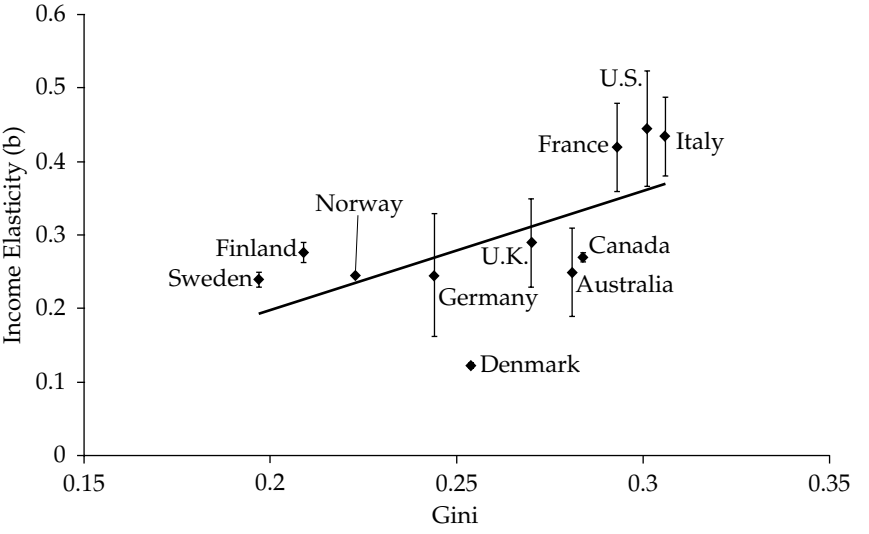
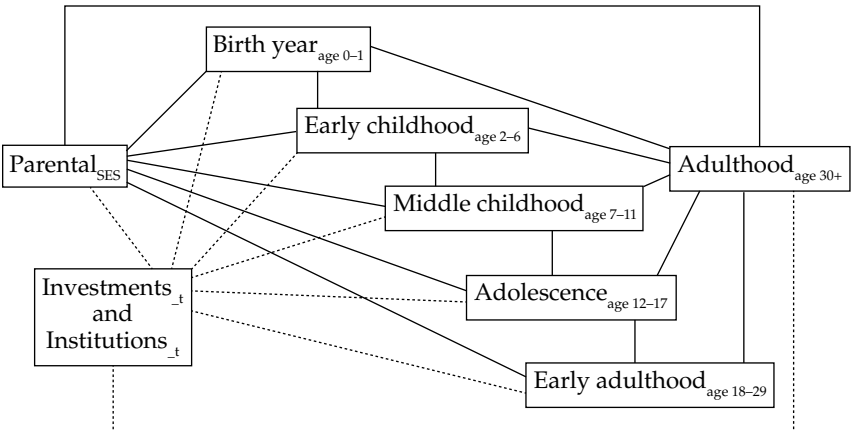
Figure 1.1 **Estimates of Intergenerational Income Elasticities for Fathers and Sons, Early 1980s**



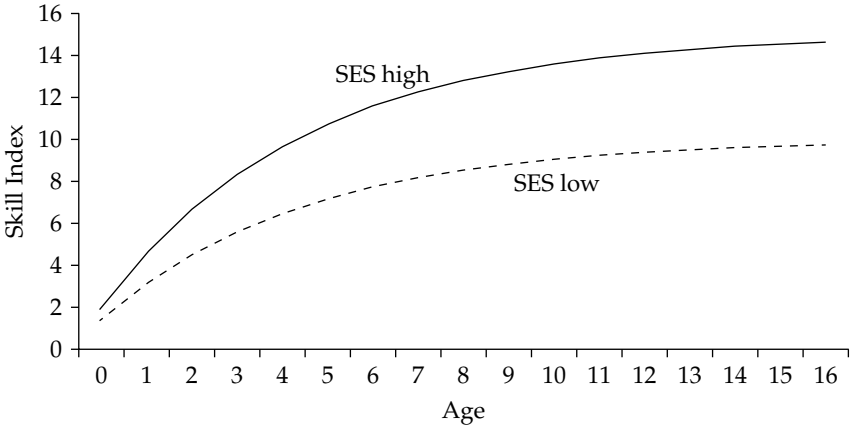
Source: Authors' calculations based on data from Bjorklund and Jäntti (2009, figure 20.1).

Figure 1.2 Intergenerational Transmission of Advantage by Life Stage



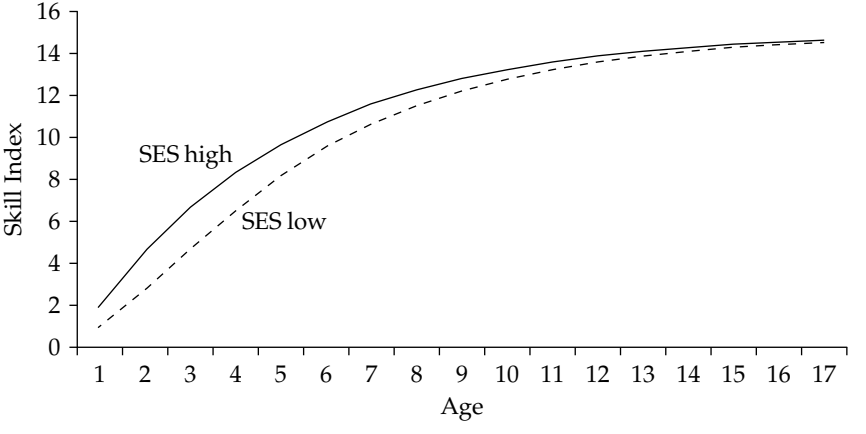
Source: Authors' figure.
Notes: Parental socioeconomic variables and measures: education, income, earnings, SES, occupation, wealth, employment; childhood and early adulthood measures: educational attainment, cognitive measures, socioemotional behavior, employment and labor market, health-physical; investments and institutions assumed to be different public and private investments and institutions contributing to children's development that vary by country; adulthood measures: child SES, income, education, employment, labor market attachment.

Figure 1.3 SES Skill Differentials, Fanning Out



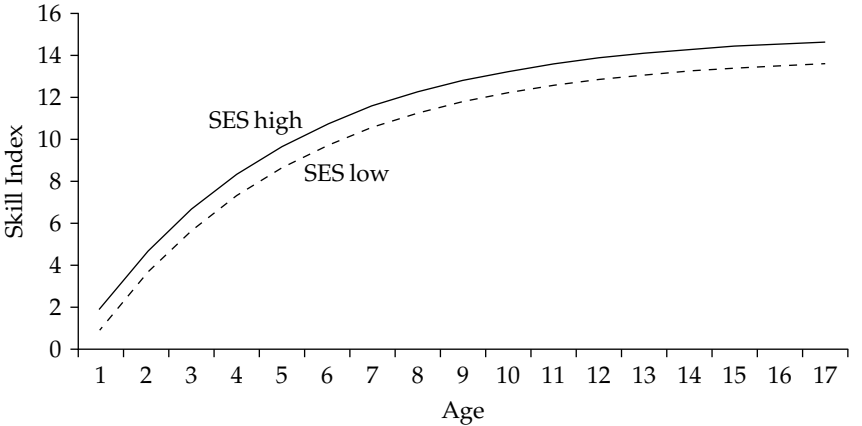
Source: Authors' model.

Figure 1.4 SES Skill Differentials, Convergence



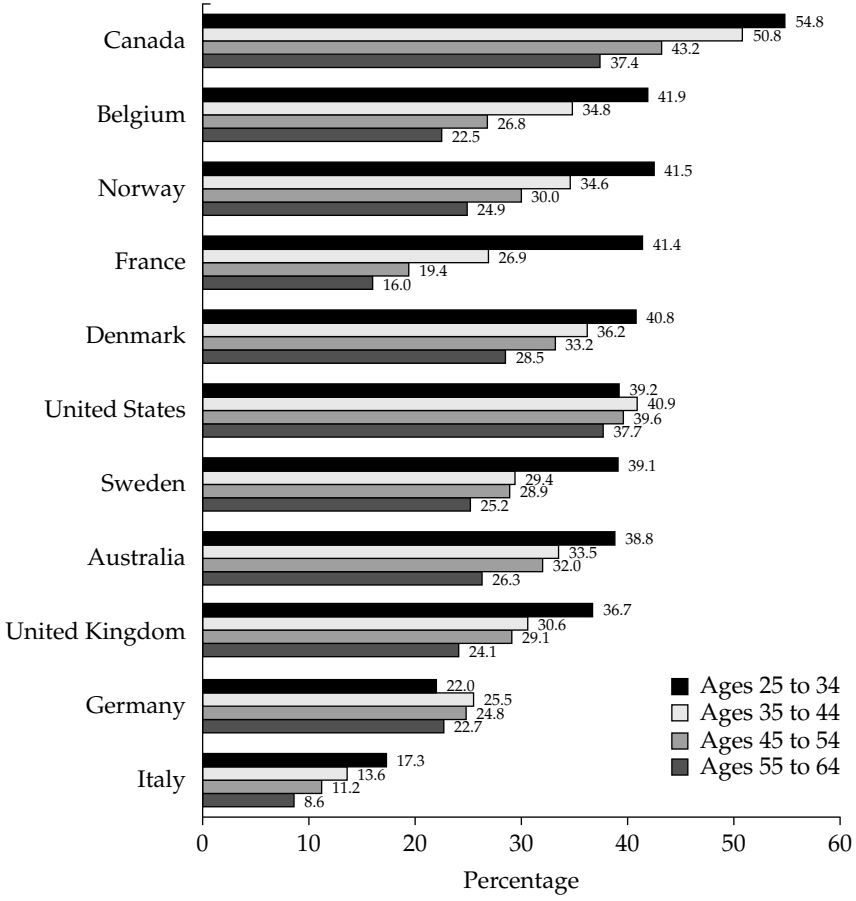
Source: Authors' model.

Figure 1.5 SES Skill Differentials, Constant Gap



Source: Authors' model.

Figure 1.6 Adults with Associate Degree or Higher



Source: Authors' calculations based on data from OECD (2008).

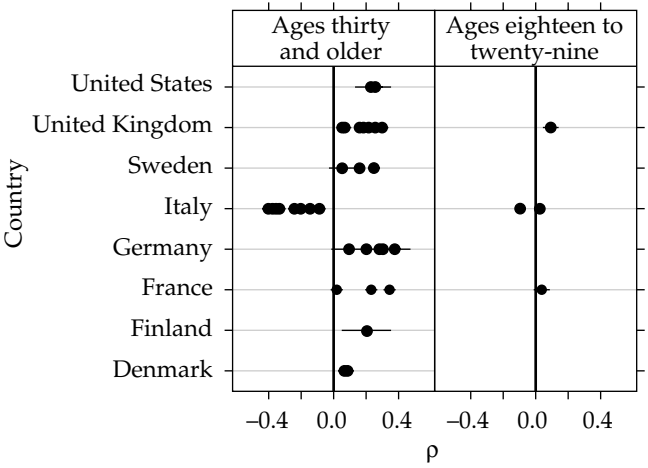
Table 1.1 Summary of Domains, Countries, and Life Stages Distributed by Projects

Projects, by chapter	3	4	5	6	7	8
Domains						
Cognitive	X	X		X	X	
Socioemotional-noncognitive	X	X	X	X		
Health-physical	X					
Education	X				X	X
Labor market	X				X	X
Countries						
Australia		X		X		
Canada		X				
Denmark						X
Finland						
France					X	
Germany			X			
Italy						
Sweden	X					
United Kingdom		X	X	X		
United States		X				
Life stage						
Birth year (0 to 1)						
Early childhood (2 to 6)		X	X	X	X	X
Middle childhood (7 to 11)				X	X	X
Adolescence (12 to 17)	X				X	X
Early adulthood (18 to 29)	X				X	
Adulthood (30+)	X				X	X
Parental SES						
Education	X	X	X	X	X	X
Income	X	X	X			X
Other					X	
Year P_{SES} measured	1962–1965	2000–2004	2000–2003	1999–2001	1978, 1980, 1989, 1993	1984–1991

Source: Authors' compilation.
Note: United Kingdom includes Scotland and England.

