059
		(0.027)	(0.033)	(0.104)	(0.088)	(0.135)	(0.116)	(0.166)
Withdrawal	Hostility C.	0.003	0.035	-0.200	-0.138	-0.157	-0.135	-0.275
		(0.011)	(0.015)	(0.067)	(0.060)	(0.090)	(0.079)	(0.117)
Withdrawal	Hostility A.	0.008	0.046	-0.226	-0.092	-0.132	-0.086	-0.174
		(0.013)	(0.017)	(0.086)	(0.077)	(0.114)	(0.101)	(0.144)
Withdrawal	Anxiety C.	0.002	0.034	-0.184	-0.094	-0.115	-0.085	-0.123
		(0.011)	(0.015)	(0.072)	(0.062)	(0.091)	(0.080)	(0.111)
Withdrawal	Anxiety A.	0.007	0.045	-0.254	-0.149	-0.184	-0.163	-0.313
		(0.016)	(0.020)	(0.083)	(0.073)	(0.117)	(0.095)	(0.147)
Withdrawal	Inconseq.	0.005	0.048	-0.253	-0.174	-0.215	-0.213	-0.359
		(0.014)	(0.018)	(0.091)	(0.080)	(0.122)	(0.106)	(0.153)
Withdrawal	Restless.	0.005	0.050	-0.213	-0.060	-0.113	-0.090	-0.190
		(0.016)	(0.021)	(0.077)	(0.062)	(0.099)	(0.085)	(0.127)
Unforthc.	Hostility C.	0.000	0.035	-0.266	-0.211	-0.268	-0.234	-0.328
		(0.012)	(0.016)	(0.075)	(0.064)	(0.099)	(0.084)	(0.126)
Unforthc.	Hostility A.	0.001	0.035	-0.246	-0.208	-0.236	-0.220	-0.275
		(0.011)	(0.015)	(0.078)	(0.070)	(0.105)	(0.094)	(0.136)
Unforthc.	Anxiety C.	0.001	0.032	-0.224	-0.162	-0.223	-0.183	-0.234
		(0.012)	(0.016)	(0.074)	(0.062)	(0.096)	(0.085)	(0.126)
Unforthc.	Anxiety A.	-0.000	0.036	-0.266	-0.224	-0.262	-0.255	-0.342
		(0.012)	(0.015)	(0.072)	(0.064)	(0.098)	(0.086)	(0.126)
Unforthc.	Inconseq.	-0.001	0.036	-0.260	-0.226	-0.287	-0.280	-0.379
		(0.013)	(0.017)	(0.085)	(0.076)	(0.119)	(0.104)	(0.154)
Unforthc.	Restless.	-0.001	0.034	-0.254	-0.208	-0.275	-0.245	-0.313
		(0.012)	(0.016)	(0.066)	(0.058)	(0.087)	(0.076)	(0.115)
Write Off	Hostility C.	0.011	0.039	-0.111	0.084	0.056	0.139	-0.039
		(0.015)	(0.019)	(0.082)	(0.073)	(0.113)	(0.097)	(0.139)
Write Off	Hostility A.	0.018	0.051	-0.155	0.108	0.109	0.091	-0.100
		(0.021)	(0.027)	(0.122)	(0.105)	(0.158)	(0.141)	(0.204)
Write Off	Anxiety C.	0.011	0.032	-0.145	0.030	0.069	0.074	0.017
		(0.014)	(0.018)	(0.079)	(0.068)	(0.103)	(0.089)	(0.123)
Write Off	Anxiety A.	0.026	0.066	-0.260	0.113	0.025	0.143	-0.130
		(0.031)	(0.038)	(0.108)	(0.090)	(0.139)	(0.117)	(0.173)
Write Off	Inconseq.	0.040	0.083	-0.290	0.027	0.103	0.009	-0.118
		(0.028)	(0.035)	(0.156)	(0.129)	(0.199)	(0.178)	(0.256)
Write Off	Restless.	0.027	0.079	-0.283	-0.008	-0.012	-0.035	-0.150
		(0.027)	(0.033)	(0.102)	(0.082)	(0.124)	(0.109)	(0.161)

Notes: This table reports the returns to externalizing behavior on schooling and the labor market outcomes for females under different assumptions of dedicated measurements. In the first row we report our preferred specification. In all models, the coefficient on the externalizing factor has been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Table C34: Joint Estimation: Measurement System, Males

	Exter.	Inter.	Cog.	C.Size	P.GCE	LEA	N.Teac.	Con.
Hostile Towards Children	1.000	0.000	0.000	-0.001	-0.001	0.025	-0.001	0.229
	(.)	(.)	(.)	(0.001)	(0.000)	(0.063)	(0.001)	(0.067)
Hostile Towards Adults	1.651	0.218	0.044	-0.002	-0.002	-0.018	-0.001	0.607
	(0.083)	(0.043)	(0.014)	(0.001)	(0.001)	(0.086)	(0.002)	(0.094)
Anxiety Towards Children	1.592	-0.306	-0.032	-0.001	-0.000	0.059	-0.001	0.245
	(0.073)	(0.035)	(0.010)	(0.001)	(0.000)	(0.066)	(0.002)	(0.072)
Anxiety Towards Adults	1.072	-0.313	-0.054	-0.001	-0.001	-0.004	0.001	0.329
	(0.068)	(0.044)	(0.012)	(0.001)	(0.001)	(0.058)	(0.002)	(0.067)
Inconsequential Behavior	2.108	0.094	-0.124	-0.000	-0.001	0.088	0.002	0.738
	(0.089)	(0.046)	(0.014)	(0.002)	(0.001)	(0.101)	(0.002)	(0.108)
Restless Behavior	0.772	-0.042	-0.050	-0.000	-0.000	0.042	-0.001	0.148
	(0.042)	(0.022)	(0.008)	(0.001)	(0.000)	(0.052)	(0.001)	(0.057)
Depression	0.000	1.000	0.000	-0.001	-0.001	0.108	-0.002	0.570
	(.)	(.)	(.)	(0.001)	(0.001)	(0.086)	(0.002)	(0.096)
Withdrawal	-0.967	1.113	0.128	0.002	-0.001	0.010	-0.001	0.213
	(0.076)	(0.049)	(0.010)	(0.001)	(0.000)	(0.065)	(0.002)	(0.072)
Unforthcomingness	-2.127	1.884	0.177	0.003	-0.000	0.093	0.003	0.549
	(0.140)	(0.085)	(0.018)	(0.002)	(0.001)	(0.098)	(0.002)	(0.109)
Write Off Adults and Standards	0.081	1.079	0.072	0.003	-0.000	0.029	-0.002	0.499
	(0.072)	(0.051)	(0.014)	(0.001)	(0.001)	(0.091)	(0.002)	(0.100)
Verbal Ability	0.000	0.000	1.000	0.014	0.011	0.112	-0.009	-0.941
	(.)	(.)	(.)	(0.002)	(0.001)	(0.105)	(0.003)	(0.117)
Reading Ability	-0.084	-0.076	0.849	0.015	0.012	-0.127	-0.003	-0.686
	(0.109)	(0.064)	(0.021)	(0.002)	(0.001)	(0.106)	(0.003)	(0.121)
Non-Verbal Ability	-0.134	0.063	0.905	0.012	0.009	0.016	-0.009	-0.634
	(0.102)	(0.063)	(0.022)	(0.002)	(0.001)	(0.096)	(0.002)	(0.109)
Math Ability	-0.057	-0.106	0.913	0.012	0.014	0.077	-0.004	-0.826
	(0.085)	(0.053)	(0.019)	(0.002)	(0.001)	(0.113)	(0.003)	(0.126)

Notes: This table contains the parameter estimates of the measurement system (equation (1)) for the subsample of males. The measurement system and the choice and outcome equations are estimated jointly. Standard errors in parentheses.

Table C35: Joint Estimation: Measurement System, Females

	Exter.	Inter.	Cog.	C.Size	P.GCE	LEA	N.Teac.	Con.
Hostile Towards Children	1.000	0.000	0.000	-0.001	-0.002	-0.060	0.001	0.260
	(.)	(.)	(.)	(0.001)	(0.000)	(0.035)	(0.001)	(0.041)
Hostile Towards Adults	1.436	0.298	0.011	-0.005	-0.003	-0.050	0.000	0.548
	(0.069)	(0.038)	(0.013)	(0.001)	(0.001)	(0.058)	(0.002)	(0.069)
Anxiety Towards Children	1.181	-0.234	-0.051	-0.001	-0.001	-0.060	-0.000	0.233
	(0.053)	(0.031)	(0.008)	(0.001)	(0.000)	(0.030)	(0.001)	(0.037)
Anxiety Towards Adults	1.284	-0.301	-0.103	-0.002	-0.001	0.015	0.000	0.342
	(0.073)	(0.049)	(0.014)	(0.001)	(0.001)	(0.059)	(0.002)	(0.069)
Inconsequential Behavior	1.276	0.297	-0.099	-0.002	-0.002	-0.159	0.003	0.667
	(0.071)	(0.041)	(0.014)	(0.001)	(0.001)	(0.058)	(0.002)	(0.068)
Restless Behavior	0.457	0.060	-0.050	0.001	-0.000	-0.053	0.000	0.120
	(0.030)	(0.021)	(0.007)	(0.001)	(0.000)	(0.031)	(0.001)	(0.039)
Depression	0.000	1.000	0.000	-0.003	-0.002	0.014	0.002	0.490
	(.)	(.)	(.)	(0.001)	(0.001)	(0.067)	(0.002)	(0.076)
Withdrawal	-0.936	0.974	0.148	0.000	-0.001	-0.025	0.001	0.154
	(0.066)	(0.044)	(0.010)	(0.001)	(0.000)	(0.041)	(0.001)	(0.052)
Unforthcomingness	-2.493	2.117	0.278	0.001	-0.000	0.173	0.003	0.388
	(0.155)	(0.099)	(0.021)	(0.002)	(0.001)	(0.097)	(0.002)	(0.108)
Write Off Adults and Standards	-0.383	1.185	0.123	-0.001	-0.002	-0.079	0.001	0.472
	(0.072)	(0.052)	(0.013)	(0.001)	(0.001)	(0.058)	(0.002)	(0.069)
Verbal Ability	0.000	0.000	1.000	0.011	0.009	-0.136	-0.011	-0.246
	(.)	(.)	(.)	(0.002)	(0.001)	(0.106)	(0.002)	(0.118)
Reading Ability	-0.089	-0.039	0.835	0.012	0.009	-0.426	-0.007	-0.170
	(0.114)	(0.070)	(0.022)	(0.002)	(0.001)	(0.096)	(0.003)	(0.110)
Non-Verbal Ability	-0.091	0.004	0.934	0.006	0.009	-0.128	-0.009	-0.179
	(0.107)	(0.067)	(0.023)	(0.002)	(0.001)	(0.098)	(0.003)	(0.113)
Math Ability	0.082	-0.197	0.888	0.008	0.012	-0.110	-0.008	-0.440
	(0.099)	(0.060)	(0.021)	(0.002)	(0.001)	(0.103)	(0.003)	(0.117)

Notes: This table contains the parameter estimates of the measurement system (equation (1)) for the sub-sample of females. The measurement system and the choice and outcome equations are estimated jointly. Standard errors in parentheses.

Table C36: Joint Estimation: Educational Attainment, Multinomial Logit

	Males					Females				
	CSE	O-lvl	A-lvl	H.Edu	H.Deg	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	-0.014	-0.078	-0.071	-0.170	-0.235	-0.173	0.049	0.013	0.049	-0.065
	(0.094)	(0.081)	(0.092)	(0.106)	(0.136)	(0.087)	(0.077)	(0.119)	(0.102)	(0.146)
Internalizing Behavior	-0.104	-0.244	-0.335	-0.383	-0.426	-0.091	-0.422	-0.475	-0.487	-0.442
	(0.119)	(0.105)	(0.117)	(0.133)	(0.166)	(0.124)	(0.113)	(0.162)	(0.143)	(0.198)
Cognition	0.714	1.311	1.692	1.920	3.062	0.793	1.585	2.181	1.983	3.258
	(0.123)	(0.104)	(0.114)	(0.123)	(0.155)	(0.117)	(0.109)	(0.142)	(0.134)	(0.178)
Mother Education	0.324	0.499	0.724	0.900	1.085	0.409	0.540	1.227	1.036	1.697
	(0.245)	(0.221)	(0.232)	(0.238)	(0.252)	(0.228)	(0.213)	(0.241)	(0.232)	(0.252)
Father Education	0.330	0.610	0.539	0.786	1.461	0.103	0.472	0.983	0.911	1.447
	(0.301)	(0.279)	(0.290)	(0.295)	(0.306)	(0.277)	(0.256)	(0.287)	(0.274)	(0.289)
No Father Info.	-0.068	0.145	0.398	-0.224	0.768	-0.533	0.336	0.766	-0.124	1.107
	(0.471)	(0.430)	(0.481)	(0.600)	(0.569)	(0.722)	(0.661)	(0.719)	(0.721)	(0.742)
Father in Skilled Oc.	-0.133	0.181	0.551	0.608	0.436	0.054	0.331	0.271	0.444	0.705
	(0.168)	(0.154)	(0.180)	(0.200)	(0.244)	(0.156)	(0.149)	(0.210)	(0.192)	(0.287)
Father in Managerial Oc.	0.113	0.733	1.335	1.415	1.776	0.363	0.935	0.956	1.370	1.908
	(0.311)	(0.274)	(0.293)	(0.307)	(0.335)	(0.287)	(0.270)	(0.325)	(0.303)	(0.370)
Working Mother	-0.034	0.059	0.038	0.011	-0.140	0.100	0.119	-0.074	0.144	0.060
	(0.161)	(0.145)	(0.158)	(0.168)	(0.187)	(0.150)	(0.140)	(0.177)	(0.166)	(0.193)
London Dummy	0.567	0.113	0.085	0.042	-0.255	0.673	0.277	0.135	-0.030	0.164
	(0.169)	(0.156)	(0.171)	(0.178)	(0.200)	(0.158)	(0.151)	(0.189)	(0.178)	(0.202)
Financial Difficulties	-0.317	-0.685	-1.048	-1.152	-1.513	-0.693	-1.102	-1.624	-0.917	-1.411
	(0.174)	(0.162)	(0.196)	(0.221)	(0.292)	(0.160)	(0.153)	(0.255)	(0.200)	(0.305)
Constant	0.665	1.742	0.935	0.461	-0.723	0.781	1.938	0.414	0.547	-1.502
	(0.211)	(0.190)	(0.212)	(0.238)	(0.276)	(0.197)	(0.182)	(0.239)	(0.224)	(0.332)

Notes: This table contains parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment. We estimate educational attainment on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. The measurement system and the choice and outcome equations are estimated jointly. Standard errors in parentheses.