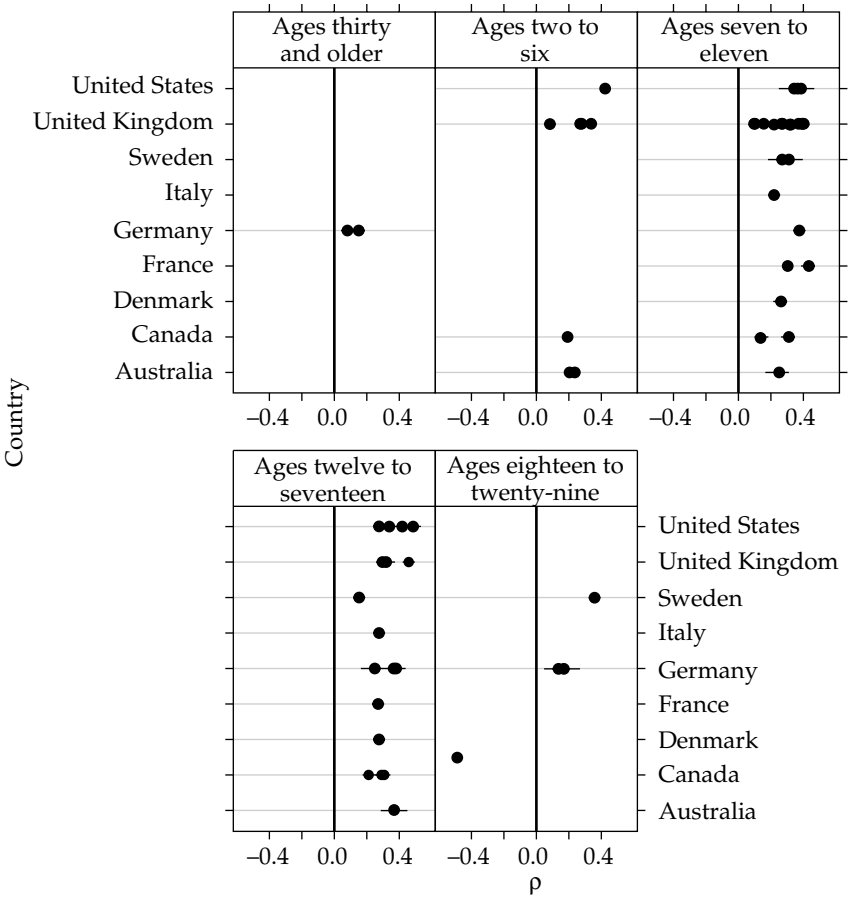
9	10	11	12	13	14	15	16	17	18
X	X	X	X	X	X	X	X	X	
X	X						X		
					X			X	
X				X	X	X			X
						X		X	X
			X						
		X	X		X				X
		X							X
X									
		X	X						
		X	X	X			X		
		X		X		X			
X		X					X	X	
X	X	X	X					X	
X	X	X	X		X				
					X			X	
	X								
X	X	X		X	X				
X	X	X	X	X	X		X	X	
			X	X	X	X	X		X
								X	X
X	X	X	X	X		X	X		X
	X				X	X		X	X
		X				X	X		X
1958, 1965, 1968, 1970, 1982	1991–1992, 1994–1996 1998	2001–2003, 2006	2000, 2004	1998–2007,	1994, 1997	2004	2005–2006	1970, 1973	1965–1976, 1982–1986

Figure 2.1 Correlations by Country by Age in Domain, Economic



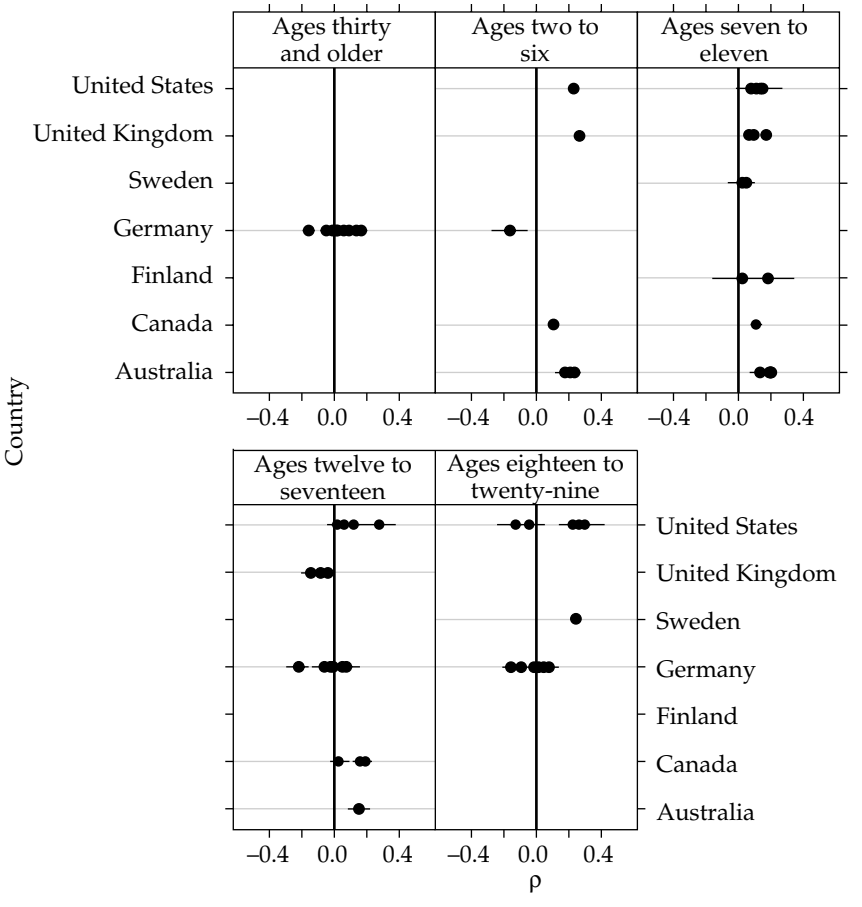
Source: Authors' calculations based on data from chapter authors.

Figure 2.2 Correlations by Country by Age in Domain, Cognitive



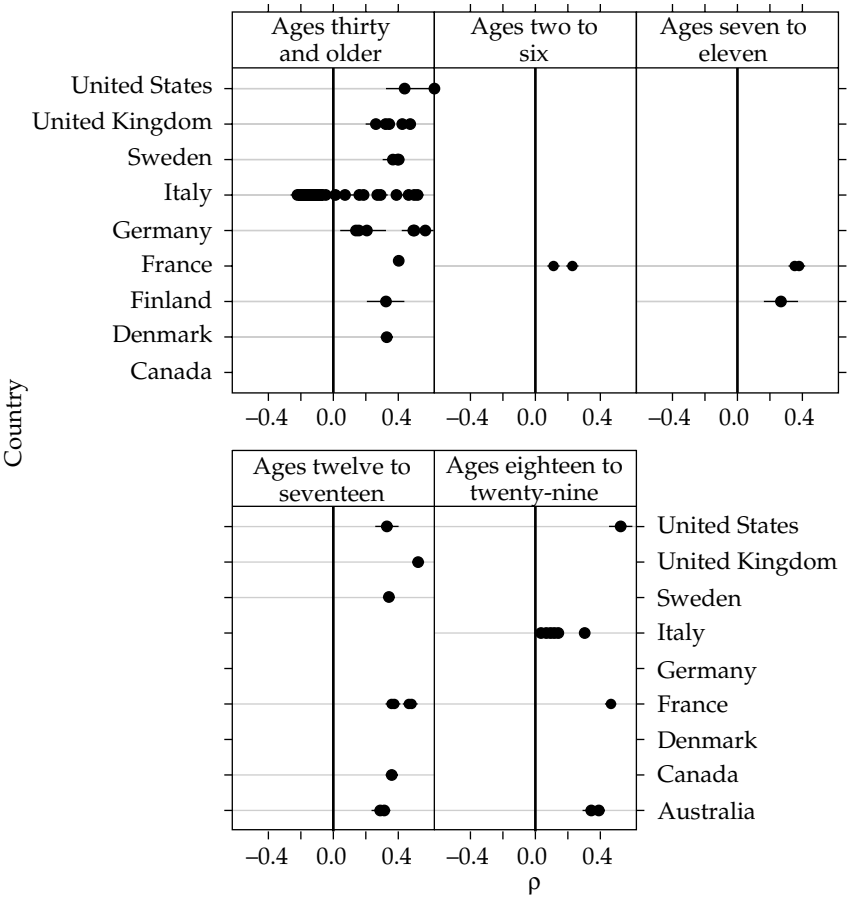
Source: Authors' calculations based on data from chapter authors.

Figure 2.3 Correlations by Country by Age in Domain, Socioemotional



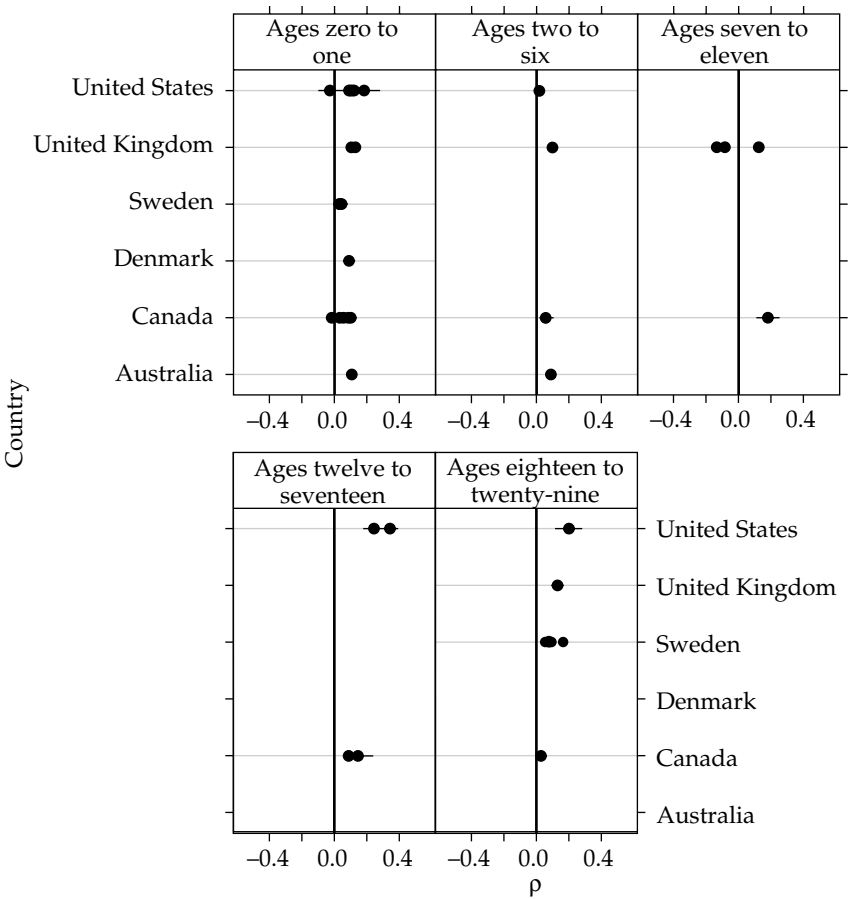
Source: Authors' calculations based on data from chapter authors.

Figure 2.4 Correlations by Country by Age in Domain, Education



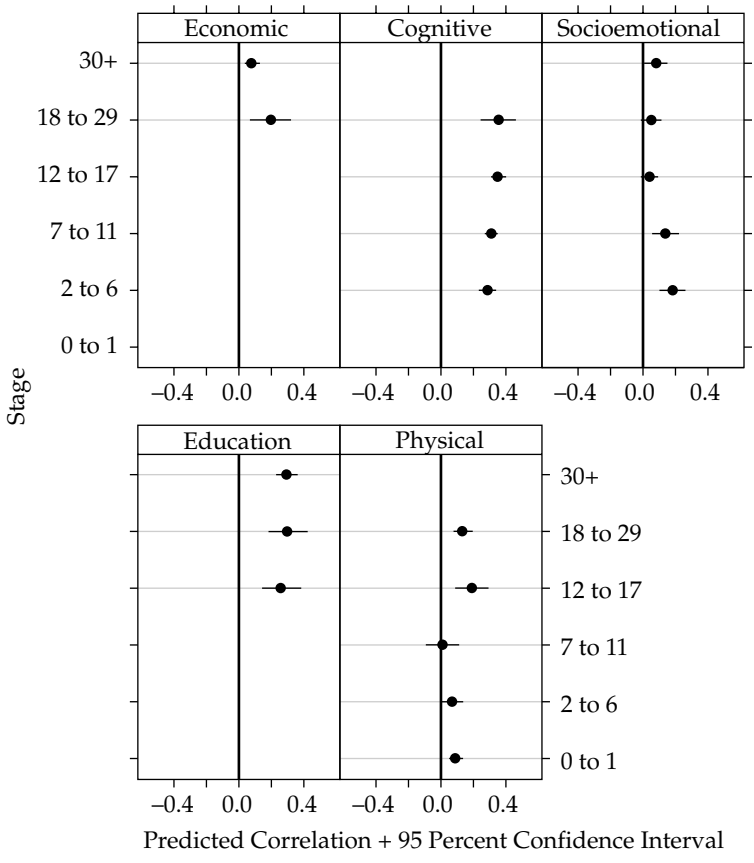
Source: Authors' calculations based on data from chapter authors.

Figure 2.5 Correlations by Country by Age in Domain, Physical



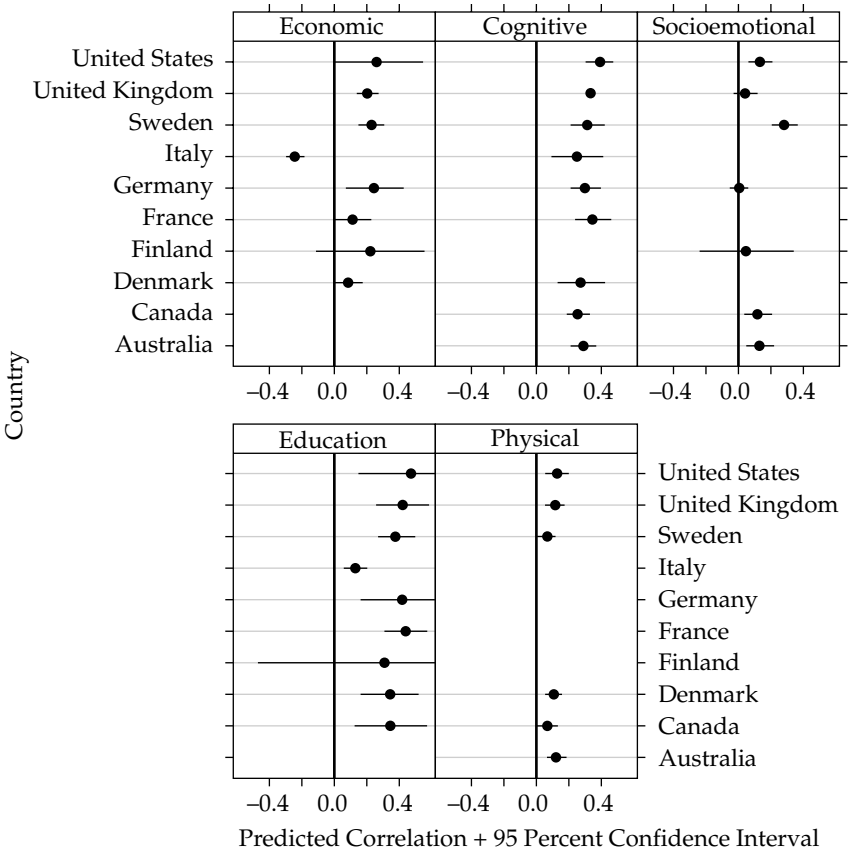
Source: Authors' calculations based on data from chapter authors.

Figure 2.6 **Estimated Socioeconomic Gradients Across Stages of Development, Fitted Correlations Against Stage**



Source: Authors' calculations based on data from chapter authors.

Figure 2.7 **Estimated Socioeconomic Gradients Across Countries, Fitted Correlations Against Country**



Source: Authors' calculations based on data from chapter authors.

Table 2.1 Variable Domains

Acronym	Description
EC	Economic outcomes (various incomes, labor market position)
ED	Educational attainment (graduation, grades, final attainment)
C	Cognitive (IQ and other test scores)
SE	Socioemotional behavior (or noncognitive)
P	Physical (includes health, height, birth weight, BMI)

Source: Authors' compilation; see figure 1.2 in chapter 1.

Table 2.2 Raw Data

A. Countries and Stages

	0 to 1	2 to 6	7 to 11	12 to 17	18 to 29	30+
Australia	1	6	6	2	0	0
Canada	5	3	4	12	3	0
Denmark	2	0	1	2	0	3
Finland	0	0	3	0	0	3
France	0	3	4	6	3	3
Germany	0	1	1	13	13	27
Italy	0	0	1	1	8	40
Sweden	2	0	5	2	8	6
United Kingdom	3	11	28	14	2	19
United States	6	10	19	14	10	4

B. Countries and Domains

	Economic	Cognitive	Socioemotional	Education	Physical
Australia	0	6	7	0	2
Canada	0	7	6	4	10
Denmark	2	2	0	2	2
Finland	2	0	2	2	0
France	4	3	0	12	0
Germany	6	12	29	8	0
Italy	10	2	0	38	0
Sweden	3	5	4	4	7
United Kingdom	15	29	19	6	8
United States	2	20	27	4	10

C. Domains and Stages

	0 to 1	2 to 6	7 to 11	12 to 17	18 to 29	30+
Economic	0	0	0	0	4	40
Cognitive	0	14	38	27	4	3
Socioemotional	0	13	27	24	20	10
Education	0	3	3	11	11	52
Physical	19	4	4	4	8	0

Source: Authors' compilation based on data from chapter authors.

Table 2.3 Ever Attended Postsecondary Education (Canada) or College (United States)

Canada (NLSCY)				United States (PSID)			
ISCED of Highest-Educated Parent	No	Yes	Row Total	ISCED of Highest-Educated Parent	No	Yes	Row Total
0–2 (low)	113	71	184	0–2 (low)	86	71	156
3–4 (med)	291	403	694	3–4 (med)	213	373	586
5b	186	296	482	5b	13	59	72
5a/6 (high)	105	450	555	5a/6 (high)	17	289	306
Column total	695	1219	1,914	Column total	329	791	1,120

Source: Authors' calculations based on data from chapter 14.

Table 2.4 Model Comparison

	Residual Degrees of Freedom	Residual Sum of Squares	Degrees of Freedom	Sum of Squares	*F*-statistic	Probability (>*F*)
1	301.00	569.10				
2	292.00	388.82	9.00	180.28	16.42	0.00
3	280.00	350.14	12.00	38.68	2.64	0.00
4	255.00	298.89	25.00	51.25	1.68	0.03
5	228.00	278.11	27.00	20.78	0.63	0.92

Source: Authors' calculations based on data from chapter authors (see tables 2.5 and 2.6).

Table 2.5 Coefficient Estimates by Domain

		Economic	Cognitive	Educational	Physical	Socioemotional
(Intercept)		0.248	0.353	0.488	0.113	0.136
		(0.134)	(0.044)	(0.164)	(0.034)	(0.049)
Country	Australia		–0.102		–0.002	–0.004
			(0.050)		(0.041)	(0.050)
	Canada		–0.136	–0.126	–0.058	–0.013
			(0.049)	(0.191)	(0.043)	(0.050)
	Denmark	–0.171	–0.119	–0.131	–0.019	
		(0.139)	(0.081)	(0.182)	(0.039)	
	Finland	–0.041		–0.161		–0.086
		(0.209)		(0.422)		(0.146)
	France	–0.149	–0.045	–0.034		
		(0.145)	(0.066)	(0.173)		
	Germany	–0.019	–0.095	–0.055		–0.128
		(0.158)	(0.058)	(0.205)		(0.044)
	Italy	–0.505	–0.142	–0.346		
		(0.137)	(0.084)	(0.165)		
	Sweden	–0.036	–0.075	–0.096	–0.061	0.149
		(0.138)	(0.063)	(0.170)	(0.042)	(0.048)
	United Kingdom	–0.059	–0.057	–0.057	–0.010	–0.089
		(0.136)	(0.042)	(0.179)	(0.044)	(0.048)

(Table continues on p. 46.)

Table 2.5 *Continued*

		Economic	Cognitive	Educational	Physical	Socioemotional
Stage	2 to 6			–0.303	–0.024	0.095
				(0.129)	(0.032)	(0.056)
	7 to 11		0.021	–0.071	–0.084	0.054
			(0.028)	(0.142)	(0.049)	(0.057)
	12 to 17		0.066	–0.026	0.100	–0.048
			(0.031)	(0.068)	(0.053)	(0.044)
	18 to 29	0.118	0.069	0.007	0.043	–0.040
		(0.059)	(0.061)	(0.065)	(0.030)	(0.038)
F-tests	Stage	1.157[1]	1.927[3]	2.569[4]	1.892[4]	13.640[4]
		(0.290)	(0.135)	(0.047)	(0.140)	(0.000)
	Country	23.721[7]	1.455[8]	4.211[8]	0.906[5]	9.251[6]
		(0.000)	(0.194)	(0.000)	(0.491)	(0.000)
N		42	70	72	38	72
k		9	12	13	10	11
σ		0.865	0.737	1.63	0.625	0.682
Adj R^2		0.795	0.0852	0.31	0.0773	0.585

Source: Authors' calculations based on data from chapter authors.

Table 2.6 Hypothesis Tests that Groups of Countries Have Zero Coefficients, *p*-Values

	Economic	Cognitive	Educational	Physical	Socioemotional
Anglophone	0.67	0.03	0.78	0.49	0.15
Nordic	0.07	0.26	0.91	0.30	0.01
European	0.00	0.25	0.00	0.00	0.01

Source: Authors' calculations based on data from chapter authors.
Note: Groups of countries are Anglophone: Australia, Canada, United Kingdom; Nordic: Denmark, Finland, Sweden; European: France, Germany, Italy.

Table 3.1 Correlations, Mediating Variables and Origin and Destination Characteristics

Origin		Mediators	Destination	
Correlation with Father's . . .		Dimension of Son's . . .	Correlation with Son's . . .	
Education	Income	Cognitive Ability	Education	Income
0.29	0.27	Logic-inductive ability	0.49	0.35
0.32	0.27	Verbal comprehension	0.50	0.32
0.25	0.21	Spatial ability	0.40	0.27
0.26	0.22	Technical understanding	0.40	0.29
0.33	0.28	Cognitive ability, total	0.53	0.36
		Personality traits		
0.21	0.20	Social maturity	0.29	0.30
0.09	0.11	Intensity	0.17	0.21
0.18	0.17	Psychological energy	0.28	0.28
0.18	0.18	Emotional stability	0.26	0.29
0.20	0.21	Overall psychological fitness	0.31	0.34
0.21	0.21	Leadership	0.31	0.34
		Physical characteristics		
0.09	0.10	Height	0.12	0.12
–0.07	–0.06	BMI-deviation	–0.09	–0.09
0.14	0.14	Physical ability	0.23	0.21

Source: Authors' calculations based on STAR register database (not publicly available).
Note: N=156,837.

Table 3.2 OLS Regression, Son's Income on Father's Income and Mediating Variables

	1	2	3	4	5	6	7	8	9	10
Father's income	0.312	0.224	0.249	0.283	0.197	0.160	0.132	0.127	0.114	0.073
Father's education								–0.003	(–0.002)	0.009
Father's occupational prestige								0.008	0.007	–0.003
Father's class								yes	yes	yes
Father's municipality									yes	yes
Logic-inductive		0.178			0.133	0.099	0.090	0.090	0.090	0.051
Verbal		0.068			0.041	–0.008	(–0.001)	(0.000)	(0.000)	(0.002)
Spatial		0.035			0.030	0.009	(–0.003)	(–0.003)	(–0.001)	(–0.004)
Technical		0.070			0.050	0.045	0.032	0.032	0.035	0.018
Social maturity			0.117		0.069	0.061	0.066	0.065	0.068	0.039
Intensity			0.040		0.026	0.034	0.031	0.031	0.031	0.017
Mental energy			0.096		0.062	0.050	0.051	0.051	0.052	0.041
Emotional stability			0.103		0.076	0.072	0.062	0.061	0.060	0.040
BMI deviation				–0.053	–0.027	–0.023	–0.022	–0.022	–0.020	–0.010
Height				0.054	0.035	0.034	0.031	0.030	0.028	0.019
Physical capacity				0.145	0.039	0.020	0.021	0.021	0.025	0.021
Son's education						0.216	—	—	—	
Son's detailed education							yes	yes	yes	yes
Son's occupation										yes
R^2	0.10	0.18	0.18	0.13	0.22	0.25	0.31	0.31	0.32	0.52

Source: Authors' calculations based on STAR register database (not publicly available).
Note: Because of the large size of the data set, the precision in the regression estimates is very high and showing standard errors is not necessary. The estimates within parentheses are the only ones with a *T*-value less than 1.96.
Beta coefficients. N=156,837. Model 10: N=102,812.

Table 3.3 OLS Regression, Son's Education on Father's Education and Mediating Variables

	1	2	3	4	5	6	7
Father's education	0.379	0.220	0.320	0.348	0.205	0.158	0.140
Father's income						0.091	0.077
Father's class							yes
Father's occupational prestige							0.021
Logic-inductive		0.194			0.164	0.159	0.158
Verbal		0.223			0.207	0.204	0.202
Spatial		0.091			0.088	0.088	0.088
Technical		0.030			0.021	0.021	0.021
Social maturity			0.123		0.032	0.030	0.029
Intensity			–0.006		–0.027	–0.026	–0.025
Mental energy			0.120		0.057	0.056	0.055
Emotional stability			0.074		0.025	0.022	0.022
BMI deviation				–0.043	–0.018	–0.017	–0.017
Height				0.042	(0.004)	(0.002)	(0.002)
Physical capacity				0.170	0.085	0.083	0.083
R^2	0.14	0.34	0.21	0.18	0.36	0.36	0.36

Source: Authors' calculations based on STAR register database (not publicly available).
Note: Because of the large size of the data set, the precision in the regression estimates are very high and showing standard errors is not necessary. All estimates but those in parentheses are significant at conventional levels.
Beta coefficients. N=179,696.

Table 3.4 OLS Regression, Son's Income on Father's Income and Mediating Variables, Including Leadership Capacity

	1	2	3	4	5	6	7	8	9	10
Father's income	0.288	0.235	0.241	0.266	0.200	0.192	0.130	0.125	0.111	0.072
Father's education								(0.002)	(–0.004)	0.009
Fathers class								yes	yes	yes
Father's occupational prestige								0.006	0.007	(–0.001)
Father's municipality									yes	yes
Logic-inductive		0.153			0.122	0.116	0.071	0.071	0.072	0.043
Verbal		0.074			0.059	0.051	0.007	(0.006)	0.007	0.011
Spatial		0.022			0.022	0.018	(–0.004)	(–0.004)	–0.007	(–0.005)
Technical		0.058			0.043	0.041	0.020	0.020	0.022	0.014
Social maturity			0.096		0.073	0.020	0.028	0.027	0.032	0.021
Intensity			0.041		0.038	(0.000)	(0.005)	(0.006)	(0.006)	(0.004)
Mental energy			0.093		0.067	0.034	0.031	0.031	0.034	0.032
Emotional stability			0.099		0.079	0.015	0.013	0.013	0.013	0.012
BMI deviation				–0.046	–0.031	–0.028	–0.022	–0.022	–0.021	–0.010
Height				0.046	0.038	0.037	0.031	0.031	0.028	0.020
Physical capacity				0.132	0.038	0.034	0.016	0.016	0.020	0.016
Leadership capacity						0.178	0.136	0.135	0.129	0.073
Son's detailed education							yes	yes	yes	yes
Son's occupation										yes
R^2	0.08	0.14	0.15	0.11	0.19	0.20	0.29	0.29	0.30	0.50

Source: Authors' calculations based on STAR register database (not publicly available).
Note: Because of the large size of the data set, the precision in the regression estimates is very high and showing standard errors is not necessary. The estimates within parentheses are the only ones with a *T*-value less than 1.96.
Only conscripts with leadership rating. Beta coefficients. N=105,031. Model 10: N=70,461.