Table C37: Joint Estimation: Log Hourly Wages

	Males	Females
Externalizing Behavior	0.054	0.013
	(0.014)	(0.017)
Internalizing Behavior	-0.092	-0.024
	(0.016)	(0.023)
Cognition	0.038	0.052
	(0.011)	(0.015)
CSE	0.034	0.060
	(0.031)	(0.043)
O-Level	0.151	0.171
	(0.029)	(0.036)
A-Level	0.206	0.312
	(0.031)	(0.045)
Higher Education	0.320	0.554
	(0.033)	(0.041)
Higher Degree	0.439	0.703
	(0.038)	(0.046)
London Dummy	0.199	0.149
	(0.016)	(0.018)
Financial Difficulties	-0.046	-0.043
	(0.020)	(0.024)
Constant	1.681	1.281
	(0.026)	(0.035)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages. We regress log hourly wages on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. The measurement system and the choice and outcome equations are estimated jointly. Standard errors in parentheses.

Table C38: Joint Estimation: Log Weekly Hours Worked

	Males	Females
Externalizing Behavior	0.012	0.045
	(0.008)	(0.021)
Internalizing Behavior	-0.014	-0.022
	(0.009)	(0.027)
Cognition	-0.005	0.019
	(0.006)	(0.020)
CSE	0.010	0.039
	(0.019)	(0.045)
O-Level	-0.016	0.096
	(0.017)	(0.041)
A-Level	-0.031	0.222
	(0.019)	(0.059)
Higher Education	-0.028	0.196
	(0.020)	(0.050)
Higher Degree	-0.049	0.295
	(0.022)	(0.058)
London Dummy	0.015	0.040
	(0.009)	(0.025)
Financial Difficulties	-0.008	0.005
	(0.011)	(0.030)
Constant	3.776	3.076
	(0.016)	(0.038)

Notes: This table contains parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked. We regress log weekly hours worked on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. The measurement system and the choice and outcome equations are estimated jointly. Standard errors in parentheses.

Appendix C.3 Details on Additional Datasets

In this section, we examine externalizing behavior, schooling and earnings in four additional datasets from the UK and the U.S. As far as we know, we examine all major cohort studies with information on (i) childhood behavior, from which externalizing and internalizing behaviors can be measured; (ii) educational outcomes; and (iii) labor market outcomes. In particular, we assess whether the main patterns we find using the NCDS hold in the 1970 British Cohort Study (BCS), the National Education Longitudinal Study of 1988 (NELS), the Child Development Supplement of the Panel Study of Income Dynamics (PSID-CDS), and the National Longitudinal Survey of Youth 1979 Children and Young Adults (CNLSY). The first of these datasets is from the UK and the remaining three are from the U.S. Compared to the 1958 cohort of the NCDS, the BCS features a more recent cohort. The comparison thus speaks to the stability of the returns to the skills over time in the UK. The three U.S datasets also cover relatively recent cohorts. They also allow us to assess whether results extend to a different country. This appendix provides details on each dataset along with details on how we use each one to construct measures of socio-emotional skills and economic outcomes (Appendix C.3.2 to Appendix C.3.5).

Before discussing the details of each dataset, we briefly summarize main efforts that we have made to ensure comparability of measures across datasets. For each data set, we construct measures of socio-emotional skills in a way has validated in earlier research in each dataset. In the BCS, we factor analyze teachers' descriptions of classroom behaviors for ten-year-olds and obtain 8 factors, 3 of which correspond to externalizing behavior, internalizing behavior and cognition. In the paper, we report estimates with only these 3 factors (cognition, externalizing behavior and internalizing behavior), but results are robust to the inclusion of additional factors (Appendix C.3.2). In the NELS, we follow Farkas (2011) and construct externalizing and internalizing behaviors using the weighted average of two 8th grade teachers' and one 10th grade teacher's responses to questions of classroom behaviors. In both the PSID and CNLSY, we rely on measures of externalizing and internalizing behavior from the Behavior Problems Index (BPI). These measures were developed by Peterson and Zill (1986) and have been used extensively in earlier literature.[2] The key difference between the two, however, is that in the PSID, the scores for externalizing and internalizing behaviors were constructed from both teachers' reports and mothers' reports, while in the CNLSY the

[2]The Behavior Problems Index was originally developed from the Achenback Behavior Problems Checklist to measure the incidence and severity of child behavior problems. The BPI scale is based on a set of 32 problems describing whether a behavior is often, sometimes, or never true of the targeted child. These items are divided into two subscales: 1) a measure of externalizing or aggressive behavior and 2) a measure of internalizing, withdrawn or sad behavior, with the group confirmed by factor analysis by the survey team.

measures are only available from maternal reports. In the paper, we report results using the teachers' reports in the PSID and mothers' reports in the CNLSY. We report additional analysis using maternal reports in the PSID in Appendix C.3.4.

For the measure of schooling outcome, we use years of schooling since this measure is easiest to compare across datasets. Compared to the 1958 cohort in the NCDS, these datasets cover younger cohorts born in the 70s and 80s. One noticeable difference is that in the 1958 British cohort, men exhibit higher education on average than women, but the gender education gap has reversed among younger cohorts — in both Great Britain and the U.S. Average years of schooling in our NCDS sample is 12.73 for men and 11.25 for women. For a younger 1970 British cohort, these two numbers are 12.44 for men and 12.46 for women (Table C41). For the 1973-6 U.S. cohort in NELS, these two numbers are 14.03 and 14.17 (Table C46). Despite the reversal of the gender education gap, the gender wage gap persists in all of these datasets.

To measure earnings, we focus on early career earnings. Specifically, in BCS we construct weekly earnings from yearly earnings reported at age 30. In the NELS, we use weekly earnings from the 2000 survey when the subjects are between 24 and 27 years old. In the PSID, earnings are measured at ages 25 and 26. In CNLSY, they are measured at ages 29 or 30.

Appendix C.3.1 Robustness Across Datasets

In each dataset, we link the measure of externalizing behavior to schooling and earnings in a manner similar to the crude analysis described in Section 2.3. In particular, we run an OLS regression of years of schooling on measures of externalizing behavior, internalizing behavior and cognition, controlling for individual characteristics such as gender and race as well as family background information such as father's and mother's education status and employment status. Results are summarized in Table C39. Next, for each dataset, we run OLS regressions of log weekly earnings for workers in their young adulthood on the same measures of externalizing and internalizing behaviors along with cognition, controlling for gender, race and educational attainment. Results are summarized in Table C40. We discuss these findings in more detail in Section 3.4.2 in the main text.

Table C39: Robustness Across Datasets: Years of Education

	NCDS	BCS	NELS	PSID	CNLSY
Males & Females					
Externalizing	-0.074	-0.122	-0.161	-0.176	-0.136
	(0.027)	(0.026)	(0.023)	(0.110)	(0.030)
Internalizing	-0.069	0.019	-0.165	-0.037	0.015
	(0.028)	(0.027)	(0.021)	(0.105)	(0.028)
Cognition	1.088	0.587	0.637	0.770	0.220
	(0.031)	(0.027)	(0.026)	(0.092)	(0.023)
N	7241	5789	5052	468	1597
Males					
Externalizing	-0.115	-0.148	-0.170	-0.370	-0.085
	(0.035)	(0.034)	(0.028)	(0.136)	(0.039)
Internalizing	-0.059	0.059	-0.166	0.109	0.030
	(0.038)	(0.039)	(0.032)	(0.134)	(0.039)
Cognition	1.169	0.585	0.548	0.646	0.198
	(0.041)	(0.038)	(0.038)	(0.127)	(0.031)
N	3573	2808	2373	216	737
Females					
Externalizing	0.004	-0.089	-0.148	-0.042	-0.197
	(0.042)	(0.039)	(0.039)	(0.199)	(0.046)
Internalizing	-0.085	-0.023	-0.161	-0.116	0.015
	(0.042)	(0.038)	(0.028)	(0.177)	(0.042)
Cognition	0.995	0.588	0.720	0.871	0.244
	(0.045)	(0.038)	(0.036)	(0.133)	(0.034)
N	3668	2981	2679	252	860

Notes: This table lists estimates from OLS regressions used to link socio-emotional and cognitive skills to years of education across datasets. For each dataset, we regress years of education on a set of observable variables along with proxies for the unobserved skills. Standard errors are in parentheses.

Table C40: Robustness Across Datasets: Log Earnings

	NCDS	BCS	NELS	PSID	CNLSY
Males & Females					
Externalizing	0.032	0.020	0.028	0.068	0.002
	(0.009)	(0.011)	(0.009)	(0.034)	(0.024)
Internalizing	-0.047	-0.033	-0.040	-0.090	-0.066
	(0.009)	(0.011)	(0.009)	(0.033)	(0.025)
Cognition	0.079	0.064	0.019	0.044	0.077
	(0.010)	(0.011)	(0.011)	(0.025)	(0.019)
N	4888	5140	5161	249	1269
Males					
Externalizing	0.020	0.012	0.028	0.089	-0.027
	(0.008)	(0.013)	(0.011)	(0.047)	(0.035)
Internalizing	-0.055	-0.029	-0.046	-0.136	-0.076
	(0.008)	(0.014)	(0.014)	(0.049)	(0.039)
Cognition	0.067	0.061	0.011	0.065	0.057
	(0.009)	(0.013)	(0.015)	(0.033)	(0.027)
N	2643	2665	2457	118	593
Females					
Externalizing	0.041	0.028	0.028	0.042	0.034
	(0.020)	(0.018)	(0.018)	(0.050)	(0.034)
Internalizing	-0.031	-0.035	-0.034	-0.048	-0.047
	(0.020)	(0.018)	(0.012)	(0.042)	(0.031)
Cognition	0.103	0.070	0.021	0.030	0.099
	(0.021)	(0.017)	(0.015)	(0.037)	(0.027)
N	2245	2475	2704	131	676

Notes: This table compares estimates from OLS regressions used to link socio-emotional and cognitive skills to log earnings in early adulthood across datasets. For each dataset, we regress log weekly earnings on education attainment along with proxies for the unobserved skills. Standard errors in parentheses.

Appendix C.3.2 BCS

The BCS follows the lives of more than 17,000 individuals born in a single week of 1970 in Great Britain. The survey design of the BCS is similar to that of the NCDS. The BCS surveys individuals at ages 0, 5, 10, 16, 26, 30, 34, 38 and 42. We construct the externalizing and internalizing behaviors by factoring in a number of descriptions of classroom behaviors reported by teachers when children are age 10. Examples include "Displays outbursts of temper," which is used as a measurement of the externalizing behavior, and "Worried and anxious," which measures internalizing behavior. Cognition is measured by aggregating over a number of test scores taken at age 10. We construct weekly earnings from yearly earnings reported at age 30.

Table C41 reports the summary statistics from the BCS sample. Compared to the NCDS (Table B1 in Appendix B), the male-female educational attainment gap is reversed, with girls obtaining on average more years of schooling than boys. From the 1958 cohort to the 1970 cohort, hourly wage increases, but the gender wage gap persists. In terms of other life-cycle outcomes, the 1970 cohort exhibits fewer instances of partnership and having children relative to the 1958 cohort. This could reflect that variables are collected when respondents are 30-years-old (versus 33 in the NCDS).

We perform a factor analysis on teachers' descriptions of classroom behavior in the BCS in a similar way to our preliminary analysis of the NCDS. First, we identify the number of factors using principal component factor analysis. Doing so, we identify eight factors that explain the variation in children's behaviors in the data. This can be seen in Table C42, which shows that 8 factors satisfy the Kaiser's criterion with eigenvalues above one. We name these eight factors externalizing behavior, grit, internalizing behavior, clumsiness, cognition, hand coordination, and two miscellaneous factors. The interpretation of the factors is motivated by the pattern in the factor loadings documented in Table C43. This table also shows the mapping of the descriptive behaviors to the eight factors. We include all eight factors in the schooling and earnings regressions. To construct factors, we sum up the scores of the descriptions that belong to a factor as the measurement of that factor.[3] Summary statistics for externalizing and internalizing behaviors along with cognition constructed in this way are also found in Table C41. We find no significant differences between males and females in the BCS.

Estimates linking educational attainment to underlying skills are found Table C44. To

[3]A more thorough analysis would mimic the benchmark model discussed in Section 3. As this analysis is a robustness test, we instead estimate a model using methods similar to those used in the preliminary analysis. Following this approach also facilitates comparison across datasets.

make results comparable across datasets from different countries, we use years of schooling as the measure of educational attainment. In Models [1] to [4], we include externalizing behavior, internalizing behavior, and cognition, with or without other child or family characteristics for the whole sample ([1] and [2]) and for males and females separately ([3] and [4]). In Models [5] to [7], we also include the other five factors identified from teachers' reports of children's behavior. Externalizing behavior is significantly negatively associated with years of schooling when the specification includes the same three latent skills as in the paper (i.e. Model [2]-[4] in Table 24 in the main paper). Including the other five factors tends to reduce the significance of this negative association for males, while it remains significant for females.

The results on log earnings are found in Table C45. The layout of the table is similar to Table C44. In most specifications, externalizing behavior predicts higher earnings at age 30, especially for females. In fact, the impact of externalizing behavior on earnings is larger in specifications that include additional latent factors. The other controls also have the signs as expected. Higher educational attainment predicts higher earnings. Being married carries an earnings premium for men, but not for women. Having children carries an earnings penalty for women, but not for men.

Estimates using the BCS are broadly consistent with results from the NCDS. The finding that externalizing has mixed effects on economic outcomes remains stable for a younger British cohort. This is particularly interesting given stark differences between the two cohorts, such as the reversal in the gender education gap.