Table 3.5 OLS Regression, Son's Education on Father's Education and Mediating Variables, Including GPA

	Model 1	Model 2	Model 3	Model 4	Model 5
Father's education	0.370	0.187	0.156	0.135	0.121
Father's income				0.046	0.037
Father's class					yes
Logic-inductive		0.177	0.069	0.068	0.068
Verbal		0.229	0.137	0.136	0.136
Spatial		0.064	0.027	0.027	0.027
Technical		0.030	0.017	0.017	0.017
Social maturity		0.047	0.021	0.021	0.020
Intensity		–0.025	–0.025	–0.025	–0.025
Mental energy		0.059	0.017	0.017	0.017
Emotional stability		0.011	0.003	0.001	0.001
BMI deviation		–0.005	0.005	0.004	0.004
Height		0.022	0.016	0.015	0.015
Physical capacity		0.082	0.045	0.044	0.044
GPA			0.372	0.369	0.368
R^2	0.13	0.36	0.42	0.42	0.43

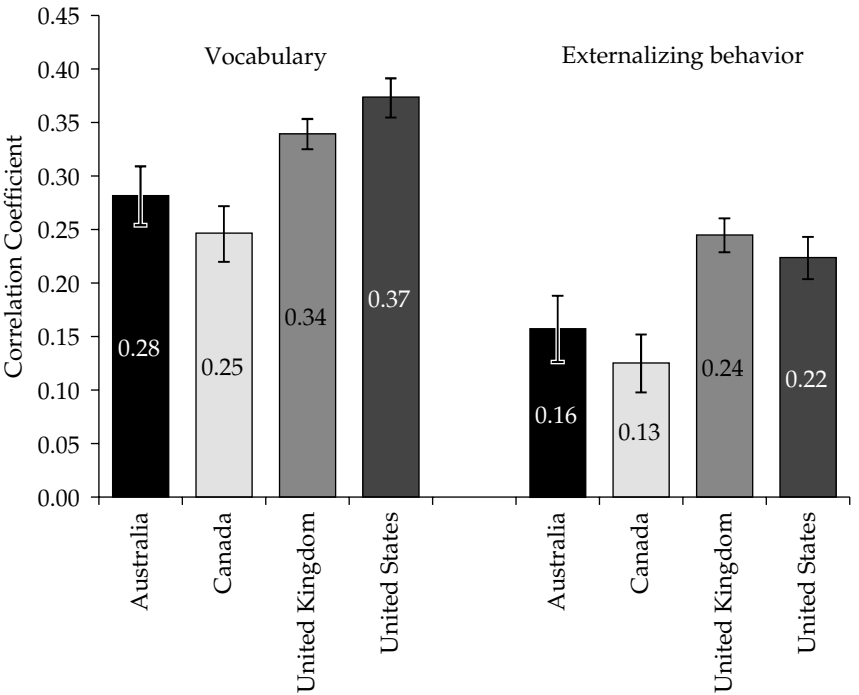
Source: Authors' calculations based on STAR register database (not publicly available).
Note: Because of the large size of the data set, the precision in the regression estimates is very high and showing standard errors is not necessary. The estimate within parentheses is the only one with a *T*-value less than 1.96.
Only conscripts born 1972. Beta coefficients. N=35,377.

Table 3.6 Decomposition of Intergenerational Income, and Educational Correlations

	Full Sample, 1962–1965			Born 1972		Excluding Low Cognitive Ability	
	Income		Education	Education		Income	
Mediators	Model 1	Model 2		Model 1	Model 2	Model 1	Model 2
Cognitive							
Logic-inductive	0.11	0.08	0.13	0.14	0.06	0.05	0.05
Verbal	0.04	0.00	0.17	0.20	0.12	0.01	0.00
Spatial	0.02	0.00	0.06	0.04	0.02	0.00	0.00
Technical	0.03	0.02	0.01	0.02	0.01	0.01	0.01
Cognitive ability total	0.20	0.10	0.37	0.40	0.20	0.06	0.06
Personality							
Social maturity	0.04	0.04	0.02	0.03	0.01	0.04	0.02
Intensity	0.01	0.01	–0.01	–0.01	–0.01	0.01	0.00
Mental energy	0.03	0.03	0.03	0.03	0.01	0.03	0.01
Emotional stability	0.04	0.04	0.01	0.01	0.00	0.03	0.01
Personality total	0.13	0.12	0.05	0.06	0.02	0.11	0.04
Physical							
BMI deviation	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Height	0.01	0.01	0.00	0.00	0.00	0.01	0.01
Physical capacity	0.02	0.01	0.03	0.04	0.02	0.01	0.01
Physical total	0.04	0.02	0.04	0.04	0.02	0.02	0.02
Son's education		0.33				0.34	0.33
Grade point average					0.34		
Leadership capacity							0.10
Remaining	0.63	0.43	0.54	0.50	0.42	0.47	0.45
Number of cases	156,837		179,696	35,377		105,031	

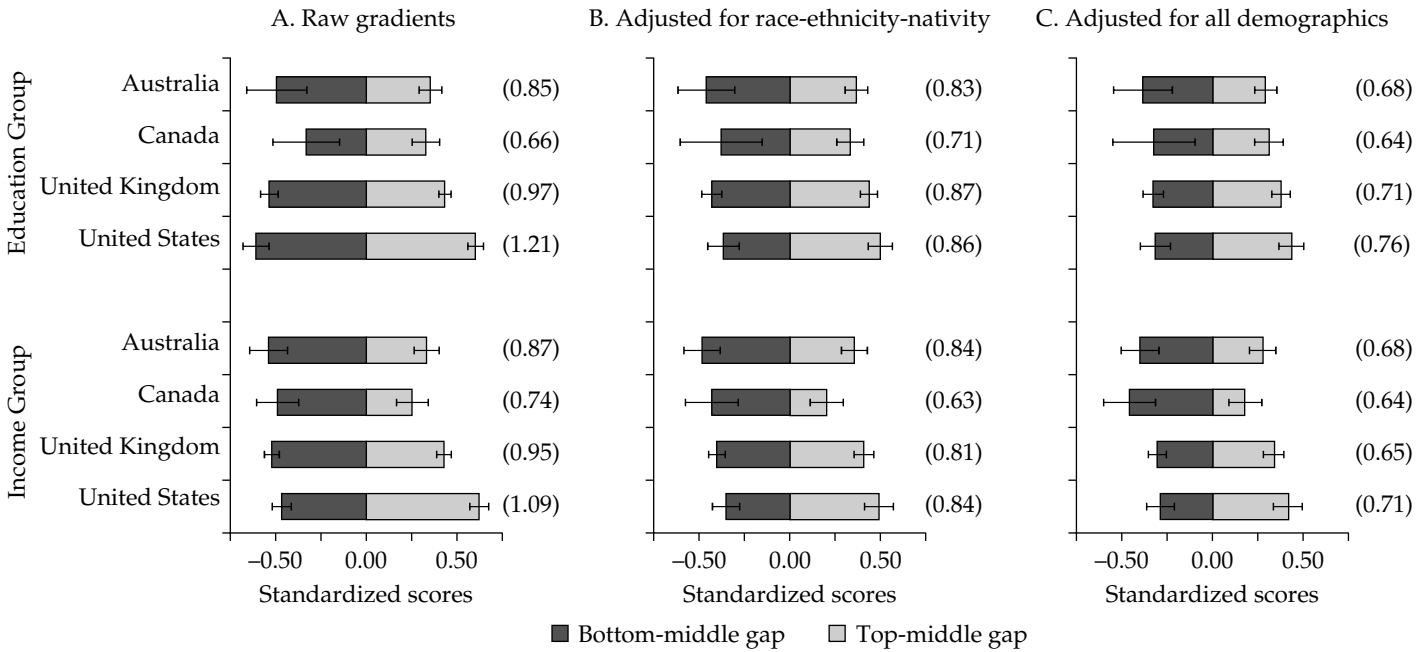
Source: Authors' compilation based on STAR register database (not publicly available).
Note: The total contributions of the cognitive ability, personality, and physical variables are the sums of the contributions of their constituent dimensions, though in the table there are some rounding errors.

Figure 4.1 Correlation of Household Income with Key Child Outcomes



Source: Authors' calculations using data from Australian Institute of Family Studies (2009), Statistics Canada (2006b), University of London, Institute of Education, Centre for Longitudinal Studies (2006), and U.S. Department of Education, National Center for Education Statistics (2009).
Note: Range plots show 95 percent confidence intervals.

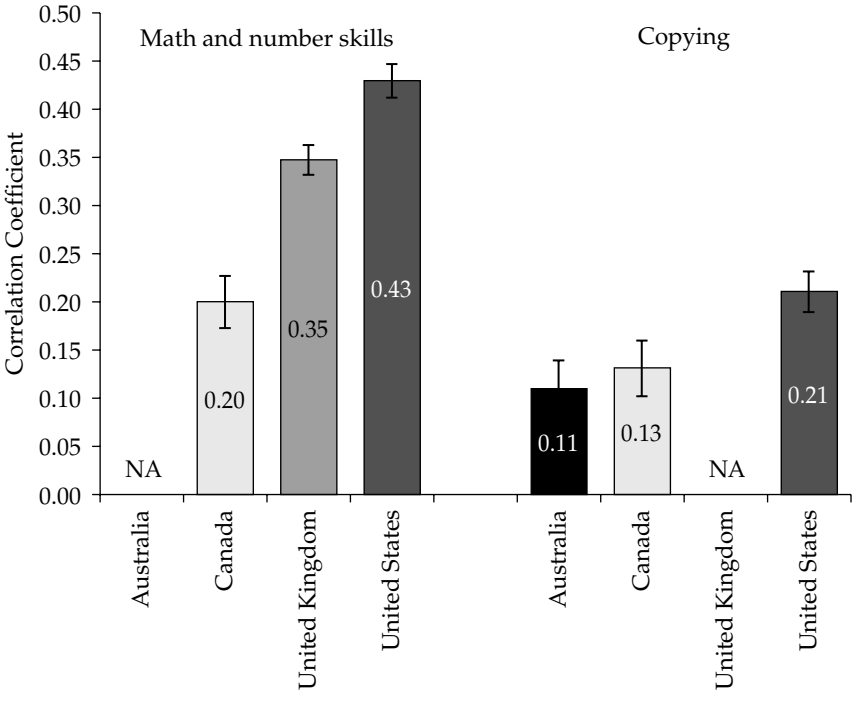
Figure 4.2 Disparities in Vocabulary Outcomes



Source: Authors' calculations using data from Australian Institute of Family Studies (2009), Statistics Canada (2006b), University of London, Institute of Education, Centre for Longitudinal Studies (2006), and U.S. Department of Education, National Center for Education Statistics (2009).

Note: Numbers in parentheses are the total gap between the top and bottom groups (the sum of the darker and lighter bars). Range plots show 95 percent confidence intervals. The control variables introduced in panels B and C are listed in table 4.5.

Figure 4.3 Correlation of Household Income with Other Cognitive Outcomes

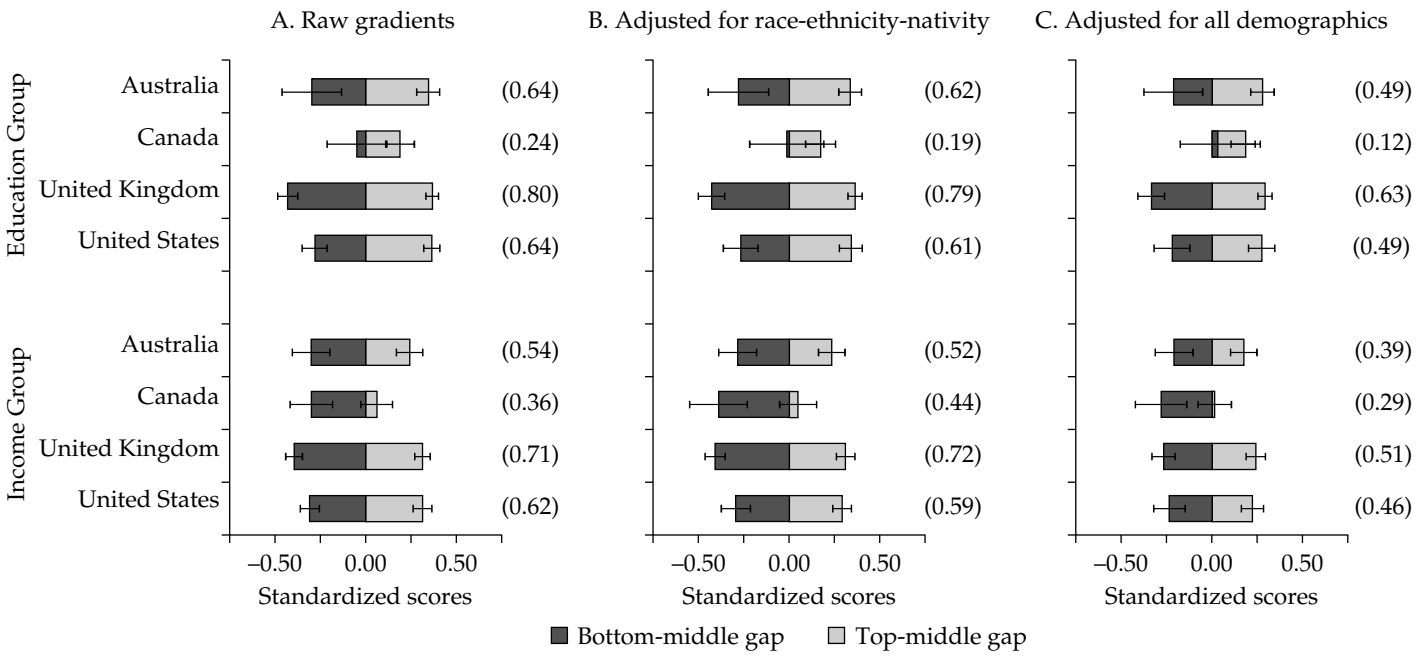


Source: Authors' calculations using data from Australian Institute of Family Studies (2009), Statistics Canada (2006b), University of London, Institute of Education, Centre for Longitudinal Studies (2006), and U.S. Department of Education, National Center for Education Statistics (2009).

Notes: Math and number skills were assessed using the Number Knowledge assessment in Canada and the ECLS-B Math assessment in the United States. The U.K. measure is the sum of four of the six Bracken School Readiness Assessment (BRSA) subscales—Numbers, Sizes, Shapes, and Comparisons—which were administered in wave 2 only when the MCS children were age three. Copying was assessed via the Copying subscale of the Who Am I assessment in Canada and Australia, and via the ECLS-B copying forms task in the United States. See the online appendix for further details.

Range plots show 95 percent confident intervals. NA indicates the measure is not available for that country.