Table C41: BCS: Summary Statistics

	Both	Males	Females	Diff
Externalizing	1.24e-10	-0.0232	0.0215	
	(1.000)	(1.075)	(0.924)	
Internalizing	4.92e-11	-0.00996	0.00922	
	(1.000)	(1.003)	(0.998)	
Cognition	-2.83e-11	0.00314	-0.00290	
	(1.000)	(1.026)	(0.975)	
Years of schooling	12.45	12.44	12.46	
	(2.210)	(2.241)	(2.181)	
Usual weekly hours worked	36.20	39.88	32.31	***
	(8.306)	(5.034)	(9.264)	
Average hourly wage	9.354	10.23	8.412	***
	(4.341)	(4.462)	(3.998)	
Gross yearly income	22817.4	27134.5	18168.9	***
	(84430.0)	(101916.5)	(59839.8)	
Paid employee	0.747	0.800	0.699	***
	(0.435)	(0.400)	(0.459)	
Observations	7435	3573	3862	7435

Notes: This table lists the summary statistics for the BCS sample. Wages and weekly earnings are measured in 2000 British pounds. In Column (4), sym*, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table C42: BCS: Testing for the Number of Factors

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	8.28458	2.09204	0.2899	0.2899
2	6.19254	2.67112	0.2167	0.5067
3	3.52142	0.46625	0.1232	0.6299
4	3.05518	0.01045	0.1069	0.7368
5	3.04473	1.25391	0.1066	0.8434
6	1.79081	0.69362	0.0627	0.9061
7	1.09720	0.05560	0.0384	0.9445
8	1.04160	0.29832	0.0365	0.9809
9	0.74327	0.02303	0.0260	1.0069

Notes: The table lists the results from an exploratory principal component factor analysis. The Kaiser's criterion stipulates that we retain factors with eigenvalues greater than 1. The test suggests there are 8 different factors in the data. For ease of exposition we only show the first 9 factors with the highest eigenvalues.

Table C43: BCS: Mapping of Measurements to Factors

	Externalizing	Grit	Internalizing	Clumsy	Cognition	Hand-Coord.	Misc. 1	Misc. 2
Complains about Things	0.63	0.20	0.14	0.09	-0.03	0.02	0.01	0.00
Displays Outbursts of Temper	0.78	0.09	0.08	0.05	-0.02	0.02	0.05	0.03
Teases Other Children	0.80	0.13	-0.05	0.04	-0.02	0.01	0.03	0.04
Interferes with Others	0.74	0.32	-0.03	0.11	-0.06	0.01	-0.01	0.07
Changes Mood Quickly	0.73	0.15	0.23	0.08	-0.02	0.06	0.01	-0.00
Excitable Impulsive	0.63	0.13	0.12	0.01	0.00	0.04	-0.03	0.07
Shows Restless or Over-Active Behaviour	0.64	0.25	0.17	0.05	-0.02	0.06	-0.01	0.18
Squirmy and Fidgety	0.54	0.47	0.12	0.11	-0.07	0.05	-0.01	0.22
Quarrels With Other Kids	0.79	0.21	0.07	0.06	-0.07	0.04	-0.02	-0.02
Destroys Belongings	0.63	0.16	0.02	0.10	-0.05	0.09	0.18	0.26
Bullies Other Children	0.77	0.10	-0.04	0.02	-0.05	0.04	0.07	0.04
Sullen or Sulky	0.64	0.20	0.17	0.10	-0.04	0.04	0.02	-0.01
Is Easily Frustrated	0.59	0.22	0.17	0.08	-0.06	0.05	0.00	0.08
Child is Daydreaming	0.07	0.61	0.23	0.15	-0.11	0.01	0.03	0.06
Cannot Concentrate on Particular Task	0.19	0.55	0.15	0.10	-0.15	0.07	0.01	0.05
Becomes Bored during Class	0.38	0.65	0.10	0.14	-0.13	0.02	0.04	0.05
Shows Perseverance	-0.26	-0.70	-0.08	-0.02	0.17	-0.11	0.02	-0.01
Confused or Hesitant	0.13	0.52	0.47	0.15	-0.30	0.07	-0.03	0.01
Easily Distracted	0.40	0.73	0.11	0.09	-0.17	0.01	-0.02	0.05
Pays Attention in Class	-0.28	-0.70	-0.05	-0.07	0.19	-0.14	-0.01	-0.06
Forgetful on Complex Task	0.18	0.62	0.29	0.16	-0.28	0.10	-0.01	0.05
Shows Lethargic/Listless Behaviour	0.13	0.47	0.26	0.29	-0.11	0.07	0.07	0.04
Completes Tasks	-0.19	-0.70	-0.09	-0.08	0.14	-0.17	-0.05	-0.04
Fails to Finish Tasks	0.22	0.71	0.09	0.11	-0.14	0.07	0.05	0.06
Afraid of New Things/Situations	-0.03	0.29	0.64	0.11	-0.16	0.07	0.02	-0.01
Behaves 'Nervously'	0.06	0.18	0.75	0.19	-0.09	0.08	0.01	0.08
Fussy or Over-Particular	0.31	0.05	0.48	0.17	0.02	-0.00	-0.01	-0.02
Worried And Anxious	0.15	0.13	0.78	0.10	-0.06	0.03	0.01	0.00
Trips Falls Bumps	0.31	0.13	0.13	0.47	-0.01	0.14	0.08	0.13
Clumsy at Games	0.17	0.22	0.20	0.71	-0.05	0.16	0.01	0.01
Difficulty Kicking Ball	0.07	0.14	0.21	0.65	-0.04	0.13	0.05	0.03
Difficulty Picking up Small Objects	0.17	0.14	0.15	0.52	-0.07	0.36	0.13	0.13
Drops Things Being Carried	0.26	0.20	0.17	0.43	-0.05	0.25	0.08	0.13
Fearful in Movements	0.01	0.19	0.33	0.55	-0.07	0.07	0.08	0.03
Reading Score	-0.07	-0.29	-0.09	-0.05	0.75	-0.06	-0.00	-0.01
Math Score	-0.06	-0.30	-0.10	-0.07	0.74	-0.03	-0.01	-0.02
BAS Word Knowledge Score	-0.04	-0.16	-0.07	-0.00	0.67	-0.04	-0.02	-0.00
BAS Word Recall Score	-0.02	-0.15	-0.08	-0.03	0.40	-0.03	0.02	-0.01
BAS Simi Score	-0.02	-0.13	-0.07	-0.01	0.65	-0.03	-0.03	-0.01
BAS Mathematics	-0.09	-0.20	-0.04	-0.03	0.61	-0.07	0.02	-0.01
Works Deftly With Hands	-0.08	-0.29	-0.09	-0.24	0.16	-0.42	0.05	-0.00
Manipulates Small Objects with Hands	-0.03	-0.16	-0.09	-0.28	0.06	-0.56	-0.03	-0.00
Can Use Manipulative Equipment	-0.09	-0.23	-0.09	-0.30	0.13	-0.60	-0.04	-0.06
Holds Instruments Appropriately	-0.11	-0.24	-0.09	-0.19	0.09	-0.48	-0.08	-0.06
Wetting Pants during Class	0.07	0.01	0.05	0.09	-0.00	0.05	0.59	0.03
Soils Pants during Class	0.08	0.01	0.03	0.10	-0.01	0.05	0.64	0.08
Hums or Makes Odd Vocals	0.46	0.20	0.04	0.11	-0.02	0.07	0.07	0.55
Rhythmic Tapping in Class	0.46	0.21	0.05	0.10	-0.02	0.08	0.08	0.56
Cries For Little Cause	0.34	0.11	0.37	0.21	-0.04	0.04	0.14	-0.04
Dresses/Undresses competently	-0.07	-0.14	-0.04	-0.16	0.02	-0.32	-0.12	-0.05
Relations with Others Unhappy/Tearful	0.36	0.16	0.43	0.22	-0.03	0.10	0.11	0.00
Obsessional about Unimportant Tasks	0.38	0.14	0.39	0.21	-0.02	0.06	0.06	0.08
Rather Solitary	0.07	0.08	0.37	0.25	-0.00	0.04	0.03	0.05
Inadequate Control of Pencil/Paint Brush	0.16	0.22	0.10	0.31	-0.11	0.39	0.04	0.15
Accident Prone	0.33	0.15	0.13	0.30	-0.06	0.11	0.10	0.16
Has Twitches, Mannerisms/Tics	0.25	0.07	0.19	0.18	-0.00	0.11	0.16	0.29
Truants from School	0.18	0.11	0.03	0.09	-0.05	0.04	0.37	0.11

Notes: This table shows the factor loadings for the eight factors with eigenvalues greater than 1. Results are from an exploratory principal component factor analysis.

Table C44: BCS: Educational Attainment

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Externalizing	-0.129	-0.122	-0.148	-0.089	-0.047	-0.013	-0.095
	(0.027)	(0.026)	(0.034)	(0.039)	(0.037)	(0.050)	(0.055)
Internalizing	0.023	0.019	0.059	-0.023	0.024	0.072	-0.028
	(0.029)	(0.027)	(0.039)	(0.038)	(0.034)	(0.048)	(0.048)
Cognition	0.630	0.587	0.585	0.588	0.524	0.491	0.556
	(0.028)	(0.027)	(0.038)	(0.038)	(0.034)	(0.050)	(0.048)
Grit					0.250	0.345	0.130
					(0.042)	(0.058)	(0.061)
Clumsiness					0.074	0.102	0.040
					(0.040)	(0.057)	(0.056)
Hand Coordination					-0.020	-0.017	-0.013
					(0.036)	(0.049)	(0.052)
Miscellaneous 1					0.023	0.002	0.075
					(0.036)	(0.044)	(0.063)
Miscellaneous 2					0.050	0.036	0.054
					(0.030)	(0.041)	(0.046)
Mother has vocational edu.		0.416	0.459	0.377	0.420	0.472	0.362
		(0.078)	(0.113)	(0.107)	(0.088)	(0.130)	(0.121)
Mother Has O-Level Edu.		0.853	0.883	0.822	0.826	0.882	0.771
		(0.075)	(0.111)	(0.101)	(0.085)	(0.128)	(0.114)
Mother Has Some Higher Edu.		1.839	1.880	1.801	1.798	1.844	1.751
		(0.105)	(0.152)	(0.146)	(0.118)	(0.171)	(0.164)
Father from SC 3		-0.890	-0.790	-0.979	-0.882	-0.837	-0.920
		(0.082)	(0.121)	(0.112)	(0.093)	(0.137)	(0.127)
Father from SC 4-5		-1.328	-1.227	-1.414	-1.284	-1.185	-1.386
		(0.093)	(0.136)	(0.128)	(0.106)	(0.156)	(0.146)
Father employed		-0.014	-0.147	0.126	-0.039	-0.026	-0.054
		(0.151)	(0.215)	(0.211)	(0.196)	(0.282)	(0.274)
Female	0.034	0.020			-0.008		
	(0.056)	(0.051)			(0.058)		
Constant	12.452	12.852	12.882	12.823	12.877	12.794	12.954
	(0.041)	(0.172)	(0.242)	(0.236)	(0.217)	(0.312)	(0.300)
Obs.	5789	5789	2808	2981	4447	2171	2276

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to educational attainment measured by years of completed education. Models [1], [2] and [5] include all individuals and a gender dummy, Models [3] and [6] includes only males and Models [4] and [7] only females. Parameters from Model [2] is also reported in Table 6 of the paper. Standard errors in parentheses.

Table C45: BCS: Log Earnings

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Externalizing	0.013	0.020	0.012	0.028	0.053	0.042	0.072
	(0.011)	(0.011)	(0.013)	(0.018)	(0.016)	(0.018)	(0.030)
Internalizing	-0.034	-0.033	-0.029	-0.035	-0.027	-0.025	-0.027
	(0.012)	(0.011)	(0.014)	(0.018)	(0.014)	(0.016)	(0.023)
Cognition	0.122	0.064	0.061	0.070	0.061	0.057	0.065
	(0.010)	(0.011)	(0.013)	(0.017)	(0.014)	(0.017)	(0.022)
Grit					0.025	0.022	0.047
					(0.017)	(0.020)	(0.029)
Clumsiness					-0.029	-0.057	0.020
					(0.015)	(0.018)	(0.027)
Hand Coordination					0.001	-0.006	0.004
					(0.014)	(0.016)	(0.024)
Miscellaneous 1					0.003	0.018	-0.039
					(0.016)	(0.016)	(0.040)
Miscellaneous 2					-0.015	-0.018	-0.006
					(0.012)	(0.017)	(0.018)
Years of Education		0.088	0.054	0.124	0.085	0.051	0.124
		(0.005)	(0.006)	(0.007)	(0.005)	(0.007)	(0.008)
Female	-0.536	-0.544			-0.528		
	(0.022)	(0.021)			(0.024)		
Constant	9.865	8.766	9.187	7.762	8.809	9.240	7.784
	(0.013)	(0.058)	(0.073)	(0.094)	(0.066)	(0.082)	(0.107)
Obs.	5140	5140	2665	2475	3962	2076	1886

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to labor market earnings. Models [1], [2] and [5] include all individuals and a gender dummy, Models [3] and [6] include only males and Models [4] and [7] only females. Parameters from Model [2] is also reported in Table 6 of the paper. Standard errors in parentheses.

Appendix C.3.3 NELS

The NELS is a nationally representative, longitudinal study of 8th graders in the U.S. in 1988, who belong to the 1973-6 cohorts. The students are interviewed in four follow-up surveys in 1990, 1992, 1994, and 2000. We follow the analysis in Farkas (2011), who uses the same data to construct the 3 skills. Externalizing behavior is measured as the weighted average (using factor analysis) of two teachers' responses to the question "is this student frequently disruptive?" in the 8th grade (i.e. when the child is around age 12) and one teacher's response in a 5 point scale to "how often is this student disruptive?" in the 10th grade (i.e. when the child is around age 14). Internalizing behavior is measured by the weighted average of two teachers in the 8th grade and one teacher in the 10th grade responding to the question "is this student exceptionally passive or withdrawn?" Cognition is measured by reading and math test scores in the 10th grade. The weekly earnings are measured in the 2000 survey, when these individuals are 24-27 year old.

Summary statistics of the NELS sample are reported in Table C46. For this cohort of Americans, the majority have educational attainment that is equal to or below post-secondary education. There is no systematic difference between males and females. Males typically work more hours, earn more wages, and hence have higher income than females. Females are more likely than males in the sample to get married, cohabitate or to have children by age 24-27.

Principal component analysis reveals three factors in the data, i.e., factors with eigenvalues greater than one (Table C47). Mappings between measurements and factors are reported in Table C48. In relating skills to education and earnings, we conduct a similar analysis to those conducted in Section 2.3.

Table C49 reports estimates from regressing years of schooling on the three factors, with and without family characteristic controls. Table C50 reports the results from regressing log earnings on the three factors, with and without education or other life-cycle outcome controls. As in the analysis using the NCDS data, we include specifications where we aggregate the externalizing and internalizing into a single measure of misbehavior.