Figure 4.4 Disparities in Externalizing Behavior Problems



Source: Authors' calculations using data from Australian Institute of Family Studies (2009), Statistics Canada (2006b), University of London, Institute of Education, Centre for Longitudinal Studies (2006), and U.S. Department of Education, National Center for Education Statistics (2009).
Note: Numbers in parentheses are the total gap between the top and bottom groups (the sum of the darker and lighter bars).

Table 4.1 Indicators of Economic and Policy Inputs

	Australia	Canada	United Kingdom	United States
Inequality (Gini coefficient, 2003–2004)	0.31	0.32	0.35	0.37
Child poverty (relative, 2005)	11.8%	15.1%	10.1%	20.6%
Per capita social expenditure on children aged under six as proportion of median working-age income				
Cash and tax breaks	9.9	NA	8.9	4.3
Child care, education, and other	8.8	NA	12.7	6.4
Public expenditure as share of total health expenditure (2005)	66.9	70.3	81.9	44.4

Source: Author's compilation based on data from Luxembourg Income Study (2010) and OECD (2009, 2011).

Table 4.2 Overview of Datasets

	Australia	Canada	United Kingdom	United States
Survey name	Longitudinal Study of Australian Children Birth Cohort (LSAC)	National Longitudinal Study of Children and Youth (NLSCY)	Millennium Cohort Study (MCS)	Early Childhood Longitudinal Study Birth Cohort (ECLS-B)
Year of birth (range)	Mar. 2003 to Feb. 2004	Jan. 2000 to Dec. 2002	Sept. 2000 to Jan. 2002	Jan. 2001 to Dec. 2001
Exclusions from eligible birth cohort	Nonpermanent residents; children with the same name as deceased children; only one child per household	Children living on reserves or Crown Lands, residents of institutions, full-time members of the Canadian armed forces, and residents of some remote regions	Families ineligible for child benefit	Children born to mothers less than 15 years old; children adopted before 9 months old
Sampling frame	Medicare Australia database, clustered by postal area	Labour Force Survey using the 1994 and 2004 design	Child benefit records, clustered by electoral ward (oversamples: 3 smaller countries in U.K.; areas >30% black/Asian; areas with Child Poverty Index >75th percentile)	Registered births in the vital statistics system (oversamples: twins; low and very low birth weight babies; American Indians; Chinese; other Asian/Pacific Islanders)

Number children ever participated	5,107	8,522	19,517	10,700*
Wave 1 response rate	57% (33% refusal, 11% noncontact)	74.9%	76.7%	71.6%
Number children in wave 3	4,386	7,147	15,460	8,950*
Percentage ever participated in wave 3	85.9%	83.9%	79.2%	83.7%
Mean age in months at wave 3	57.7	58.6	62.1	53.0
Standard deviation age in months at wave 3	2.9	6.7	3.0	4.2

Source: Authors' compilation based on data from Australian Institute of Family Studies (2010), Statistics Canada (2006a), Centre for Longitudinal Studies (2010), and National Center for Education Statistics (2009).
*ECLS-B frequencies rounded to the nearest fifty in accordance with NCES reporting rules.

Table 4.3 Externalizing Behavior Items

Australia and United Kingdom	Canada	United States
Conduct problems		
Often has temper tantrums	When somebody accidentally hurts him, he reacts with anger and fighting	Has temper outbursts or tantrums
Fights with or bullies other children	Gets into many fights	Is physically aggressive (for example, hits, kicks, or pushes)
Can be spiteful to others	Physically attacks people	Bothers and annoys other children
Generally obedient	Bullies or is mean to others	Destroys things that belong to others
Often argumentative with adults	Kicks, bites, or hits other children	Gets angry easily
Hyperactivity or inattention		
Can stop and think before acting	Is impulsive, acts without thinking	Acts impulsively without thinking (for example, runs across the street without looking)
Sees tasks through until the end	Cannot settle on anything for more than a few moments	Keeps working until finished
Easily distracted	Is easily distracted, has trouble sticking to any activity	Has difficulty concentrating or staying on task
Restless, overactive, cannot stay still for long	Is inattentive	Pays attention well
Constantly fidgeting	Can't concentrate, can't pay attention for long	Overly active, unable to sit still

Source: Authors' compilation based on data from Australian Institute of Family Studies (2010), Statistics Canada (2006a), Centre for Longitudinal Studies (2010), and National Center for Education Statistics (2009).

Notes:

Australia and the United Kingdom:

Sources: Strengths and Difficulties Questionnaire (SDQ) administered in full.

Question: What is <child> like? Please give your answers on the basis of <child>'s behavior over the last six months.

Responses (scoring): not true (0); somewhat true (1); certainly true (2). Scoring reversed for positively phrased items.

Canada:

Sources: Items taken from multiple instruments, including Achenbach's Child Behavior Checklist (CBCL), the Ontario Child Health Study (OCHS), and the Montreal Longitudinal Survey.

Question: How often would you say that this child . . . ?

Responses (scoring): never or not true (0); sometimes or somewhat true (1); often or very true (2).

United States:

Sources: Items taken from multiple instruments, including Preschool and Kindergarten Behavior Scales—Second Edition (PKBS-2), Social Rating Scale (SRS), and ECLS-K behavioural assessment

Question: How often in the last three months have the following things occurred . . . ?

Responses (scoring): never (0); rarely (0); sometimes (1); often (2); very often (2). Scoring reversed for positively phrased items.

Table 4.4 Descriptive Statistics for Key Raw Outcome Variables

	Vocabulary				Externalizing Behavior			
	Australia	Canada	United Kingdom	United States	Australia	Canada	United Kingdom	United States
Observations	4266	6234	15168	8450*	3823	6758	13474	8900*
Mean	64.61	57.94	108.40	8.50	6.64	3.93	4.64	5.62
Standard deviation (SD)	6.38	20.00	15.88	1.99	3.33	3.14	3.36	3.86
Minimum	34.19	NA	10	4.62	0	0	0	0
Maximum	84.78	NA	170	13.63	20	20	20	20
Mean monthly increment	0.39	1.35	0.85	0.09	0.03	–0.03	–0.05	–0.02
Monthly increment/SD	0.06	0.07	0.05	0.05	0.01	–0.01	–0.02	–0.01

Source: Authors' calculations using data from Australian Institute of Family Studies (2009), Statistics Canada (2006b), University of London, Institute of Education, Centre for Longitudinal Studies (2006), and U.S. Department of Education, National Center for Education Statistics (2009).

Notes: Higher vocabulary scores denote more favorable outcomes here and throughout our analysis. Higher externalizing behavior scores denote more adverse outcomes in table 4.4 only—the sign of the standardized behavior measures are reversed in all following tables for consistency with the cognitive measures. The minimum and maximum of the Canadian vocabulary are not released by Statistics Canada. The mean monthly increment is the linear regression slope of the outcome against age in months at assessment. All statistics calculated using survey weights.

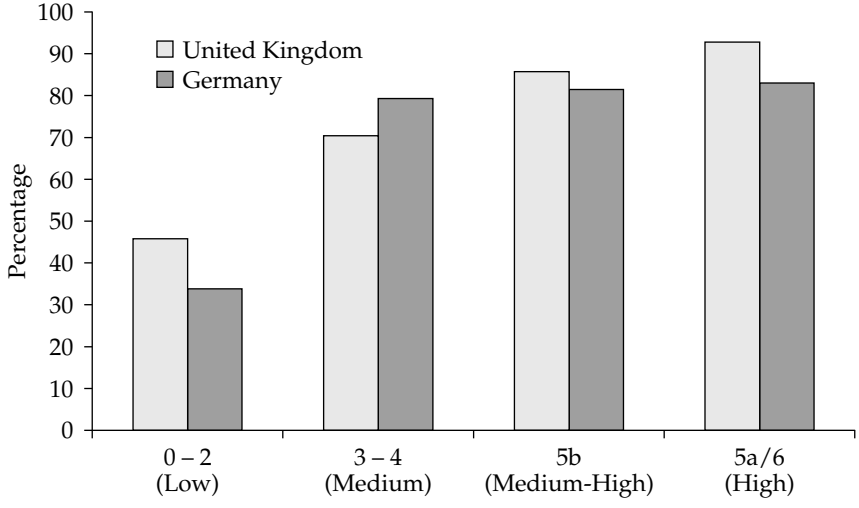
*ECLS-B frequencies rounded to the nearest fifty in accordance with NCES reporting rules.

Table 4.5 Average Characteristics of Families with Four- to Five-Year-Old Children

	Australia (N = 4,386)	Canada (N = 6812)	United Kingdom (N = 15,460)	United States (N = 8,500)*
Low education (ISCED 2)	8.2%	6.2%	12.2%	10.4%
Middle education (ISCED 3/5B)	53.5%	39.6%	52.9%	56.6%
High education (ISCED 5A/6)	38.4%	54.2%	34.1%	33.0%
Mean household income (SD)	25,569 (15,375)	29,539 (17,983)	27,195 (19,447)	28,534 (27,604)
Single-parent household at wave 3	15.0%	14.4%	19.7%	21.8%
Mother younger than twenty at birth	4.0%	3.4%	7.6%	11.0%
Mother older than thirty at birth	50.0%	42.6%	40.8%	31.7%
Number of people under age eighteen in household at wave 3	2.51 (1.05)	2.25 (0.98)	2.40 (1.05)	2.44 (1.14)
Foreign-born parent	33.0%	31.5%	13.0%	23.4%
White (non-Hispanic for United States)	—	81.0%	86.7%	54.0%
Black (non-Hispanic for United States)	—	3.3%	2.8%	13.8%
Hispanic	—	—	—	25.1%
Asian	—	—	—	2.6%
South Asian	—	4.9%	—	—
Pakistani or Bangladeshi	—	—	4.2%	—
Indian	—	—	1.8%	—
Chinese	—	2.4%	—	—
Indigenous (Australia)–Aboriginals (Canada)	4.9%	1.9%	—	—
Mixed	—	—	3.3%	—
Race-ethnicity not otherwise coded	—	6.6%	1.2%	4.5%

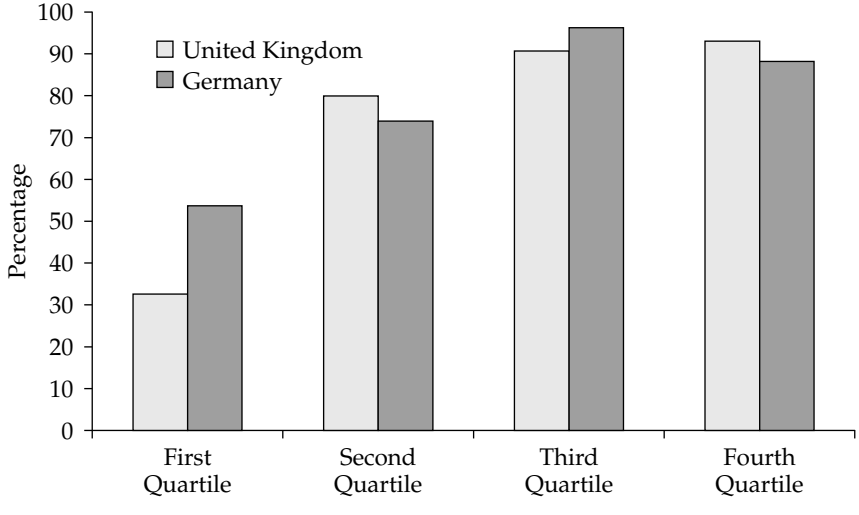
Source: Authors' calculations using data from Australian Institute of Family Studies (2009), Statistics Canada (2006b), University of London, Institute of Education, Centre for Longitudinal Studies (2006), and U.S. Department of Education, National Center for Education Statistics (2009).
*ECLS-B frequencies rounded to the nearest fifty in accordance with NCES reporting rules.

Figure 5.1 Percentage Always Partnered by Parents' Highest Education



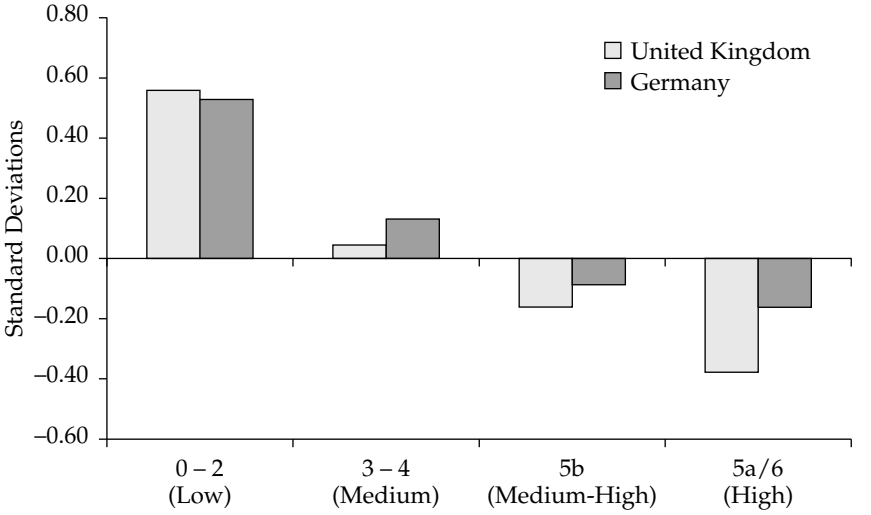
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Figure 5.2 Percentage Always Partnered by Parents' Household Income Quartile