Consistent with the results in Section 2.3, a single measure of misbehavior predicts lower schooling and lower earnings. Once we recognize that misbehavior can be separated into two distinct components, we find that externalizing behavior negatively affects schooling in all specifications, i.e., whether or not we include family characteristic variables. Results hold if we stratify by gender (Table C49). Externalizing behavior has a neutral effect on earnings before controlling for educational attainment and other life-cycle outcomes (Model [4] in Table C50). This means that, in contrast to our main results using British data, the *net*

effect of externalizing on earnings is not statistically distinguishable from zero. However, adjusting for the impact of externalizing on education, partnership, and fertility, externalizing is positively and significantly associated with earnings (Model [5]). This result was also shown in Farkas (2011), where the author uses the same data and find a positive return for persistent externalizing behavior on earnings after controlling for a series of variables [4]. If we analyze males and females separately, we find that the positive impact of externalizing on earnings is mainly driven by males. This final point is different from results from the British NCDS sample, where the effect on earnings is stronger for females than for males.

Table C46: NELS: Summary Statistics

	Both	Males	Females	Diff
Externalizing	-1.45e-08	0.224	-0.201	***
	(1.000)	(1.173)	(0.761)	
Internalizing	1.15e-08	0.00757	-0.00677	
	(1.000)	(1.008)	(0.992)	
Cognition	-7.06e-11	-0.00751	0.00672	
	(1.000)	(1.010)	(0.991)	
Years of Education	14.11	14.03	14.17	**
	(1.894)	(1.901)	(1.885)	
Hourly Wages	15.30	16.50	14.21	***
	(19.48)	(14.11)	(23.26)	
Weekly Hours Worked	40.62	43.61	37.94	***
	(11.33)	(11.53)	(10.45)	
Yearly Income	25459.5	30432.5	20928.1	***
	(20384.5)	(23027.9)	(16371.9)	
Employment Status	0.875	0.922	0.833	***
	(0.330)	(0.268)	(0.373)	
Black	0.0818	0.0728	0.0898	
	(0.274)	(0.260)	(0.286)	
Hispanic	0.0994	0.1000	0.0988	
	(0.299)	(0.300)	(0.298)	
Observations	5697	2691	3006	5697

Notes: This table lists the summary statistics for the NELS sample. Wages and weekly earnings are measured in 2000 dollars. In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

[4]The author argues that this result is surprising and that "Perhaps aggressiveness and high energy have a positive value in the labor market", a point which we develop in this paper

Table C47: NELS: Testing for the Number of Factors

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	1.98555	0.47386	0.2482	0.2482
2	1.51169	0.40219	0.1890	0.4372
3	1.10949	0.24118	0.1387	0.5758
4	0.86831	0.11153	0.1085	0.6844

Notes: This table lists the results from an exploratory principal component factor analysis. The Scree Plot Test Criterion is to retain factors with eigenvalues greater than 1. The test suggests there are 3 different factors in the data. For ease of exposition we only show the first 4 factors with the highest eigenvalues.

Table C48: NELS: Mapping of Measurements to Factors

	Cognition	Externalizing	Internalizing
10th Grade Reading Test Score	0.91	-0.07	-0.03
10th Grade Math Test Score	0.91	-0.06	-0.05
8th Grader is Disruptive Frequently (Teacher 1)	-0.04	0.75	-0.00
8th Grader is Disruptive Frequently (Teacher 2)	-0.06	0.73	0.01
10th Grader is Disruptive Frequently	-0.25	0.61	-0.12
8th Grader is Exceptionally Passive/Withdrawn (Teacher 1)	-0.08	-0.00	0.70
8th Grader is Exceptionally Passive/Withdrawn (Teacher 2)	-0.07	-0.05	0.71
10th Grader is Exceptionally Passive/Withdrawn	-0.03	-0.02	0.61

Notes: This table shows the factor loadings for the three factors with eigenvalues greater than 1. Results are from an exploratory principal component factor analysis.

Table C49: NELS: Educational Attainment

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior	-0.466	-0.240							
	(0.024)	(0.023)							
Externalizing			-0.350	-0.146	-0.370	-0.164	-0.161	-0.170	-0.148
			(0.025)	(0.024)	(0.025)	(0.024)	(0.023)	(0.028)	(0.039)
Internalizing					-0.309	-0.188	-0.165	-0.166	-0.161
					(0.024)	(0.022)	(0.021)	(0.032)	(0.028)
Cognition		0.863		0.891		0.864	0.637	0.548	0.720
		(0.023)		(0.023)		(0.023)	(0.026)	(0.038)	(0.036)
Father Graduated HS							0.177	0.205	0.167
							(0.068)	(0.100)	(0.093)
Father Went to College							0.388	0.478	0.328
							(0.074)	(0.111)	(0.100)
Father Graduated 4-year-college							0.924	1.017	0.853
							(0.087)	(0.125)	(0.121)
Mother Graduated HS							0.194	0.155	0.199
							(0.067)	(0.103)	(0.088)
Mother Went to College							0.451	0.367	0.491
							(0.079)	(0.121)	(0.105)
Mother Graduated 4-year-college							0.766	0.732	0.761
							(0.089)	(0.132)	(0.120)
Father Employed							0.102	0.138	0.076
							(0.083)	(0.121)	(0.112)
Mother Employed							0.210	0.322	0.093
							(0.074)	(0.102)	(0.106)
Black							0.168	0.107	0.213
							(0.077)	(0.120)	(0.100)
Hispanic							0.007	0.040	-0.032
							(0.074)	(0.109)	(0.100)
Female	-0.020	0.039	-0.012	0.057	-0.025	0.047	0.116		
	(0.053)	(0.047)	(0.054)	(0.048)	(0.053)	(0.048)	(0.046)		
Constant	14.138	14.081	14.141	14.074	14.141	14.076	12.952	12.806	13.228
	(0.038)	(0.035)	(0.039)	(0.035)	(0.039)	(0.035)	(0.111)	(0.155)	(0.151)
Obs.	5052	5052	5052	5052	5052	5052	5052	2373	2679

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to educational attainment measured by years of completed education. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Parameters from Model [7] is also reported in Table 6 of the paper. Standard errors in parentheses.

Table C50: NELS: Log Earnings

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior	-0.058	-0.033							
	(0.010)	(0.010)							
Externalizing			-0.007	0.016	-0.012	0.010	0.028	0.028	0.018
			(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(0.011)	(0.018)
Internalizing					-0.074	-0.059	-0.040	-0.046	-0.033
					(0.009)	(0.009)	(0.009)	(0.014)	(0.012)
Cognition		0.109		0.120		0.112	0.019	0.011	0.021
		(0.010)		(0.010)		(0.010)	(0.011)	(0.015)	(0.015)
Years of Education							0.109	0.075	0.141
							(0.006)	(0.008)	(0.008)
Black	-0.121	-0.053	-0.137	-0.061	-0.132	-0.063	-0.074	-0.172	0.000
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.028)	(0.042)	(0.037)
Hispanic	-0.048	0.006	-0.063	-0.001	-0.049	0.006	0.019	-0.043	0.075
	(0.029)	(0.029)	(0.029)	(0.030)	(0.029)	(0.029)	(0.028)	(0.040)	(0.039)
Female	-0.351	-0.347	-0.334	-0.329	-0.338	-0.332	-0.342		
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.018)		
Constant	6.393	6.379	6.387	6.371	6.388	6.372	4.841	5.330	4.035
	(0.013)	(0.013)	(0.014)	(0.013)	(0.013)	(0.013)	(0.079)	(0.108)	(0.115)
Obs.	5161	5161	5161	5161	5161	5161	5161	2457	2704

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to labor market earnings. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Parameters from Model [7] is also reported in Table 6 of the paper. Standard errors in parentheses.

Appendix C.3.4 PSID

The Child Development Supplement (CDS) of the PSID is a longitudinal study of children's developmental outcomes within the context of family, neighborhood, and school environments. We draw our sample from the first wave of the CDS, conducted in 1997, which collects extensive child-specific developmental data from 2,394 families with children aged 0-12. These subjects are PSID individuals too, and participate in PSID surveys. We restrict our attention to children aged 7-13 interviewed in the 1997 CDS, which corresponds to members of the 1984-1990 cohorts. We take the questions underlying the Behavior Problem Index (BPI), as reported by the elementary school teachers, to construct measures of externalizing and internalizing behaviors[5]. For example, "Has a very strong temper and loses it easily" is used to measure externalizing behavior, while "Is withdrawn, does not get involved with others" measures internalizing behavior. Cognition is measured by reading and applied math test scores. Income is measured at age 25-26. Note, the sample is thus from a relatively young cohort.

Summary statistics from the PSID sample are reported in Table C51. This sample of Americans has relatively high educational attainment, with only 27% attaining a high school diploma or below. Females in this sample attain higher education than males. Both genders face similar wage rates and work a similar number of hours at age 25-26. Females tend to marry more and have a slightly higher chance of having children. Using the PSID-CDS, we use measures of externalizing and internalizing behavior that are constructed by data providers using the mapping between the behavior problem index (BPI) and the two factors (which we replicate in Table C52).

A feature of the PSID is that we have the scores of externalizing and internalizing constructed from both teachers' reports and mothers' reports. In Tables C53 and C54, we regress completed years of schooling on the factors constructed from teachers' and mothers' reports. The results using either teachers' or mothers' reports are similar. In most specifications, the effect of externalizing on schooling is negative, with the only exception being the female subsample (Model [7]).

In Tables C55 and C56, we regress earnings at age 25-26 on the factors constructed from teachers' and mothers' reports. We observe the familiar positive effect that externalizing

[5]The Behavior Problem Index was originally developed from the Achenback Behavior Problems Checklist to measure the incidence and severity of child behavior problems. The BPI scale is based on a set of 32 problems describing whether a behavior is often, sometimes, or never true of the targeted child. These items are divided into two sub-scales: 1) a measure of externalizing or aggressive behavior and 2) a measure of internalizing, withdrawn or sad behavior. This division is motivated by factor analyses conducted by the survey team.

has on earnings from the teachers' reports, but not from the mothers' reports. This echoes the results in Ronda (2017) that teachers' reports of children's classroom behavior are a better predictor of their later life-cycle outcomes compared to reports provided by mothers. Focusing on results using teachers' reports, the positive effect that externalizing has on earnings is more pronounced among males than among females (Models [6] and [7] in Table C55). This is consistent with what we find using the NELS.

Table C51: PSID: Summary Statistics

	Both	Males	Females	Diff
Externalizing	1.21e-08	0.160	-0.139	***
	(1.000)	(1.021)	(0.962)	
Internalizing	-2.98e-09	-0.00224	0.00195	
	(1.000)	(0.974)	(1.024)	
Cognition	1.50e-09	-0.0380	0.0331	
	(1.000)	(1.080)	(0.926)	
Years of Education at 25/26	13.71	13.38	14.00	***
	(1.927)	(1.868)	(1.935)	
Hourly Wages at 25/26	13.26	13.99	12.60	
	(6.211)	(6.337)	(6.041)	
Yearly Earnings at 25/26	402.2	414.7	392.3	
	(233.4)	(220.8)	(243.1)	
Employment Status at 25/26	2.060	1.959	2.147	
	(1.927)	(1.768)	(2.054)	
White	0.548	0.512	0.579	
	(0.498)	(0.501)	(0.495)	
Black	0.383	0.421	0.349	
	(0.487)	(0.495)	(0.477)	
Observations	520	242	278	520

Notes: This table lists the summary statistics for the PSID sample. Wages and weekly earnings are measured in 2010 dollars. In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table C52: PSID: Mapping of Measurements to Factors

Question	Externalizing	Internalizing
a (He/She) has sudden changes in mood or feeling.	X	
b (He/She) feels or complains that no one loves him/her.		X
c (He/She) is rather high strung and nervous.	X	
d (He/She) cheats or tells lies.	X	
e (He/She) is too fearful or anxious.		X
f (He/She) argues too much	X	
g (He/She) has difficulty concentrating, cannot pay attention for long.	X	
h (He/She) is easily confused, seems to be in a fog.		X
i (He/She) bullies or is cruel or mean to others.	X	
j (He/She) is disobedient.	X	
k (He/She) does not seem to feel sorry after (he/she)misbehaves.	X	
l (He/She) has trouble getting along with other children	X	X
m (He/She) is impulsive,or acts without thinking.	X	
n (He/She) feels worthless or inferior.		X
o (He/She) is not liked by other children.		X
p (He/She) has difficulty getting (his/her) mind off certain thoughts.		X
q (He/She) is restless or overly active, cannot sit still	X	
r (He/She) is stubborn,sullen,or irritable.	X	
s (He/She) has a very strong temper and loses it easily.	X	
t (He/She) is unhappy,sad or depressed.		X
u (He/She) is withdrawn, does not get involved with others.		X
v (He/She) breaks things on purpose or deliberately destroys (his/her)own or another's things.	X	
w (He/She) clings to adults.		
x (He/She) cries too much.	X	
y (He/She) demands a lot of attention.	X	
z (He/She) is too dependant on others.		X
aa (He/She) feels others are out to get (him/her).		X
bb (He/She) hangs around with kids who get into trouble.		
cc (He/She) is secretive, keeps things to (himself/herself).		X
dd (He/She) worries too much.		X

Notes: This table shows the mapping from questions in the behavior problem index (BPI) to the two underlying factors. The mapping and scores were constructed by the data administrators. More information is provided in the PSID-CDS codebook (see `https://psidonline.isr.umich.edu/CDS/cdsi_userGD.pdf`)

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Table C53: PSID: Educational Attainment

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Teacher)	-0.419	-0.207							
	(0.081)	(0.080)							
Externalizing (Teacher)			-0.391	-0.213	-0.198	-0.187	-0.176	-0.370	-0.042
			(0.083)	(0.081)	(0.119)	(0.112)	(0.110)	(0.136)	(0.199)
Internalizing (Teacher)					-0.256	-0.036	-0.037	0.109	-0.116
					(0.111)	(0.106)	(0.105)	(0.134)	(0.177)
Cognition		0.799		0.812		0.805	0.770	0.646	0.871
		(0.089)		(0.087)		(0.090)	(0.092)	(0.127)	(0.133)
Father's Years of Edu.							0.053	0.145	-0.003
							(0.030)	(0.045)	(0.041)
Mother's Years of Edu.							-0.037	-0.084	-0.017
							(0.042)	(0.054)	(0.062)
Mother Married at Birth							0.497	0.418	0.452
							(0.185)	(0.267)	(0.275)
White	0.789	0.201	0.792	0.193	0.789	0.197	0.139	0.261	0.170
	(0.334)	(0.301)	(0.333)	(0.299)	(0.335)	(0.301)	(0.301)	(0.419)	(0.448)
Black	-0.197	-0.193	-0.170	-0.174	-0.216	-0.180	-0.045	-0.031	-0.020
	(0.338)	(0.294)	(0.336)	(0.293)	(0.337)	(0.292)	(0.292)	(0.404)	(0.431)
Female	0.421	0.492	0.386	0.468	0.446	0.475	0.477		
	(0.166)	(0.153)	(0.168)	(0.154)	(0.170)	(0.156)	(0.156)		
Constant	12.739	12.944	12.781	12.977	12.709	12.966	12.330	12.175	13.809
	(0.408)	(0.353)	(0.409)	(0.352)	(0.414)	(0.357)	(0.651)	(0.844)	(0.815)
Obs.	468	468	468	468	468	468	468	216	252

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to educational attainment measured by years of completed education. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Parameters from Model [7] is also reported in Table 6 of the paper. Standard errors in parentheses.

Table C54: PSID: Educational Attainment, Maternal Reports

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Mother)	-0.413	-0.220							
	(0.074)	(0.075)							
Externalizing (Mother)			-0.420	-0.262	-0.365	-0.323	-0.320	-0.361	-0.287
			(0.074)	(0.073)	(0.107)	(0.094)	(0.094)	(0.123)	(0.142)
Internalizing (Mother)					-0.082	0.094	0.086	0.147	0.085
					(0.110)	(0.096)	(0.095)	(0.137)	(0.143)
Cognition		0.797		0.799		0.813	0.772	0.671	0.879
		(0.090)		(0.087)		(0.089)	(0.090)	(0.124)	(0.133)
Father's Years of Edu.							0.053	0.121	0.004
							(0.030)	(0.046)	(0.040)
Mother's Years of Edu.							-0.044	-0.077	-0.027
							(0.041)	(0.056)	(0.061)
Mother Married at Birth							0.519	0.529	0.451
							(0.183)	(0.250)	(0.278)
White	0.790	0.203	0.800	0.207	0.796	0.201	0.140	0.279	0.135
	(0.323)	(0.296)	(0.322)	(0.292)	(0.322)	(0.293)	(0.293)	(0.438)	(0.425)
Black	-0.317	-0.254	-0.242	-0.211	-0.272	-0.176	-0.039	-0.015	0.007
	(0.329)	(0.288)	(0.327)	(0.286)	(0.328)	(0.287)	(0.287)	(0.425)	(0.426)
Female	0.457	0.507	0.418	0.476	0.430	0.462	0.458		
	(0.165)	(0.152)	(0.166)	(0.152)	(0.167)	(0.153)	(0.153)		
Constant	12.740	12.949	12.762	12.975	12.757	12.984	12.425	12.296	13.826
	(0.406)	(0.350)	(0.405)	(0.349)	(0.405)	(0.349)	(0.627)	(0.824)	(0.789)
Obs.	468	468	468	468	468	468	468	216	252

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to educational attainment measured by years of completed education. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Standard errors in parentheses.

Table C55: PSID: Log Earnings

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Teacher)	-0.055	-0.030							
	(0.023)	(0.025)							
Externalizing (Teacher)			-0.034	-0.011	0.053	0.055	0.068	0.089	0.042
			(0.024)	(0.025)	(0.036)	(0.036)	(0.034)	(0.047)	(0.050)
Internalizing (Teacher)					-0.115	-0.092	-0.090	-0.136	-0.048
					(0.034)	(0.036)	(0.033)	(0.049)	(0.042)
Cognition		0.094		0.101		0.085	0.044	0.065	0.030
		(0.026)		(0.025)		(0.026)	(0.025)	(0.033)	(0.037)
Years of Education							0.063	0.052	0.075
							(0.016)	(0.026)	(0.019)
White	0.057	-0.003	0.056	-0.008	0.062	0.007	-0.003	-0.024	-0.013
	(0.082)	(0.081)	(0.082)	(0.080)	(0.078)	(0.076)	(0.081)	(0.123)	(0.106)
Black	-0.133	-0.143	-0.134	-0.146	-0.158	-0.164	-0.153	-0.138	-0.170
	(0.085)	(0.083)	(0.086)	(0.083)	(0.082)	(0.078)	(0.082)	(0.128)	(0.106)
Female	-0.116	-0.107	-0.116	-0.105	-0.087	-0.083	-0.090		
	(0.047)	(0.046)	(0.048)	(0.046)	(0.048)	(0.048)	(0.047)		
Constant	2.703	2.732	2.703	2.732	2.667	2.699	1.864	1.924	1.530
	(0.108)	(0.103)	(0.108)	(0.102)	(0.105)	(0.101)	(0.230)	(0.369)	(0.262)
Obs.	249	249	249	249	249	249	249	118	131

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to labor market earnings. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Parameters from Model [7] is also reported in Table 6 of the paper. Standard errors in parentheses.

Table C56: PSID: Log Earnings, Maternal Reports

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Mother)	-0.034	-0.008							
	(0.020)	(0.022)							
Externalizing (Mother)			-0.026	-0.004	-0.001	0.004	0.023	0.055	-0.010
			(0.023)	(0.024)	(0.035)	(0.034)	(0.035)	(0.053)	(0.046)
Internalizing (Mother)					-0.036	-0.013	-0.020	-0.066	0.023
					(0.032)	(0.032)	(0.034)	(0.054)	(0.040)
Cognition		0.101		0.103		0.101	0.057	0.076	0.045
		(0.027)		(0.026)		(0.027)	(0.025)	(0.036)	(0.033)
Years of Education							0.064	0.053	0.076
							(0.016)	(0.027)	(0.019)
White	0.059	-0.008	0.058	-0.009	0.060	-0.007	-0.016	-0.014	-0.027
	(0.079)	(0.080)	(0.079)	(0.080)	(0.078)	(0.079)	(0.085)	(0.130)	(0.107)
Black	-0.148	-0.151	-0.143	-0.149	-0.156	-0.154	-0.142	-0.129	-0.143
	(0.080)	(0.080)	(0.081)	(0.081)	(0.081)	(0.081)	(0.085)	(0.129)	(0.113)
Female	-0.112	-0.103	-0.114	-0.103	-0.104	-0.100	-0.104		
	(0.048)	(0.047)	(0.048)	(0.047)	(0.049)	(0.047)	(0.046)		
Constant	2.698	2.730	2.700	2.730	2.690	2.726	1.868	1.908	1.496
	(0.105)	(0.102)	(0.106)	(0.102)	(0.105)	(0.103)	(0.232)	(0.381)	(0.258)
Obs.	249	249	249	249	249	249	249	118	131

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to labor market earnings. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Standard errors in parentheses.

Appendix C.3.5 CNLSY

The CNLSY is a longitudinal project that follows the children of the women in the NLSY 1979, who were a nationally representative sample of women aged 14 to 21 on December 31, 1978. The first interview of their children was conducted in 1986, when NLSY women were 22 to 29 years old. The first interview of the Young Adults Survey of the NLSY was conducted in 1994 for children aged 15 and above who were born to the NLSY women.

Notice, children in the CNLSY for whom we observe later life outcomes are part of a selected sample born to relatively young mothers. This can be seen in Table C57, where we report summary statistics for individuals that we observed at ages 29 and 30. In this sample, one in four mothers did not complete the 12th grade and they were on average only 21.8 years old at the child's birth. Children's outcomes reflect possible disadvantages from being born to young mothers. By age 29-30 about 73% of the individuals attained only a high school degree or less. Compared to the NELS, the CNLSY has a much higher proportion of black respondents, 33%, versus 8% in the NELS, and higher percentage of Hispanics, 22%, versus 10% in the NELS. Similar to the PSID-CDS, the CNLSY provides measures of externalizing and internalizing behaviors based on the BPI (Table C58). Unlike PSID-CDS, the CNLSY only asked mothers BPI questions, and therefore the factors are constructed using mothers' reports, which we have shown to have less predictive power for children's outcomes.

The results linking years of schooling to the factors are reported in Table C59 and those linking earnings to the factors are reported in Table C60. In addition, we also report results using yearly income in Table C61. In all specifications reported in Table C59, whether we control for cognition or family or child characteristics and whether we separate the two genders, externalizing behavior is negatively associated with schooling (as is a single aggregated measure of misbehavior). This is similar to our results in the main paper. In the earnings regression, however, the problem of using mothers' reports resurfaces. As with PSID-CDS, factors constructed from mothers' reports are not good predictors of earnings. In line with results using the NCDS, it may also be the case that the externalizing premium does not extend to children of young mothers if a mother's youth reflects low socioeconomic status.

To summarize, using data from the NELS, the PSID and the CNLSY, we find consistent evidence that externalizing behavior measured from teachers' reports of children's classroom misbehavior negatively affects educational attainment and positively affects earnings. In contrast to findings using UK datasets, the externalizing earnings premium appears to be more prominent for boys rather than for girls in the U.S. This difference merits further exploration as it could reflect country-specific skill prices or social norms in different labor markets.

Table C57: CNLSY: Summary Statistics

	Both	Males	Females	Diff
Externalizing	-6.61e-10	0.150	-0.132	***
	(1.000)	(1.046)	(0.938)	
Internalizing	-2.37e-09	0.00670	-0.00588	
	(1.000)	(1.029)	(0.974)	
Cognition	1.47e-09	-0.0343	0.0301	
	(1.000)	(1.045)	(0.958)	
Years of Education	11.56	11.47	11.63	
	(0.929)	(0.885)	(0.960)	
Weekly Earnings	643.2	728.2	567.6	***
	(476.8)	(539.5)	(398.4)	
Yearly Income	26251.4	29541.0	23358.0	***
	(24981.2)	(26200.6)	(23494.1)	
Black	0.349	0.344	0.353	
	(0.477)	(0.475)	(0.478)	
Hispanic	0.226	0.227	0.226	
	(0.419)	(0.419)	(0.418)	
Observations	1820	851	969	1820

Notes: This table lists the summary statistics for the CNLSY sample. Wages and weekly earnings are measured in 2010 dollars. In Column (4), *, ** and *** mean that differences between males and females are significant at the 10, 5 and 1 percent levels, respectively.

Table C58: CNLSY: Mapping of Measurements to Factors

Question	Externalizing	Internalizing
Cheats or Tells Lies	X	
Bullies or is Cruel/Mean to Others	X	
Does not Seem to Feel Sorry after Misbehaving		
Breaks Things Deliberately (<12 yrs)	X	
Is Disobedient at School (>5 yrs)	X	
Has Trouble Getting along with Teachers (>5 yrs)	X	
Has Sudden Changes in Mood or Feeling	X	
Feels/Complains No One Loves Him/Her		X
Is Too Fearful or Anxious	X	X
Feels Worthless or Inferior		X
Is Unhappy, Sad, or Depressed	X	X
Clings to Adults (<12 yrs)		X
Cries Too Much (<12 yrs)		X
Demands a Lot of Attention (<12 yrs)		X
Is Too Dependent on Others (<12 yrs)		X
Is Rather High Strung, Tense, and Nervous	X	
Argues Too Much	x	
Is Disobedient at Home	X	
Is Stubborn, Sullen, or Irritable	X	
Has Strong Temper and Loses It Easily	X	
Has Difficulty Concentrating/Paying Attention	X	
Is Easily Confused, Seems in a Fog	X	X
Is Impulsive or Acts Without Thinking	X	
Has Trouble Getting Mind off Certain Thoughts	X	
Is Restless, Overly Active, Cannot Sit Still	X	
Has Trouble Getting along with Other Children	X	
Is Not Liked by Other Children	X	
Is Withdrawn, Does Not Get Involved with Others		X
Feels Others Are Out to Get Him/Her		
Hangs Around with Kids Who Get into Trouble		
Is Secretive, Keeps Things to Self		
Worries Too Much		

Notes: This table shows the mapping from questions in the behavior problem index (BPI) to the two underlying factors. The mapping and scores were constructed by the data administrators. More information is provided in the NLSY codebook (see `https://www.nlsinfo.org/content/cohorts/nlsy79-children/other-documentation/codebook-supplement/appendix-d-behavior-proble-0`)

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Table C59: CNLSY: Educational Attainment, Maternal Reports

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Mother)	-0.164	-0.115							
	(0.020)	(0.020)							
Externalizing (Mother)			-0.181	-0.133	-0.185	-0.157	-0.136	-0.085	-0.197
			(0.020)	(0.020)	(0.032)	(0.030)	(0.030)	(0.039)	(0.046)
Internalizing (Mother)					0.005	0.031	0.015	0.030	0.015
					(0.030)	(0.028)	(0.028)	(0.039)	(0.042)
Cognition		0.263		0.261		0.262	0.220	0.198	0.244
		(0.022)		(0.022)		(0.022)	(0.023)	(0.031)	(0.034)
Mother Completed 12th Grade							0.092	0.171	0.037
							(0.045)	(0.060)	(0.067)
Mother Went to College							0.283	0.298	0.275
							(0.055)	(0.074)	(0.080)
Age of Mother at Birth							0.042	0.055	0.033
							(0.010)	(0.014)	(0.014)
Black	-0.332	-0.141	-0.331	-0.142	-0.331	-0.141	-0.136	-0.221	-0.062
	(0.049)	(0.050)	(0.049)	(0.050)	(0.049)	(0.050)	(0.050)	(0.070)	(0.070)
Hispanic	-0.217	-0.094	-0.223	-0.099	-0.223	-0.100	-0.090	-0.169	-0.039
	(0.061)	(0.060)	(0.061)	(0.060)	(0.061)	(0.060)	(0.059)	(0.080)	(0.087)
Female	0.142	0.137	0.118	0.119	0.117	0.113	0.122		
	(0.044)	(0.043)	(0.044)	(0.043)	(0.045)	(0.044)	(0.043)		
Constant	11.633	11.522	11.645	11.531	11.646	11.534	10.505	10.219	10.704
	(0.045)	(0.042)	(0.045)	(0.043)	(0.045)	(0.043)	(0.200)	(0.284)	(0.334)
Obs.	1597	1597	1597	1597	1597	1597	1597	737	860

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to educational attainment at age 29 or 30 measured by years of completed education. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Parameters from Model [7] is also reported in Table 6 of the paper. Standard errors in parentheses.