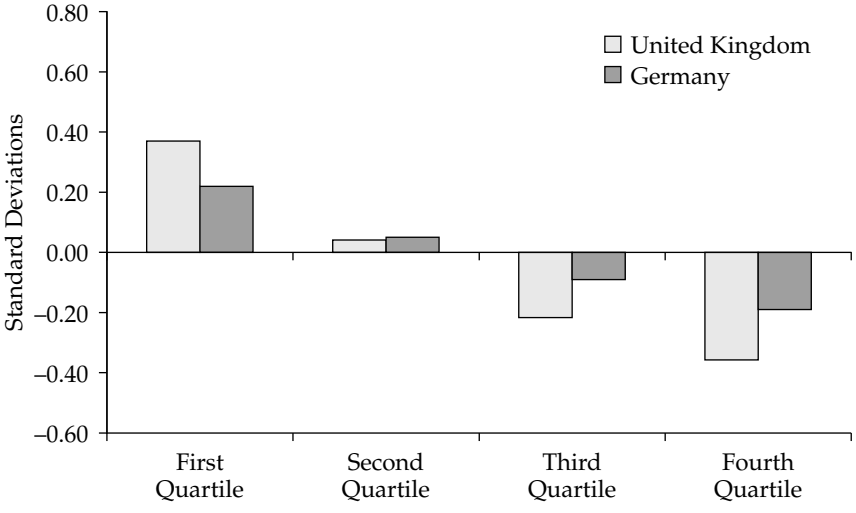
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Figure 5.3 Mean of SDQ and ISCED of Highest-Educated Parent



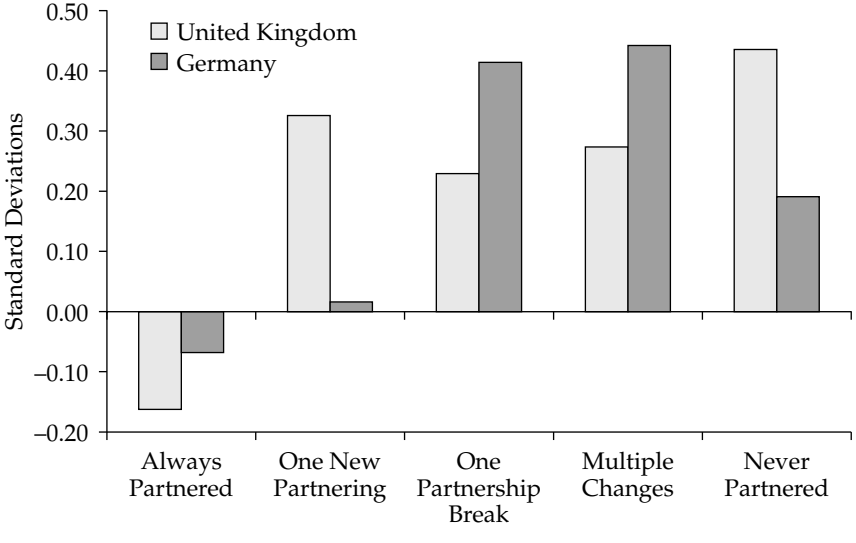
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Figure 5.4 Mean of SDQ and Parental Income



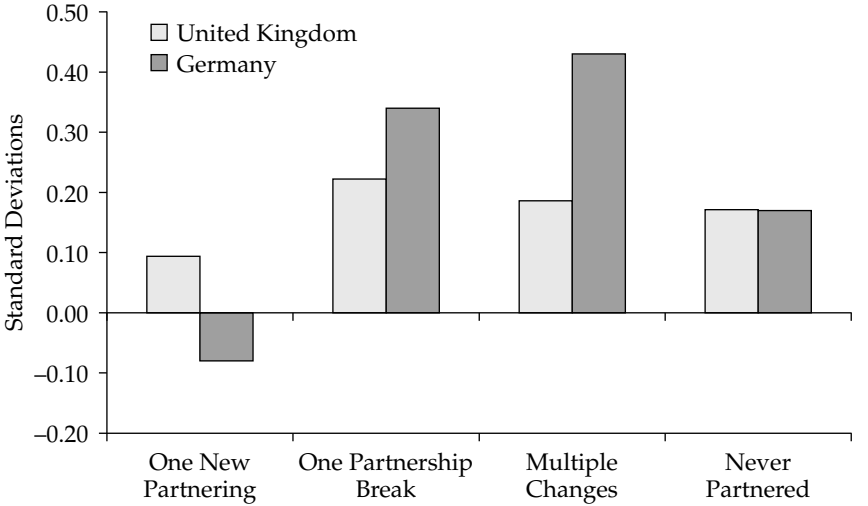
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Figure 5.5 Mean of SDQ and Family Structure Changes



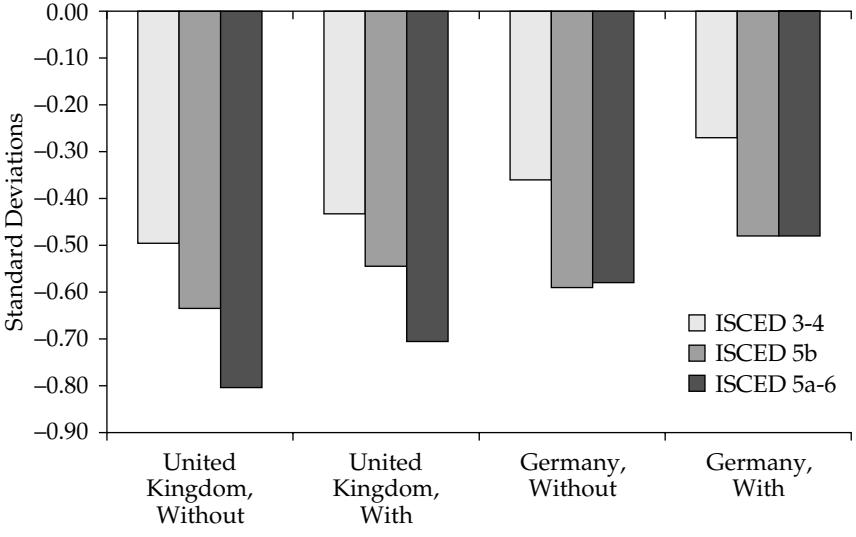
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Figure 5.6 Effects of Family Change on SDQ, Model 3



Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Figure 5.7 **Effects of Parents' Highest Education on SDQ Relative to Lowest Education Group**



Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).
Note: Figures are with and without family change variables.

Table 5.1 Parental Leave, Day Care, and Mother's Employment

	United Kingdom	Germany
Parental leave	Eight months	Three years
Public child-care coverage, children under age three	2%	8%
Mothers employed: youngest child under age three	49%	31%
Mothers employed: youngest child aged three to six	57%	42%

Source: Authors' calculations based on Pronzato (2009); OECD (2006)
Note: All figures refer to the years 2002 or 2003.

Table 5.2 Divorce and Family Structure

	United Kingdom	Germany
Divorce rate per 1000 married couples (2008)	11	10
Divorces affecting children (2008)	50%	51%
Family structure for families with young children:	Children under five*	Children under three
Married couples	63%	75%
Cohabiting couples	21%	14%
Single-parent families	16%	11%

Source: Authors' calculations based on Statistisches Bundesamt (2009); Office of National Statistics (2010)
*Authors' calculations for Great Britain from British Household Panel Study, 2000–2007 (Institute for Social and Economic Research 2011).

Table 5.3 Strength and Difficulties Questionnaire

Dimensions	United Kingdom	Germany
Emotional symptoms	5 items	3 items
Conduct problems	5 items	2 items
Hyperactivity-inattention	5 items	4 items
Peer relationship problems	5 items	4 items
Pro-social behavior	5 items	4 items
Average difficulties score based on first four dimensions	7.4 (SD=5) (median=6.3)	10.7 (SD=6) (median=10.4)

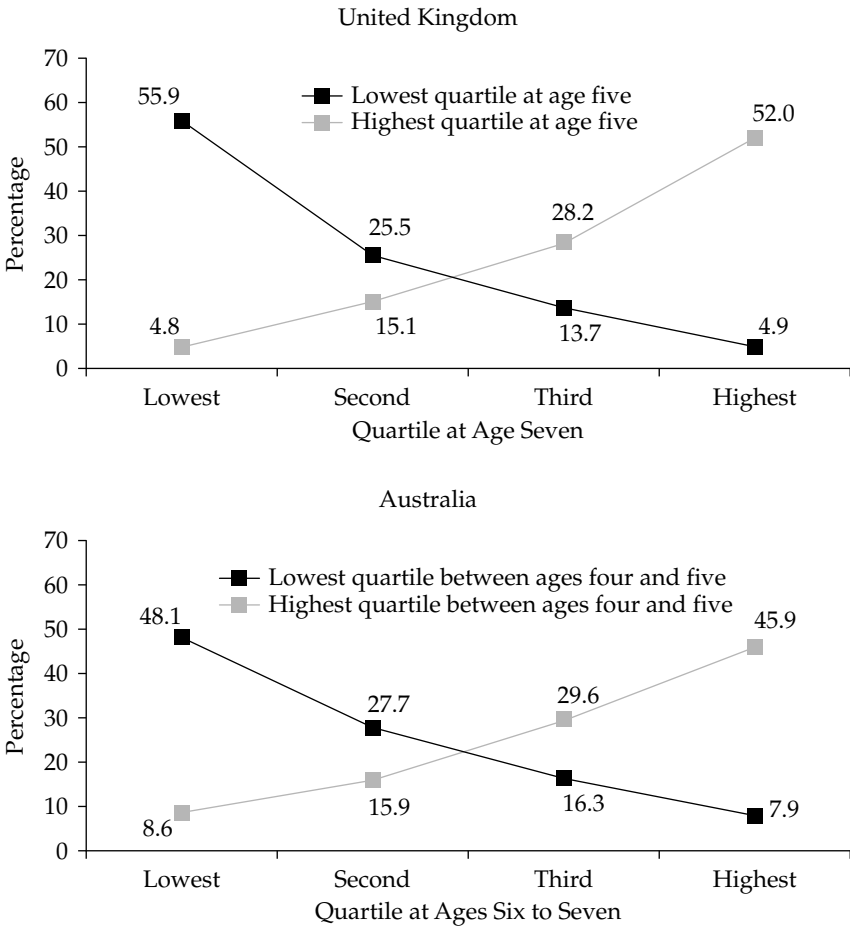
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).

Table 5.4 Regression for SDQ *Z*-Score Results

	Model 1		Model 2		Model 3	
	United Kingdom	Germany	United Kingdom	Germany	United Kingdom	Germany
Parents' highest education						
ISCED 0–2 (low)	REF	REF			REF	REF
ISCED 3–4 (medium)	–0.43 (0.04)	–0.27 (0.25)			–0.39 (0.04)	–0.28 (0.26)
ISCED 5b (medium-high)	–0.55 (0.05)	–0.48 (0.26)			–0.46 (0.05)	–0.48 (0.27)
ISCED 5a/6 (high)	–0.71 (0.04)	–0.48 (0.26)			–0.60 (0.05)	–0.48 (0.27)
Household income, near birth						
First quartile (lowest)			REF	REF	REF	REF
Second quartile			–0.19 (0.03)	–0.07 (0.15)	–0.13 (0.03)	–0.05 (0.15)
Third quartile			–0.37 (0.04)	–0.10 (0.14)	–0.25 (0.04)	–0.06 (0.15)
Fourth quartile (highest)			–0.47 (0.04)	–0.13 (0.15)	–0.31 (0.04)	–0.03 (0.16)
Family structure changes						
Always partnered	REF	REF	REF	REF	REF	REF
One new partnering	0.19 (0.05)	–0.08 (0.24)	0.14 (0.05)	–0.05 (0.23)	0.09 (0.05)	–0.08 (0.24)
One partnership break	0.26 (0.04)	0.34 (0.19)	0.25 (0.04)	0.42 (0.25)	0.22 (0.04)	0.34 (0.26)
Multiple changes	0.22 (0.07)	0.43 (0.26)	0.23 (0.07)	0.39 (0.25)	0.19 (0.07)	0.41 (0.25)
Never partnered	0.30 (0.04)	0.17 (0.26)	0.24 (0.05)	0.19 (0.21)	0.17 (0.05)	0.15 (0.21)
Unweighted N	12504	424	11592	422	11592	422

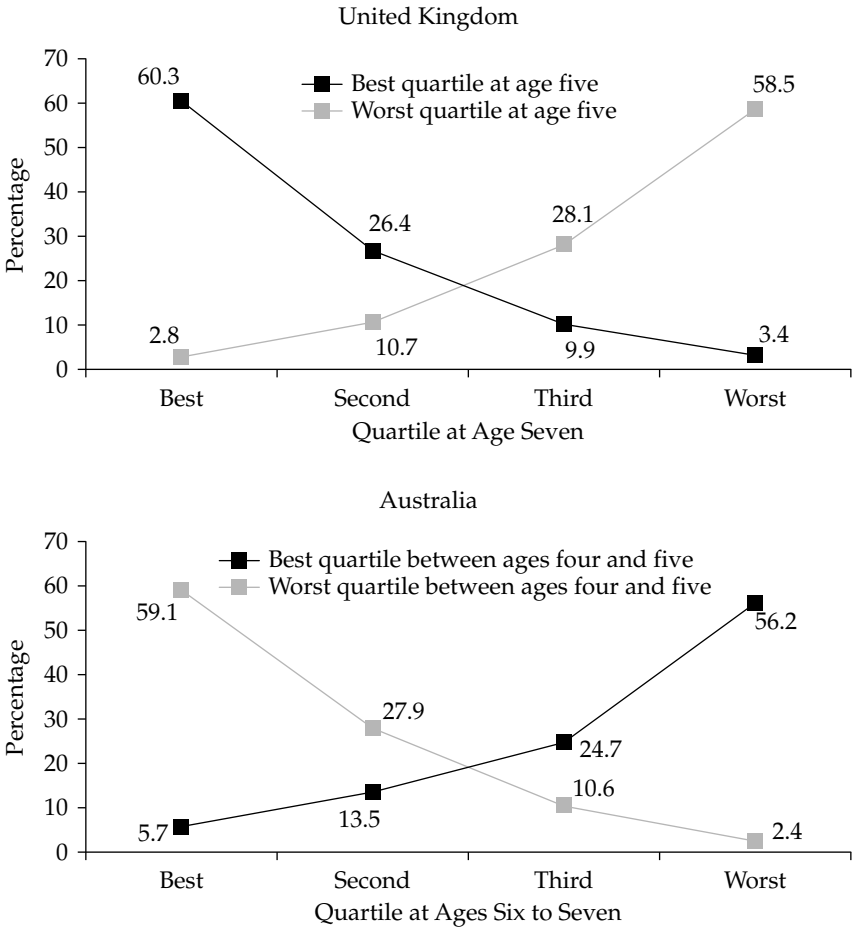
Source: Authors' calculations based on the Millenium Cohort Study (Centre for Longitudinal Studies 2010) and the German Socio-Economic Panel Study (German Institute for Economic Research 2011).
Note: Standard errors in parentheses.