Table C60: CNLSY: Log Earnings, Maternal Reports

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Mother)	-0.101	-0.073							
	(0.016)	(0.016)							
Externalizing (Mother)			-0.092	-0.062	-0.045	-0.020	0.002	-0.027	0.034
			(0.016)	(0.016)	(0.024)	(0.024)	(0.024)	(0.035)	(0.034)
Internalizing (Mother)					-0.063	-0.057	-0.066	-0.076	-0.047
					(0.024)	(0.024)	(0.025)	(0.039)	(0.031)
Cognition		0.145		0.147		0.146	0.077	0.057	0.099
		(0.018)		(0.019)		(0.018)	(0.019)	(0.027)	(0.027)
Years of Education							0.168	0.137	0.195
							(0.018)	(0.028)	(0.022)
Black	-0.103	-0.007	-0.103	-0.006	-0.103	-0.007	-0.004	-0.066	0.050
	(0.036)	(0.038)	(0.037)	(0.038)	(0.036)	(0.038)	(0.038)	(0.058)	(0.049)
Hispanic	-0.050	0.035	-0.052	0.034	-0.049	0.036	0.049	-0.020	0.122
	(0.043)	(0.043)	(0.043)	(0.044)	(0.043)	(0.044)	(0.045)	(0.068)	(0.061)
Female	-0.211	-0.218	-0.220	-0.223	-0.209	-0.213	-0.232		
	(0.032)	(0.032)	(0.033)	(0.032)	(0.033)	(0.032)	(0.033)		
Constant	6.457	6.403	6.463	6.406	6.456	6.401	4.482	4.880	3.905
	(0.029)	(0.029)	(0.029)	(0.030)	(0.029)	(0.030)	(0.205)	(0.323)	(0.264)
Obs.	1269	1269	1269	1269	1269	1269	1269	593	676

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to labor market earnings at age 29 or 30. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Parameters from Model [7] is also reported in Table 6 of the paper. Standard errors in parentheses.

Table C61: CNLSY: Log Income, Maternal Reports

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Misbehavior (Mother)	-0.088	-0.064							
	(0.019)	(0.019)							
Externalizing (Mother)			-0.094	-0.071	-0.091	-0.075	-0.043	-0.051	-0.034
			(0.019)	(0.019)	(0.029)	(0.028)	(0.028)	(0.041)	(0.038)
Internalizing (Mother)					-0.004	0.006	0.001	-0.003	0.011
					(0.029)	(0.028)	(0.027)	(0.042)	(0.035)
Cognition		0.134		0.133		0.134	0.053	0.070	0.037
		(0.020)		(0.020)		(0.020)	(0.021)	(0.028)	(0.030)
Years of Education							0.197	0.133	0.247
							(0.018)	(0.026)	(0.024)
Black	-0.194	-0.112	-0.195	-0.113	-0.195	-0.113	-0.105	-0.191	-0.040
	(0.042)	(0.043)	(0.042)	(0.043)	(0.042)	(0.043)	(0.041)	(0.062)	(0.055)
Hispanic	-0.103	-0.036	-0.106	-0.039	-0.106	-0.039	-0.034	-0.068	-0.007
	(0.046)	(0.047)	(0.046)	(0.047)	(0.046)	(0.047)	(0.048)	(0.070)	(0.065)
Female	-0.182	-0.191	-0.193	-0.200	-0.192	-0.201	-0.232		
	(0.036)	(0.035)	(0.036)	(0.036)	(0.037)	(0.036)	(0.036)		
Constant	10.390	10.333	10.396	10.338	10.395	10.338	8.091	8.864	7.253
	(0.030)	(0.031)	(0.030)	(0.031)	(0.030)	(0.031)	(0.205)	(0.301)	(0.279)
Obs.	1196	1196	1196	1196	1196	1196	1196	569	627

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to income at age 29 or 30. Models [1]-[7] include all individuals and a gender dummy, Model [8] includes only males and Model [9] only females. Standard errors in parentheses.

Appendix D Additional Analyses and Potential Mechanisms

Appendix D.1 Heterogeneity in the Returns to Education

One possible interpretation of our main findings is that high externalizing boys face relatively low returns to higher levels of education which would disincentivize education if students are aware of this difference. Here, we use our descriptive framework to check for this possibility. We regress log earnings at age 33 on the crude measures of socio-emotional and cognitive skills separately for each of the 6 educational groups. We report these estimates separately by gender in Table D1. We find no clear pattern in the heterogeneity of the returns to skills across the educational groups. Also, the differences in the returns across the different groups is not statistically significant, so we can't reject that they are the same.

Table D1: Log Earnings: Returns to Skills by Education

	Males					
	No Qual.	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	0.008	0.023	0.031	0.018	0.010	0.042
	(0.021)	(0.019)	(0.015)	(0.020)	(0.026)	(0.024)
Internalizing Behavior	-0.004	-0.055	-0.079	-0.063	-0.080	-0.043
	(0.023)	(0.021)	(0.014)	(0.020)	(0.026)	(0.023)
Cognition	0.108	0.029	0.062	0.078	0.080	0.061
	(0.041)	(0.032)	(0.016)	(0.020)	(0.024)	(0.023)
	Females					
	No Qual.	CSE	O-lvl	A-lvl	H.Edu	H.Deg
Externalizing Behavior	0.000	0.092	0.070	0.053	-0.078	0.027
	(0.051)	(0.047)	(0.037)	(0.095)	(0.062)	(0.078)
Internalizing Behavior	-0.059	-0.083	-0.029	0.184	-0.068	0.057
	(0.046)	(0.045)	(0.035)	(0.074)	(0.057)	(0.063)
Cognition	0.083	0.147	0.135	0.083	0.052	0.090
	(0.063)	(0.066)	(0.034)	(0.080)	(0.049)	(0.063)

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to earnings by education groups. We regress log earnings of workers on crude measures of unobserved skills by education groups. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill. Standard errors in parenthesis

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Appendix D.2 Heterogeneity in Returns by Tasks

We sketch a simple task-based framework to examine heterogeneous returns to skills by tasks employed in different occupations. Suppose an individual i possesses three skills,

externalizing (f_1), internalizing (f_2) and cognitive skill (f_3). In her job, she needs to complete two tasks, say an abstract/social task ($k = 1$) and a routine/manual task ($k = 2$). Let $T_{i,k}$ be her productivity in performing task k and it is determined by the three skills and the schooling level (s_i):

$$T_{i,k} = \tau_k(f_{i,1}, f_{i,2}, f_{i,3}, s_i), \quad k = 1, 2 \tag{1}$$

Her labor market earnings are determined by her productivity in each task, the intensity with which each task is required in her occupation of choice (Υ_i), and an individual productivity component (Ψ) that captures additional effects of skills and education that do not interact with the tasks intensity (e.g., preference for working long hours):

$$y_i = \Upsilon_i(T_{i,1}, T_{i,2}, \Psi(f_{i,1}, f_{i,2}, f_{i,3}, s_i)). \tag{2}$$

A special case of this general formulation is when we assume linear relationships in functions τ_k, Υ_i and Ψ in (1) and (2). In particular, let $\iota_{i,1}$ be the intensity of abstract/social tasks and $\iota_{i,2}$ the intensity of routine/manual tasks required in individual i's occupation in Υ_i, then we can rewrite equation (2) as

$$\begin{aligned}
y_i &= \iota_{i,1}T_{i,1} + \iota_{i,2}T_{i,2} + \psi_1 f_{i,1} + \psi_2 f_{i,2} + \psi_3 f_{i,3} + \psi_s s_i + \psi_0 \\
&= \iota_{i,1}\left(\sum_{j=1}^{3} \tau_{1,j} f_{i,j} + \tau_{1,s} s_i + \tau_{1,0}\right) + \iota_{i,2}\left(\sum_{j=1}^{3} \tau_{2,j} f_{i,j} + \tau_{2,s} s_i + \tau_{2,0}\right) + \sum_{j=1}^{3} \psi_j f_{i,j} + \psi_s s_i + \psi_0 \\
&= \sum_{j=1}^{3} \psi_j f_{i,j} + \sum_{j=1}^{3} \tau_{1,j} \cdot (\iota_{i,1} \times f_{i,j}) + \tau_{1,0} \cdot \iota_{i,1} \\
&\qquad + \sum_{j=1}^{3} \tau_{2,j} \cdot (\iota_{i,2} \times f_{i,j}) + \tau_{2,0} \cdot \iota_{i,2} + \alpha_s s_i + \psi_0
\end{aligned} \tag{3}$$

where $\alpha_s = \iota_{i,1}\tau_{1,s} + \iota_{i,2}\tau_{2,s} + \psi_s$.

Equation (3) highlights how the labor market returns of different skills will depend on the combination of tasks required in their chosen occupation. In particular, the return to skill j for individual i will depend on the skill's general productivity (ψ_j), its task productivity effects ($\tau_{1,j}$ and $\tau_{2,j}$), and on the task intensities at the individual's chosen occupation ($\iota_{i,1}$ and $\iota_{i,2}$).

The task intensities ($\iota_{i,1}$ and $\iota_{i,2}$) are observed in our data. We follow a similar methodology as in Acemoglu and Autor (2011) and Autor and Handel (2013) to construct the

task intensity for each individual i in occupation k (ι_{ik}). The task intensities are composite measures of O*NET Work Activities and Work Context Importance scales.[6] The abstract/social task measure is a normalized composite scale of six O*NET subscales: "analyzing data/information," "thinking creatively," "interpreting information for others," "establishing and maintaining personal relationships," and "guiding, directing, and motivating subordinates and coaching and developing others." The routine/manual task measure is a normalized composite scale of six O*NET subscales: "importance of repeating the same tasks," "importance of being exact or accurate," "structured versus unstructured work," "controlling machines and processes," "keeping a pace set by machinery or equipment," and "time spent making repetitive motions." The two composite scales were constructed using factor analysis.

We extend our main econometric model by replacing the earnings outcome equation with equation (3) to estimate heterogeneous skill returns by tasks. Since the task intensities ($\iota_{i,1}$ and $\iota_{i,2}$) are observed, the estimated interactions between skills and task intensities are measures of skills task productivity effects ($\tau_{k,j}$s). A positive (negative) interaction between task k and skill j implies that skill j increases (decreases) individual productivity in performing task k. The results from the extended model are found in Table D2.

[6]The O*NET is an American classification system, and the NCDS collected detailed information on individual occupations in the ISCO-88 classification system. We rely on the methodology in Hardy, Keister, and Lewandowski (2018) to link the NCDS individuals occupations to the O*NET classification.

Table D2: Log Earnings by Occupational Tasks

	Males		Females	
	Routine	Abstract	Routine	Abstract
Externalizing Factor	0.069	0.059	0.087	0.077
	(0.018)	(0.016)	(0.028)	(0.029)
Internalizing Factor	-0.104	-0.090	-0.063	-0.049
	(0.020)	(0.018)	(0.032)	(0.035)
Cognition	0.019	0.015	0.028	0.050
	(0.012)	(0.011)	(0.019)	(0.020)
Ext. x Task Intensity	0.036	-0.026	-0.012	0.003
	(0.015)	(0.015)	(0.031)	(0.038)
Int. x Task Intensity	-0.033	0.011	0.018	-0.023
	(0.015)	(0.015)	(0.034)	(0.042)
Cog. x Task Intensity	-0.006	-0.004	0.012	-0.017
	(0.010)	(0.010)	(0.021)	(0.023)
CSE	0.051	0.063	0.069	0.114
	(0.033)	(0.038)	(0.058)	(0.059)
O-Level	0.147	0.139	0.116	0.184
	(0.029)	(0.033)	(0.054)	(0.054)
A-Level	0.182	0.175	0.324	0.341
	(0.031)	(0.035)	(0.065)	(0.067)
Higher Education	0.314	0.285	0.572	0.418
	(0.034)	(0.037)	(0.060)	(0.068)
Higher Degree	0.426	0.386	0.776	0.543
	(0.040)	(0.043)	(0.070)	(0.079)
CSE x Task Int.	0.023	0.005	0.008	0.081
	(0.029)	(0.034)	(0.060)	(0.072)
O-Level x Task Int.	-0.061	0.037	0.008	0.071
	(0.023)	(0.029)	(0.053)	(0.065)
A-Level x Task Int.	-0.028	0.021	-0.079	0.121
	(0.024)	(0.031)	(0.067)	(0.081)
H. Edu. x Task Int.	-0.042	0.006	-0.089	0.085
	(0.027)	(0.033)	(0.063)	(0.075)
H. Deg. x Task Int.	-0.004	-0.009	-0.207	0.119
	(0.030)	(0.037)	(0.076)	(0.087)
Task Intensity	0.041	0.045	0.196	0.114
	(0.020)	(0.027)	(0.049)	(0.060)
Constant	5.320	5.288	4.872	4.860
	(0.039)	(0.035)	(0.063)	(0.064)

Notes: This is the long-version of Table 7 in the main paper. This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages and hours worked across occupational tasks. We regress log hourly wages and log hours worked on a set of observable variables along with the unobserved skills and their interaction with the occupational task intensities. Task intensities are standardized composite measures of O*NET Work Activities and Work Context Importance scales, as in Acemoglu and Autor (2011) and Autor and Handel (2013). The abstract/social task measure is a normalized composite scale of six O*NET subscales: 'analyzing data/information', 'thinking creatively', 'Interpreting information for others', 'establishing and maintaining personal relationships', and 'guiding, directing, and motivating subordinates and Coaching and developing others'. The routine/manual task measure is a normalized composite scale of six O*NET subscales: 'importance of repeating the same tasks', 'importance of being exact or accurate', 'structured versus unstructured work', 'controlling machines and processes', 'keeping a pace set by machinery or equipment', and 'time spent making repetitive motions'. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors in parentheses.

Appendix D.3 Subgroup Analysis: High-SES and Low-SES Children

Studying a sample of disadvantaged black children in the U.S., Heckman, Pinto, and Savelyev (2013) find that an early childhood education program increased earnings in part by reducing externalizing behavior. In contrast, we show that externalizing behavior can be valuable in the labor market. In this section, we explore whether differences in findings are explained by differences in the socioeconomic status of the group being analyzed. One possibility is that children born into poorer families face a higher likelihood of criminality or police involvement for the same level of externalizing behavior.

We modify our benchmark econometric model in two ways. First, we include a measure of police involvement at age 16 as an additional outcome equation and as an additional explanatory variable in the schooling, wage and hours equations. Second, we estimate the model on a sub-sample of our analytic sample, which is selected to resemble the family characteristics of the sample studied in Heckman, Pinto, and Savelyev (2013). In particular, we construct a subsample of our analytic sample consisting of subjects who faced financial difficulties during childhood. We refer to this sample as the "Low SES" subsample. Recall, this occurs if the interviewer reported that the household appeared to be experiencing poverty in 1965 or if a member of the household self-reported having financial difficulties in the 12 months prior to being observed in either 1969 or 1974.[7] We estimate the benchmark econometric model separately for the "Low SES" subsample and for all other subjects in our analytic sample, which we call the "High SES" subsample. Summary statistics for the subsamples are found in Tables D3 and D4. The "Low SES" sample completes less education, earns lower wages, and are less likely to be employed, though when employed hours are similar across groups. They also score higher on all BSAG maladjustment syndromes, on average. We estimate the measurement system separately by group since it is possible that underlying skills map to observed behaviors differently by group. Similarly, to study black-white differentials in labor market outcomes in the U.S., Urzúa (2008) allows the distribution and impact of underlying skills to vary by race.

Estimating separate models by childhood SES, we find that many patterns are similar to the main model.[8] However, we also find some differences by childhood SES. First, we estimate

[7] An alternative would be to use family income. However, perhaps surprisingly, the NCDS does not collect information on family income or parental pay in the first three surveys. In the fourth survey, when children were 16 years old, categorical information was collected on each parent's work pay. However, this information on parental pay is missing for over 20% of our sample. Therefore, we decided to use the available information about financial difficulties instead.

[8] In results available upon request, we separated our sample into four groups by gender and financial difficulty status. The main patterns remain largely similar. However, the standard errors for the group in financial difficulties, when divided by gender, were too large for any useful inference to be made.

a larger penalty for externalizing behavior for educational attainment among individuals that grew up in low-SES households (Table D5). This finding is broadly consistent with results in Ramey (2018), who shows that externalizing blacks in the U.S. face a higher likelihood of punishment by suspension in comparison to similarly externalizing whites. This could be because schools that serve low-SES children in the UK (or black children in the U.S.) have fewer resources to address externalizing behavior and therefore react to it through suspensions or expulsions.[9]

Perhaps most importantly, we find that the labor market returns to externalizing behavior fail to extend to the "Low SES" subsample. First, individuals that grew up with financial difficulties experience less than a third of the externalizing wage premium than individuals that did not (Table D6). Second, in the hours equation (Table D7), the coefficient is negative and insignificant for the low-SES group (versus 0.047 and significant for the high-SES group). Wage returns to the other skills are similar across the two groups, as are the returns to education. On the other hand, there are some differences in the influence of internalizing behavior and cognition for the hours worked decision. Internalizing behavior decreases hours worked for the high-SES group but not for the low-SES group and cognition increases hours worked for the low-SES group only.

A very important caveat to the results presented in this section is that we cannot statistically differentiate the returns to externalizing behavior for the two socioeconomic groups because the standard errors in the estimates for the Low SES sample are large. In other words, we are unable to state that the positive influence of externalizing on earnings is limited to children from higher-income families. This could be due to a relatively small sample size of individuals from poorer backgrounds, but we cannot be sure this is the case. Still, we present these results as they are broadly consistent with earlier findings in Heckman, Pinto, and Savelyev (2013) and because they provide avenues for future research.

Moreover, to understand possible heterogeneity in returns, we further investigate differences between the high-SES and low-SES groups. Following the results in Heckman, Pinto, and Savelyev (2013), one possible explanation for differences in results by childhood SES status is that low-SES individuals are at a higher risk of criminal behavior for a given level of externalizing behavior. In line with this possibility, we find that low-SES individuals are more likely to have some police involvement (the estimated constant in the police involvement equation is 0.090 for the high-SES group and 0.179 for the low-SES group). However, the relationship between externalizing behavior and police involvement is stronger for the high-SES group (see Table D8).[10] Interestingly, we find little evidence that police involve-

[9]There are also some differences in the returns to family characteristics, such as the father's occupation.

[10]Interestingly, internalizing behavior and cognition are associated with less police involvement, though

ment is related to worse labor market outcomes for either SES subgroup (see the coefficients for police involvement in Tables D6 and D7). In other words, while externalizing behavior predicts higher police involvement, police involvement does not appear to derail labor market prospects among individuals in the British sample we study, including those who grew up in families facing financial difficulties. These results raise the possibility that the returns to externalizing behavior might be negative in a context where police involvement is highly penalized in the labor market. This is the sort of context studied in Heckman, Pinto, and Savelyev (2013), who examine a sample composed mostly of at-risk black youths in the U.S. However, for our sample, police involvement cannot explain why low-SES individuals in the British sample we study receive little payoff to externalizing behavior.

Therefore, despite our initial results showing that externalizing behavior is associated with better labor market outcomes, this positive association does not extend to individuals who faced poverty during childhood. In other words, the payoffs to socio-emotional skills are context-dependent, as argued in Lundberg (2013). To explain differences in returns to skills across socioeconomic groups, we are therefore left with at least two distinct, but related possibilities. The first is that there are true differences in the productivity of externalizing behavior across groups. For example, children born into wealthier families may be better able to channel aggressive tendencies into productive activities.[11] A second possibility is that high-externalizing individuals from lower classes face different selection rules than their higher-SES counterparts, but these rules are not observed by the econometrician. For example, managers or co-workers may view high-externalizing individuals from high-SES families as ambitious leaders and be willing to hire them in high-wage positions or to promote them. In contrast, high-externalizing individuals from lower SES families may find their advancement thwarted if they are viewed as disruptive, aggressive or impolite. If so, high-externalizing individuals from low-SES families are not unproductive *per se*, but instead sort into jobs where they earn less. In both cases, childhood SES and externalizing behavior exhibit complementarities. Seen another way, these results suggest the concerning possibility that children from poorer families are unable to unleash the potential of skills that are valuable and lucrative for children born into wealthier families. These possibilities should be explored in greater detail using data that allow for more precise estimates of differences in returns to skills by socio-demographic group.

the coefficients are much larger in magnitude for high-SES individuals.

[11] See, e.g., Doyle et al. (2009) on the timing of investments to decrease inequality.

Table D3: Summary Statistics of Demographics, Education and Labor Market Outcomes, Subsamples by SES

	Both	High SES	Low SES	Diff
No Formal Education	0.112	0.0842	0.259	***
	(0.316)	(0.278)	(0.438)	
CSE	0.128	0.116	0.192	***
	(0.334)	(0.320)	(0.394)	
O Level	0.345	0.350	0.320	
	(0.475)	(0.477)	(0.467)	
A Level	0.147	0.159	0.0871	***
	(0.354)	(0.365)	(0.282)	
Higher Education	0.146	0.155	0.0992	***
	(0.354)	(0.362)	(0.299)	
Higher Degree	0.122	0.137	0.0431	***
	(0.327)	(0.343)	(0.203)	
Hourly Wage	6.636	6.831	5.599	***
	(3.053)	(3.071)	(2.730)	
Weekly Hours Worked	36.36	36.58	35.18	**
	(12.67)	(12.52)	(13.39)	
Weekly Earnings	252.5	260.6	209.1	***
	(152.5)	(153.6)	(138.4)	
In Paid Work	0.804	0.808	0.782	*
	(0.397)	(0.394)	(0.413)	
Employee	0.675	0.677	0.667	
	(0.468)	(0.468)	(0.472)	
Financial Difficulty	0.160			
	(0.367)			
London Before 16	0.355	0.366	0.302	***
	(0.479)	(0.482)	(0.459)	
London at 33	0.298	0.308	0.244	***
	(0.457)	(0.462)	(0.430)	
Female	0.507	0.503	0.523	
	(0.500)	(0.500)	(0.500)	
Observations	7241	6082	1159	7241

Notes: This table lists the summary statistics of demographics, education and labor market outcomes for the analytic sample of 7,241 individuals. For education categories, and employment, entries are in the form of percentages divided by 100. Wages and weekly earnings are measured in 1992 British pounds. Employee means the percentage of individuals in the sample that are in paid work and not self-employed. Statistics are reported separately for both SES groups (Column (1)), for high SES (Column (2)) and for low SES (Column (3)). In Column (4), *, ** and *** mean that differences between SES groups are significant at the 10, 5 and 1 percent levels, respectively.

Table D4: Summary Statistics of BSAG Syndromes, Subsamples by SES

	Both	High SES	Low SES	Diff
Hostility Towards Adults	0.763	0.698	1.104	***
	(1.753)	(1.647)	(2.198)	
Hostility Towards Children	0.239	0.216	0.361	***
	(0.718)	(0.675)	(0.902)	
Anxiety for Acceptance by Adults	0.515	0.481	0.690	***
	(1.152)	(1.098)	(1.392)	
Anxiety for Acceptance by Children	0.298	0.284	0.368	***
	(0.761)	(0.749)	(0.819)	
Restlessness	0.194	0.177	0.280	***
	(0.520)	(0.495)	(0.627)	
Inconsequential Behavior	1.262	1.165	1.770	***
	(1.869)	(1.776)	(2.229)	
Depression	0.932	0.857	1.327	***
	(1.454)	(1.382)	(1.732)	
Withdrawal	0.308	0.293	0.387	***
	(0.772)	(0.744)	(0.902)	
Unforthcomingness	1.477	1.415	1.805	***
	(2.034)	(1.991)	(2.219)	
Writing Off of Adults and Adult Standards	0.908	0.855	1.185	***
	(1.588)	(1.524)	(1.866)	
Observations	7241	6082	1159	7241

Notes: This table lists the summary statistics of the BSAG maladjustment syndromes for the analytic sample of 7,241 individuals. Measures are constructed using teachers' reports of misbehavior in school. For each maladjustment syndrome, a child receives a score, which is an integer between 0 and 15, with 15 indicating a persistent display of behavior described by the maladjustment syndrome. In the table, entries are averages for each syndrome for the analytic sample. Statistics are reported separately for all individuals (Column (1)), for individual that did not experience financial difficulties growing up (Column (2)) and for those that did (Column (3). In Column (4), *, ** and *** mean that differences between SES groups are significant at the 10, 5 and 1 percent levels, respectively.

Table D5: Subgroup Analysis: Educational Attainment, Multinomial Logit

	High SES					Low SES				
	CSE	O-lvl	A-lvl	H.Edu.	H.Deg.	CSE	O-lvl	A-lvl	H.Edu.	H.Deg.
Externalizing Behavior	-0.084	0.021	0.052	-0.037	-0.346	-0.156	-0.198	-0.514	-0.293	-0.031
	(0.079)	(0.065)	(0.079)	(0.084)	(0.110)	(0.201)	(0.199)	(0.322)	(0.294)	(0.576)
Internalizing Behavior	-0.018	-0.248	-0.379	-0.367	-0.223	-0.075	-0.245	0.002	-0.176	-0.667
	(0.100)	(0.087)	(0.102)	(0.105)	(0.135)	(0.227)	(0.209)	(0.343)	(0.298)	(0.642)
Cognition	0.757	1.555	2.004	2.095	3.490	0.939	1.449	1.876	1.858	2.945
	(0.092)	(0.082)	(0.093)	(0.096)	(0.123)	(0.167)	(0.160)	(0.210)	(0.216)	(0.387)
Mother Education	0.239	0.408	0.836	0.798	1.122	0.544	0.617	0.665	1.183	1.665
	(0.186)	(0.170)	(0.183)	(0.182)	(0.194)	(0.360)	(0.350)	(0.444)	(0.428)	(0.557)
Father Education	0.098	0.515	0.720	0.759	1.314	0.353	0.073	-0.247	0.791	1.041
	(0.236)	(0.212)	(0.223)	(0.224)	(0.233)	(0.412)	(0.427)	(0.592)	(0.487)	(0.616)
No Father Info.	0.426	1.091	1.296	0.618	1.668	-0.028	0.250	1.613	0.520	0.162
	(0.457)	(0.410)	(0.454)	(0.493)	(0.492)	(0.757)	(0.703)	(0.745)	(0.983)	(1.566)
Father in Skilled Oc.	0.030	0.233	0.439	0.658	0.515	-0.268	0.188	0.579	-0.121	0.211
	(0.136)	(0.126)	(0.152)	(0.161)	(0.204)	(0.211)	(0.206)	(0.325)	(0.287)	(0.518)
Father in Managerial Oc.	0.094	0.608	0.938	1.314	1.508	1.852	2.383	3.178	1.995	2.679
	(0.225)	(0.205)	(0.228)	(0.231)	(0.263)	(0.960)	(0.969)	(1.053)	(1.035)	(1.119)
Working Mother	0.081	0.113	0.019	0.122	0.050	0.074	0.134	0.338	0.416	-0.029
	(0.129)	(0.117)	(0.132)	(0.134)	(0.148)	(0.211)	(0.203)	(0.306)	(0.290)	(0.458)
London Dummy	0.626	0.185	0.145	0.083	-0.014	0.690	0.526	0.286	-0.256	-0.105
	(0.133)	(0.125)	(0.139)	(0.141)	(0.156)	(0.235)	(0.228)	(0.343)	(0.340)	(0.485)
Police Involvement	-0.798	-1.109	-1.451	-1.634	-1.976	-0.903	-1.044	-1.533	-1.557	-14.047
	(0.230)	(0.208)	(0.264)	(0.309)	(0.387)	(0.374)	(0.371)	(0.584)	(0.693)	(3.977)
Police Info. Missing	-0.568	-0.695	-0.857	-0.875	-0.965	-0.245	-0.566	-0.684	-0.811	-1.009
	(0.135)	(0.123)	(0.142)	(0.143)	(0.163)	(0.229)	(0.216)	(0.331)	(0.319)	(0.539)
Female	0.034	-0.156	-1.100	-0.635	-0.852	-0.625	-0.822	-1.900	-0.697	-1.288
	(0.128)	(0.119)	(0.138)	(0.137)	(0.162)	(0.231)	(0.228)	(0.334)	(0.316)	(0.552)
Constant	0.954	2.411	1.765	1.248	-0.122	0.529	0.986	-0.400	-0.325	-2.403
	(0.191)	(0.172)	(0.196)	(0.205)	(0.250)	(0.293)	(0.294)	(0.377)	(0.385)	(0.588)

Notes: This table lists parameter estimates from a multinomial logit model used to link socio-emotional and cognitive skills to educational attainment, by high-SES and low-SES subsamples. We estimate educational attainment on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors are in parentheses.

Table D6: Subgroup Analysis: Log Hourly Wages

	High SES	Low SES
Externalizing Behavior	0.052	0.015
	(0.013)	(0.029)
Internalizing Behavior	-0.074	-0.066
	(0.015)	(0.032)
Cognition	0.052	0.046
	(0.009)	(0.019)
CSE	0.050	0.032
	(0.031)	(0.050)
O-Level	0.158	0.121
	(0.028)	(0.042)
A-Level	0.263	0.126
	(0.030)	(0.059)
Higher Education	0.421	0.416
	(0.030)	(0.054)
Higher Degree	0.534	0.515
	(0.034)	(0.080)
London Dummy	0.172	0.211
	(0.012)	(0.033)
Police Involvement	-0.018	-0.012
	(0.028)	(0.057)
Police Info. Missing	-0.007	0.011
	(0.013)	(0.032)
Female	-0.322	-0.377
	(0.012)	(0.030)
Constant	1.650	1.615
	(0.027)	(0.040)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to hourly wages, by high-SES and low-SES subsamples. We regress log hourly wages on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors are in parentheses.