Figure 6.1 Transition Matrices in Composite Cognitive Test Scores



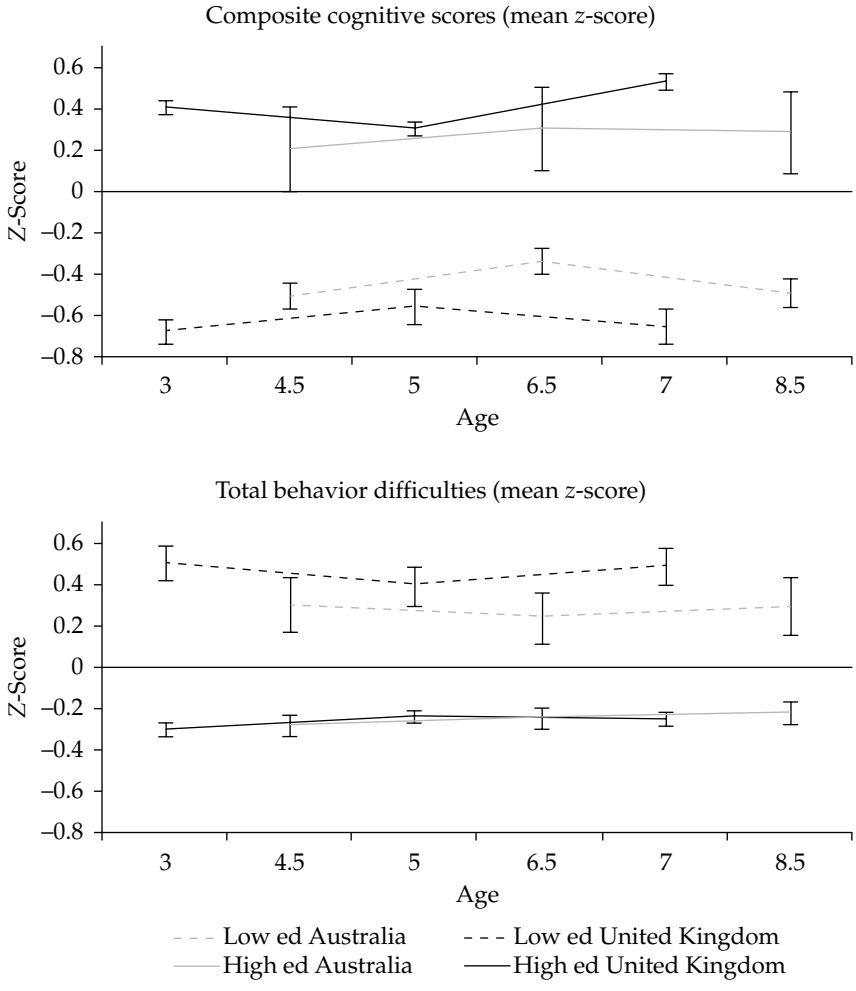
Source: Authors' calculation based on the Longitudinal Study of Australian Children (Australian Institute of Family Studies 2010) and the Millenium Cohort Study (Hansen 2010).

Figure 6.2 Transition Matrices in SDQ



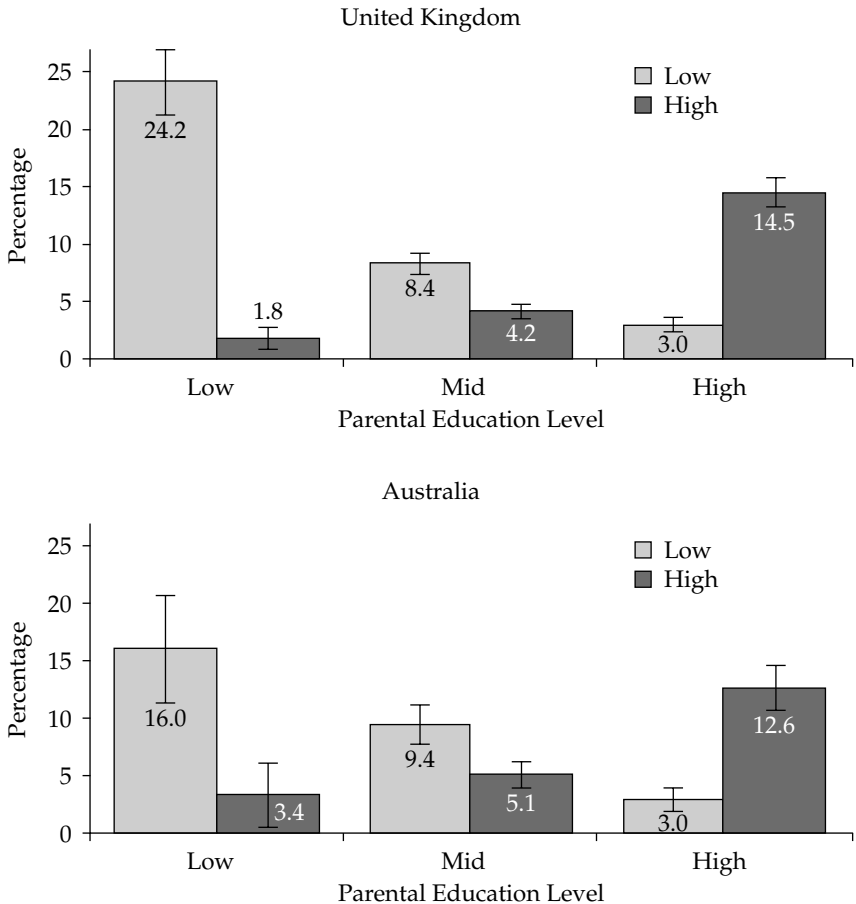
Source: Authors' calculations, adapted from Feinstein and Bynner (2004).
Note: Figure shows the quartile in which children's developmental scores fall in both the United Kingdom and Australia at around age seven, given the quartile into which their developmental score falls at age five. In the case of cognitive test scores, the best scores are highest, and in the case of the SDQ, the best scores are lowest (representing fewer behaviour difficulties). The tables show patterns in both tests, in the two countries, are similar. In all cases, about half (minimum 46 percent) or more children in the best or the worst quartile at age five are in the same quartile at age seven. In all cases too, relatively few observations move from the best to the worst quartile, or from the worst to the best quartile between ages five and seven (maximum 8.6 percent).

Figure 6.3 Mean Cognitive Scores and Social and Emotional Difficulties



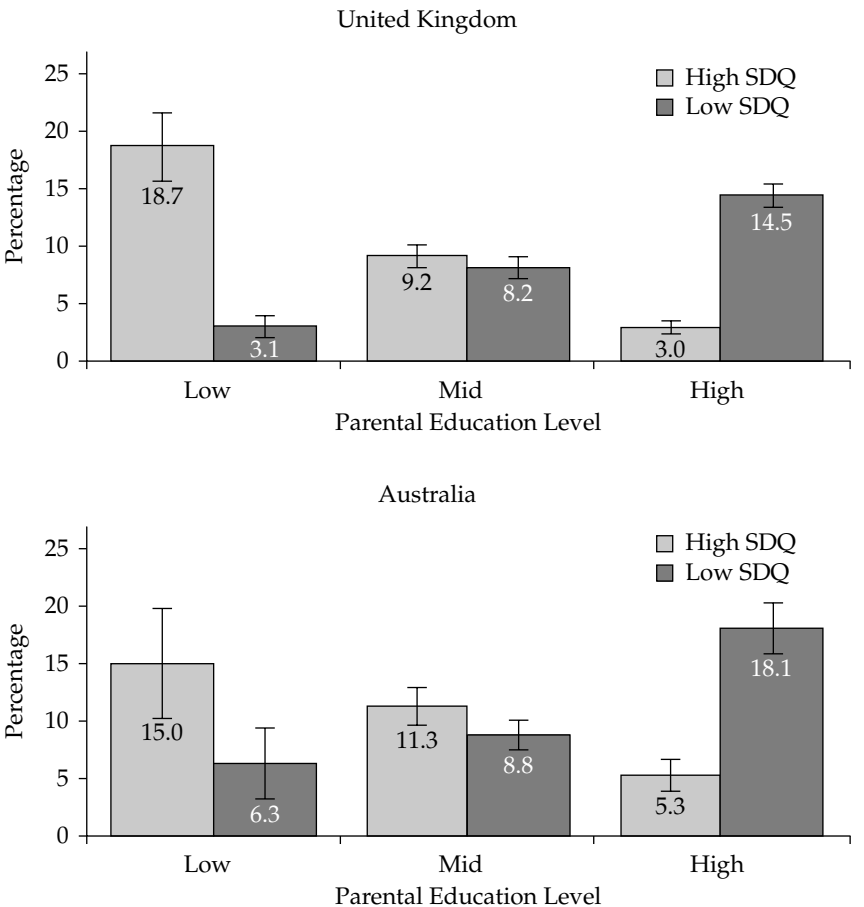
Source: Authors' calculations, adapted from Feinstein and Bynner (2004).
Note: Average cognitive scores (left graph) and behavior difficulties scores (right graph) for children whose parents have low and high levels of education at ages three, five, and seven years (United Kingdom) and at four to five, six to seven, and eight to nine (Australia). Scores are in *z*-scores, with mean 0 and standard deviation of 1, to allow easier comparison across countries and graphs. Trends in average scores for children of highly educated parents are shown by the continuous lines, and for less-educated parents by the dashed lines, with trends for the United Kingdom in black and for Australia in gray. Vertical lines represent 95 percent confidence intervals for each of the point estimates (that is, the true population value is likely to fall within these confidence intervals in 95 samples of every 100 drawn from this population).

Figure 6.4 Persistence in Composite Cognitive Scores



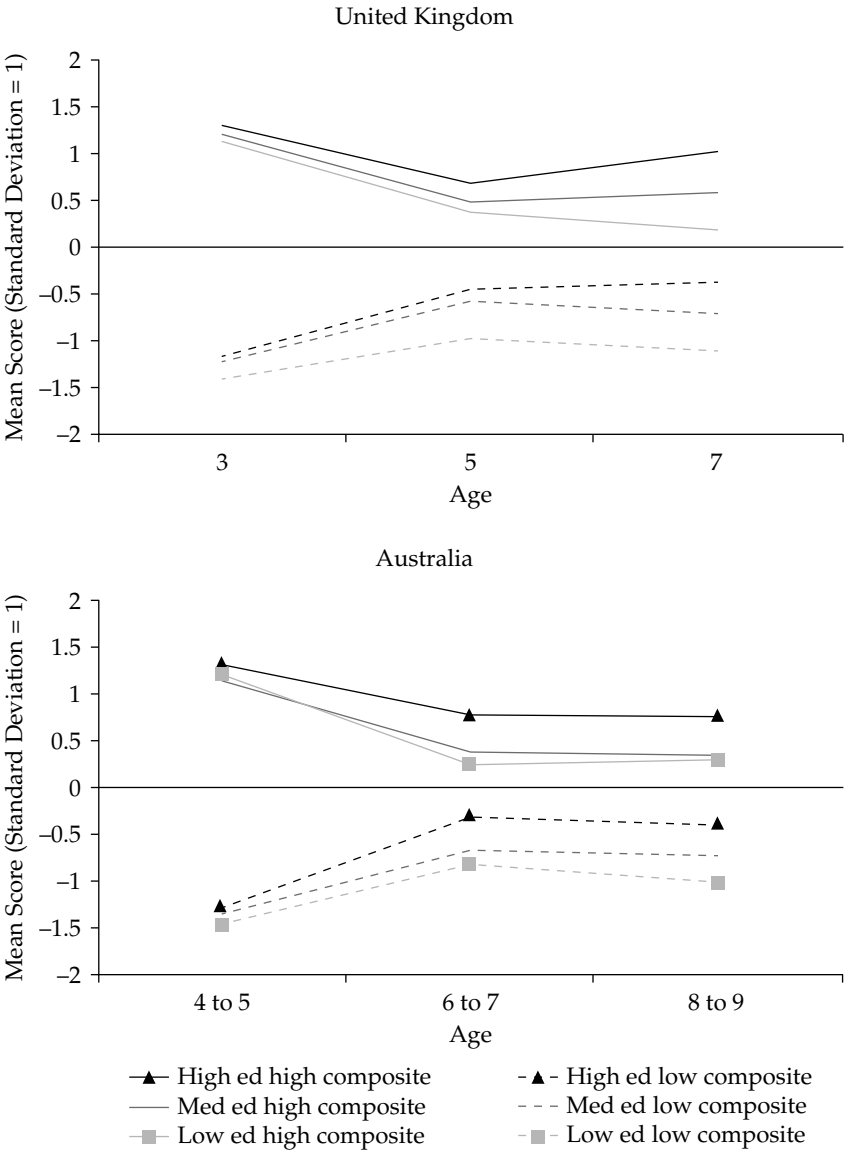
Source: Authors' calculation based on the Longitudinal Study of Australian Children (Australian Institute of Family Studies 2010) and the Millenium Cohort Study (Hansen 2010).