Table D7: Subgroup Analysis: Log Weekly Hours Worked

	High SES	Low SES
Externalizing Behavior	0.047	-0.030
	(0.013)	(0.032)
Internalizing Behavior	-0.040	0.043
	(0.015)	(0.036)
Cognition	0.002	0.050
	(0.010)	(0.023)
CSE	0.015	0.038
	(0.026)	(0.049)
O-Level	0.032	0.036
	(0.024)	(0.043)
A-Level	0.072	0.072
	(0.030)	(0.080)
Higher Education	0.066	0.155
	(0.028)	(0.071)
Higher Degree	0.093	0.116
	(0.032)	(0.108)
London Dummy	0.025	0.037
	(0.013)	(0.037)
Police Involvement	0.061	0.041
	(0.042)	(0.074)
Police Info. Missing	0.011	0.017
	(0.014)	(0.034)
Female	-0.520	-0.579
	(0.017)	(0.046)
Constant	3.690	3.687
	(0.028)	(0.058)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to hours worked, by high-SES and low-SES subsamples. We regress log weekly hours worked on a set of observable variables along with the unobserved skills. The coefficients on the three skills have been standardized to represent a 1 standard deviation effect. Standard errors are in parentheses.

Table D8: Subgroup Analysis: Police Involvement at 16

	High SES	Low SES
Externalizing Behavior	0.159	0.020
	(0.024)	(0.015)
Internalizing Behavior	-0.042	-0.000
	(0.015)	(0.017)
Cognition	-0.025	-0.018
	(0.004)	(0.016)
Mother Education	0.004	-0.051
	(0.007)	(0.042)
Father Education	0.000	-0.006
	(0.009)	(0.037)
No Father Info.	0.005	0.060
	(0.017)	(0.045)
Father in Skilled Oc.	-0.018	-0.030
	(0.006)	(0.018)
Father in Managerial Oc.	-0.026	-0.087
	(0.009)	(0.088)
Working Mother	0.004	0.009
	(0.006)	(0.018)
London Dummy	-0.017	0.011
	(0.006)	(0.021)
Female	-0.051	-0.129
	(0.007)	(0.029)
Constant	0.090	0.179
	(0.019)	(0.037)

Notes: This table lists parameter estimates from a linear model used to link socio-emotional and cognitive skills to police involvement at age 16, by high-SES and low-SES subsamples. We regress log weekly hours worked on a set of observable variables along with the unobserved factors. The coefficients on the three factors have been standardized to represent a 1 standard deviation effect. Standard errors are in parentheses.

Appendix D.4 Personality Traits and Cortisol

Appendix D.4.1 Controlling for the Big 5 Personality Traits

We include the Big 5 personality traits (extraversion, agreeableness, conscientiousness, emotional stability, and intellect) in the ordered probit model of schooling and the regression of earnings in the descriptive preliminary analysis, as in Section 2.3. Table D9 reports the correlation coefficients between the 3 skills and the Big 5 traits. Table D10 and D11 shows that controlling for the Big 5 traits reduces the effect of externalizing behavior on earnings and increase its negative effect on education. However, the key patterns remain after we control for the Big 5 personality traits. Thus, while there is some correlation between the factors we study and the Big 5 personality traits, they measure different underlying skills. Furthermore, a key concern with this analysis is that the Big 5 personality traits are measured at age 50 in the NCDS. Personality traits evolve during young adult years and only stabilize in the mid-30s, which makes the interpretation of results difficult (Todd and Zhang, 2020). For example, high-externalizing individuals may develop certain personality traits over their work life in order to work productively. A better test of whether the inclusion of additional socio-emotional skills affects the relationship between externalizing behavior, schooling and earnings is to consider other skills measured at the same time. This is not possible in the NCDS, but is possible in the British Cohort Study, which we examine in greater detail in Appendix C.3. Using the BCS, we construct socio-emotional skills from a larger set of behavioral questions. The larger number of measurements allows us to identify as many as 8 distinct factors, three of them capturing externalizing behavior, internalizing behavior and cognition. We find that the key patterns from our benchmark model still hold when we identify the externalizing behavior using the larger set of measurements, and also when we include the larger set of socio-emotional skills in the choice and outcome equations.

Appendix D.4.2 Controlling for Stress Hormones (Cortisol)

We include a measure of cortisol in the ordered probit model of schooling and the regression of earnings in the descriptive preliminary analysis, as in Section 2.3. Table D12 reports the correlation coefficients between the 3 skills and a salivary cortisol measure collected at age 44. Table D13 and D14 shows that controlling for cortisol doesn't change significantly the effect of externalizing behavior on earnings or its negative effect on education. Thus, while there is some correlation between the factors we study and the cortisol measure, it influences earnings and education via different pathways. Furthermore, as with the Big5, a key concern with this analysis is that the cortisol measure was collected at the age 44 survey. Cortisol

Table D9: Big 5: Correlation Matrix

Variable	Ext.	Int.	Cog.	Ext.	Agr.	Con.	Emo.	Int.
Externalizing	1.000							
Internalizing	0.505	1.000						
Cognition	-0.346	-0.336	1.000					
Extraversion	0.005	-0.142	0.060	1.000				
Agreeableness	-0.148	-0.142	0.147	0.351	1.000			
Conscientiousness	-0.084	-0.105	0.077	0.159	0.281	1.000		
Emotional Stability	-0.065	-0.058	0.112	0.232	0.055	0.205	1.000	
Intellect	-0.064	-0.127	0.339	0.398	0.341	0.245	0.089	1.000

Notes: This table contains correlation coefficients between the crude measures of the unobserved skills and the Big 5 personality traits measured at age 50 in the NCDS. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill.

at 44 is a poor proxy for the stress hormones at age 11 or 33 when skills and earnings were measured. This makes the interpretation of results difficult. With better data, we hope that future research can explore the possible biological pathways through which skills influence education and labor market outcomes.

Table D10: Big 5: Educational Attainment

Variable	[1]	[2]	[3]	[4]
Externalizing	-0.068	-0.070	-0.078	-0.079
	(0.021)	(0.021)	(0.021)	(0.022)
Internalizing	-0.071	-0.060	-0.066	-0.057
	(0.020)	(0.021)	(0.021)	(0.021)
Cognition	0.721	0.623	0.663	0.572
	(0.019)	(0.020)	(0.020)	(0.021)
Extraversion			-0.027	-0.026
			(0.019)	(0.019)
Agreeableness			0.012	0.017
			(0.020)	(0.020)
Conscientiousness			0.015	0.009
			(0.017)	(0.017)
Emotional Stability			0.017	0.009
			(0.017)	(0.017)
Intellect			0.194	0.182
			(0.019)	(0.019)
Father Edu		0.246		0.242
		(0.038)		(0.038)
Mother Edu		0.257		0.245
		(0.042)		(0.043)
No Info on Father Figure		0.266		0.240
		(0.096)		(0.098)
Father in Skilled Occupation		0.172		0.164
		(0.042)		(0.042)
Father in Managerial Occupation		0.369		0.360
		(0.052)		(0.052)
Working Mother		-0.010		-0.005
		(0.033)		(0.033)
Financial Difficulties		-0.275		-0.274
		(0.049)		(0.050)
Female	-0.299	-0.302	-0.294	-0.303
	(0.032)	(0.032)	(0.036)	(0.036)
Cutoff 1	-1.840	-1.638	-1.870	-1.675
	(0.038)	(0.055)	(0.040)	(0.057)
Cutoff 2	-1.133	-0.909	-1.153	-0.938
	(0.030)	(0.050)	(0.031)	(0.051)
Cutoff 3	0.069	0.332	0.065	0.318
	(0.026)	(0.049)	(0.028)	(0.050)
Cutoff 4	0.572	0.853	0.578	0.847
	(0.026)	(0.049)	(0.028)	(0.050)
Cutoff 5	1.272	1.581	1.291	1.588
	(0.029)	(0.052)	(0.030)	(0.052)
Obs.	4645	4645	4645	4645

Notes: This table contains parameter estimates from ordered probit models used to link socio-emotional and cognitive skills to educational attainment. We estimate the ordered probability of choosing 1 of 6 schooling levels on a set of observable variables along with crude measures of unobserved skills. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill. Models [1]-[2] are identical to the preliminary analysis reported in the paper, while Models [3]-[4] include further the Big 5 personality traits measured at age 50 in the NCDS. Standard errors in parentheses.

Table D11: Big 5: Log Weekly Earnings

Variable	[1]	[2]	[3]	[4]
Externalizing	0.023	0.028	0.017	0.022
	(0.012)	(0.012)	(0.012)	(0.012)
Internalizing	-0.057	-0.046	-0.049	-0.038
	(0.012)	(0.012)	(0.012)	(0.012)
Cognition	0.181	0.081	0.158	0.073
	(0.011)	(0.013)	(0.012)	(0.013)
Extraversion			0.024	0.030
			(0.012)	(0.012)
Agreeableness			-0.032	-0.031
			(0.012)	(0.012)
Conscientiousness			0.023	0.024
			(0.011)	(0.011)
Emotional Stability			0.027	0.023
			(0.011)	(0.010)
Intellect			0.067	0.036
			(0.013)	(0.013)
CSE		0.046		0.039
		(0.051)		(0.051)
O Level		0.154		0.138
		(0.047)		(0.046)
A Level		0.287		0.264
		(0.049)		(0.049)
Higher Education		0.456		0.429
		(0.049)		(0.049)
Higher Degree		0.589		0.557
		(0.052)		(0.053)
London Dummy	0.226	0.215	0.221	0.213
	(0.022)	(0.022)	(0.022)	(0.022)
Financial Difficulties	-0.061	-0.021	-0.058	-0.021
	(0.030)	(0.029)	(0.030)	(0.029)
Female	-0.900	-0.858	-0.874	-0.839
	(0.021)	(0.021)	(0.023)	(0.023)
Constant	5.656	5.380	5.646	5.389
	(0.012)	(0.044)	(0.013)	(0.044)
Obs.	3224	3224	3224	3224

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to earnings. We regress log earnings of workers on a set of observable variables along with crude measures of unobserved skills. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill. Models [1]-[2] are identical to the preliminary analysis reported in the paper, while Models [3]-[4] include further the Big 5 personality traits measured at age 50 in the NCDS. Standard errors in parentheses.

Table D12: Cortisol: Correlation Matrix

Variable	Ext.	Int.	Cog.	Cortisol
Externalizing	1.000			
Internalizing	0.505	1.000		
Cognition	-0.346	-0.336	1.000	
Cortisol	0.050	0.012	-0.058	1.000

Notes: This table contains correlation coefficients between the crude measures of the unobserved skills and salivary cortisol measure collected at age 44 in the NCDS. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill. The cortisol measure is in logs.

Table D13: Cortisol: Educational Attainment

Variable	[1]	[2]	[3]	[4]
Externalizing	-0.114	-0.122	-0.113	-0.121
	(0.025)	(0.025)	(0.025)	(0.025)
Internalizing	-0.046	-0.035	-0.047	-0.036
	(0.023)	(0.023)	(0.023)	(0.023)
Cognition	0.784	0.677	0.782	0.676
	(0.023)	(0.024)	(0.023)	(0.024)
Cortisol			-0.004	-0.004
			(0.003)	(0.003)
Father Edu		0.251		0.252
		(0.041)		(0.041)
Mother Edu.		0.283		0.283
		(0.046)		(0.046)
No Info on Father Figure		0.253		0.253
		(0.102)		(0.102)
Father in Skilled Occupation		0.215		0.215
		(0.046)		(0.046)
Father in Managerial Occupation		0.395		0.394
		(0.059)		(0.059)
Working Mother		0.034		0.035
		(0.036)		(0.036)
Financial Difficulties		-0.256		-0.257
		(0.054)		(0.054)
Female	-0.316	-0.318	-0.320	-0.322
	(0.036)	(0.036)	(0.036)	(0.036)
Cutoff 1	-1.697	-1.444	-1.731	-1.481
	(0.039)	(0.059)	(0.048)	(0.065)
Cutoff 2	-0.990	-0.715	-1.025	-0.752
	(0.032)	(0.055)	(0.041)	(0.060)
Cutoff 3	0.226	0.544	0.191	0.509
	(0.029)	(0.055)	(0.038)	(0.060)
Cutoff 4	0.718	1.056	0.684	1.020
	(0.030)	(0.056)	(0.039)	(0.061)
Cutoff 5	1.422	1.789	1.388	1.754
	(0.032)	(0.059)	(0.041)	(0.064)
Obs.	3854	3854	3854	3854

Notes: This table contains parameter estimates from ordered probit models used to link socio-emotional and cognitive skills to educational attainment. We estimate the ordered probability of choosing 1 of 6 schooling levels on a set of observable variables along with crude measures of unobserved skills. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill. Models [1]-[2] are identical to the preliminary analysis reported in the paper, while Models [3]-[4] include further the salivary cortisol measure collected at age 44 in the NCDS. Standard errors in parentheses.

Table D14: Cortisol: Log Weekly Earnings

Variable	[1]	[2]	[3]	[4]
Externalizing	0.032	0.043	0.031	0.043
	(0.014)	(0.014)	(0.014)	(0.014)
Internalizing	-0.055	-0.049	-0.054	-0.049
	(0.014)	(0.013)	(0.014)	(0.013)
Cognition	0.202	0.091	0.203	0.091
	(0.013)	(0.014)	(0.013)	(0.014)
Cortisol			0.001	0.002
			(0.002)	(0.002)
CSE		0.057		0.056
		(0.051)		(0.051)
O Level		0.175		0.174
		(0.046)		(0.046)
A Level		0.325		0.324
		(0.050)		(0.050)
Higher Education		0.470		0.470
		(0.050)		(0.050)
Higher Degree		0.624		0.623
		(0.054)		(0.054)
London Dummy	0.226	0.209	0.227	0.209
	(0.025)	(0.024)	(0.025)	(0.024)
Financial Difficulties	-0.031	0.007	-0.030	0.008
	(0.032)	(0.031)	(0.032)	(0.032)
Female	-0.932	-0.881	-0.931	-0.880
	(0.023)	(0.023)	(0.023)	(0.023)
Constant	5.618	5.341	5.607	5.326
	(0.013)	(0.042)	(0.020)	(0.045)
Obs.	2702	2702	2702	2702

Notes: This table contains parameter estimates from OLS regressions used to link socio-emotional and cognitive skills to earnings. We regress log earnings of workers on a set of observable variables along with crude measures of unobserved skills. To construct the crude measures of the unobserved skills, we sum up all variables used to measure that skill in the preliminary analysis and then normalize each unobserved skill. Models [1]-[2] are identical to the preliminary analysis reported in the paper, while Models [3]-[4] include further the salivary cortisol measure collected at age 44 in the NCDS. Standard errors in parentheses.

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