Figure 6.5 Persistence in Behavior Difficulties



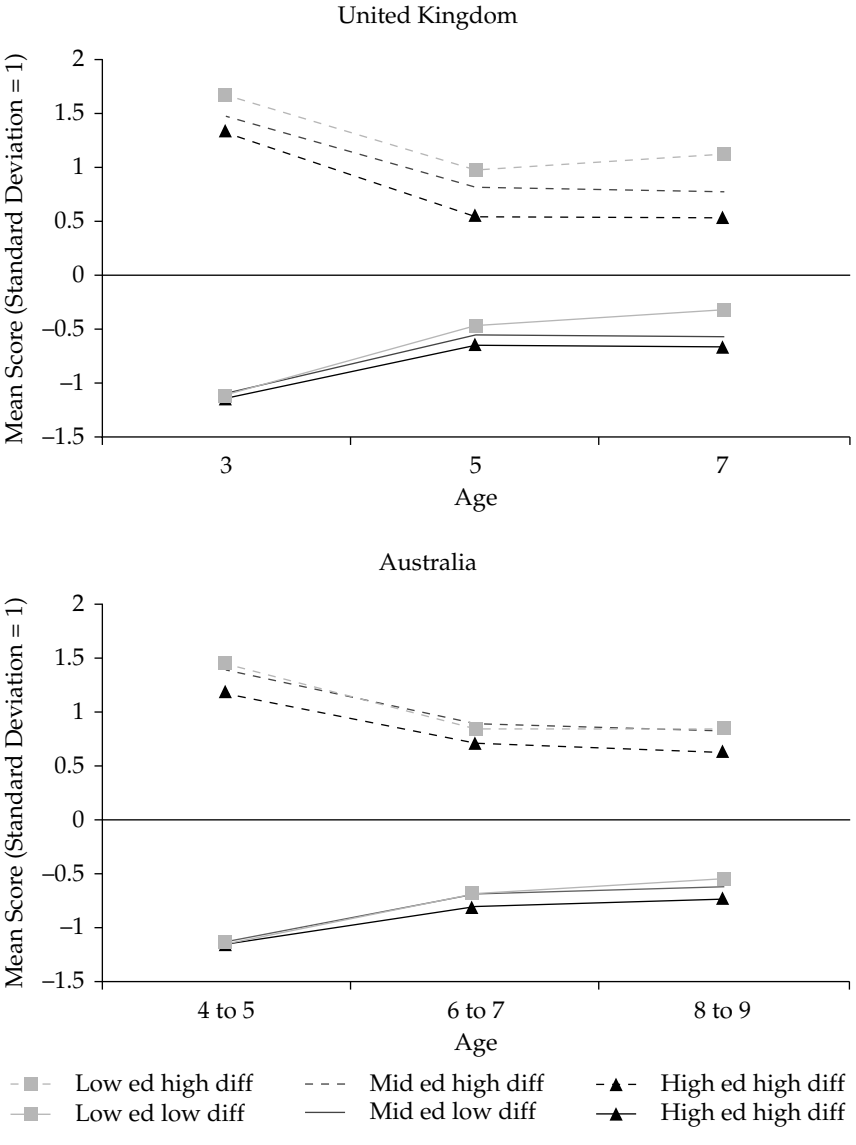
Source: Authors' calculations based on the Longitudinal Study of Australian Children (Australian Institute of Family Studies 2010) and the Millenium Cohort Study (Hansen 2010).

Figure 6.6 Trajectory of Composite Test Scores



Source: Authors' calculation based on the Longitudinal Study of Australian Children (Australian Institute of Family Studies 2010) and the Millenium Cohort Study (Hansen 2010).
Note: The sample sizes for the six groups (in the same order as the legend) are as follows. U.K.: 1426, 1059, 106, 492, 1386, 720; Australia: 468, 412, 45, 203, 452, 111.

Figure 6.7 Trajectory of Behavior Problems



Source: Authors' calculation based on the Longitudinal Study of Australian Children (Australian Institute of Family Studies 2010) and the Millenium Cohort Study (Hansen 2010).

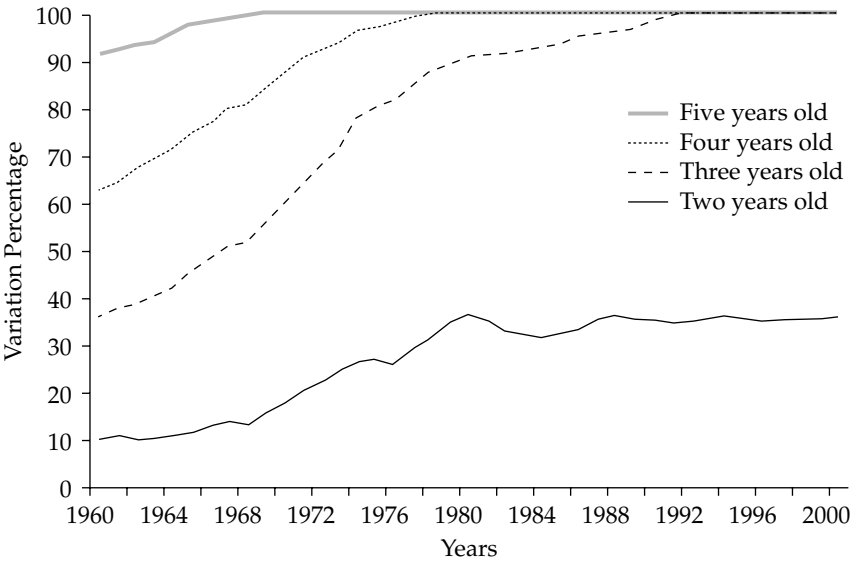
Note: The sample sizes for the six groups (in the same order as the legend) are as follows. U.K.: 416, 142, 1125, 1154, 443, 1318; Australia: 100, 438, 214, 46, 396, 525.

Table 6.1 First Component Scores from Cognitive Development Outcomes

United Kingdom	Eigenvalue	Proportion Total Variance	Australia	Eigenvalue	Proportion Total Variance
Age three (BAS vocabulary and Bracken School Readiness)	1.5863	0.7928			
Age five (BAS vocabulary, BAS picture similarity, and BAS pattern construction)	2.1008	0.7003	Ages 4 to 5 (PPVT & Who Am I?)	1.2797	0.6398
Age seven (BAS word reading, BAS pattern construction, and number skills)	1.7881	0.5960	Ages 6 to 7 (PPVT and matrix reasoning)	1.2722	0.6361
			Ages 8 to 9 (PPVT and matrix reasoning)	1.3472	0.6736

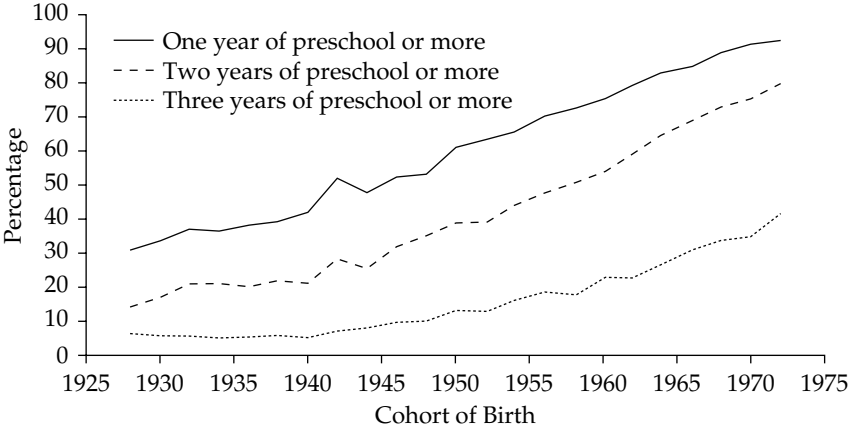
Source: Authors' calculation based on the Longitudinal Study of Australian Children (Australian Institute of Family Studies 2010) and the Millenium Cohort Study (Hansen 2010).
Note: BAS = British Ability Scale; PPVT = Peabody Picture Vocabulary Test.

Figure 7.1 Variations in Exposure to Pre-Primary Education



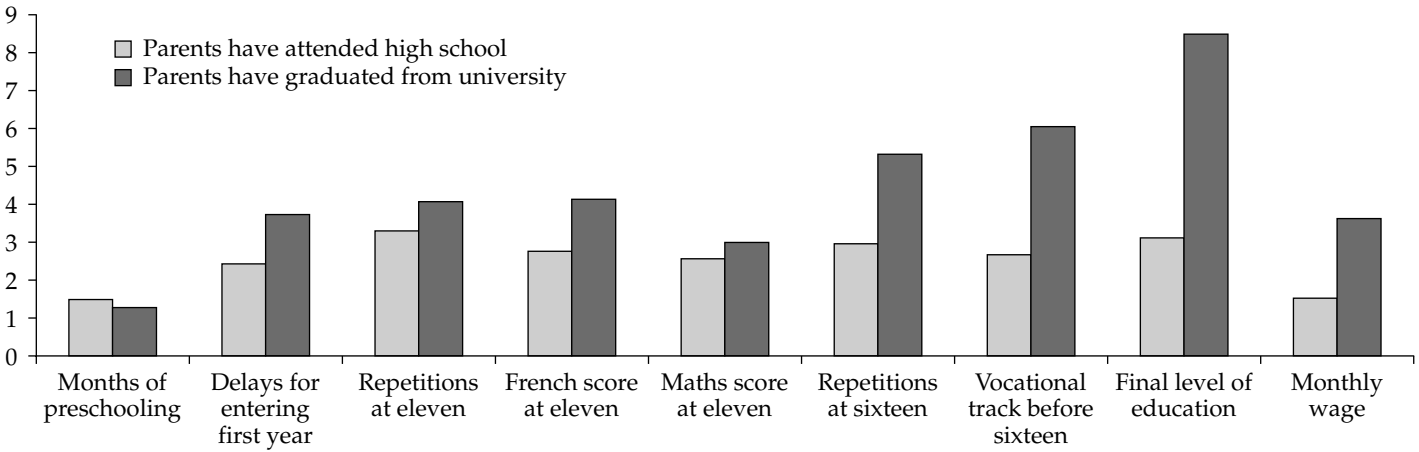
Source: Authors' calculations based on French ministry of education data (Ministère de l'éducation nationale 2001).

Figure 7.2 Distribution of Preschool Duration



Source: Authors' calculation.

Figure 7.3 Odds Ratios Between Children Through Education Levels



Source: Authors' calculations.

Table 7.1 Preschool Enrollment Rates

	1969 Birth Cohort		1972 Birth Cohort		1978 Birth Cohort	
Enrollment rate at:	DEPP 1980 Report	Official Statistics	DEPP 1978 Report	Official Statistics	DEPP 1989 Report	Official Statistics
Two years old	16%	25%	13%	25%	16%	35%
Three years old	54	73	61	73	69	90
Four years old	82	85	87	95	89	100

Source: Authors' compilation based on DEPP panels and official registry data (Ministère de l'éducation nationale, various years).

Table 7.2 Datasets and Variables

	DEPP			
Variables	1969	1972	1978	FQP
Age of entry in preschool	x	x	x	
Duration of preschool	x	x	x	x
Repetitions in primary school	x	x	x	x
Repetitions in secondary school	x		x	x
Test scores in sixth grade			x	
High school graduation	x		x	x
Wage				x
Gender	x	x	x	x
Number of siblings	x	x	x	x
Rank among siblings	x	x	x	x
Parental occupation	x	x	x	x
Parental education			x	x
Department of birth	x	x	x	x

Source: Authors' compilation based on DEPP panels (Ministère de l'éducation nationale, various years) and FQP survey (INSEE 1993).
Note: The figures for the DEPP panels represent the year of birth cohort and not the year of the survey.

Table 7.3 Descriptive Statistics

	DEPP Panels	FQP Survey
Number of repetitions at age eleven	0.29	.34
Number of repetitions at age sixteen	0.81	.92
Some degree (indicator)		.73
Baccalauréat or more (indicator)	0.58	.33
Monthly wage (in euros 1993)		1262.49
First grade repetition (indicator)	0.12	
Second grade repetition (indicator)	0.06	
Third grade repetition (indicator)	0.06	
Fourth grade repetition (indicator)	0.06	
Fifth grade repetition (indicator)	0.07	

Source: Authors' compilation based on DEPP panels (Ministère de l'éducation nationale, various years) and FQP surveys (INSEE 1993).

Table 7.4 Effect of Preschool in Base Specification

	Number of Repetitions at Eleven	Test Score in Sixth Grade	Number of Repetitions at Sixteen	Some Degree	Graduate from High School	Monthly Wage
Panel A. DEPP: effect of age of entry						
Age two at entry	–0.0938***	0.0672**	–0.142***		0.0287***	
	(0.0094)	(0.0266)	(0.0157)		(0.0101)	
Age three at entry	REF					
Age four at entry	0.0843***	–0.105***	0.106***		–0.0405***	
	(0.0071)	(0.0241)	(0.0125)		(0.0079)	
Observations	51255	9607	29079		29581	
Model	OLS	OLS	OLS		probit	
Panel B. FQP: effect of preschool duration						
Less than one year of preschool	REF					
Two years of preschool	–0.0366**		–0.0663***	0.0196*	–0.0106	0.0298**
	(0.0145)		(0.0239)	(0.0109)	(0.0134)	(0.0141)
Three years of preschool	–0.0680***		–0.0988***	0.0431***	0.0270*	0.0460***
	(0.0165)		(0.0271)	(0.0121)	(0.0153)	(0.0161)
Observations	8672		8672	8750	8761	5843
Model	OLS		OLS	probit	probit	OLS

Source: Authors' calculations based on DEPP panels (Ministère de l'éducation nationale, various years) and FQP survey (INSEE 1993).
Note: Coefficients reported are marginal effects and standard errors in parentheses. Panel A: Interpretation of the first coefficient: starting preschool at age two rather than age three decreases the number of repetitions at age eleven by 0.0938. Panel B: Interpretation of the first coefficient: staying in preschool two years rather than one decreases the number of repetitions at age eleven by 0.0366. Control variables include: father's occupational group, number of siblings, rank among them, and cohorts fixed effects; school districts fixed effects are included in panel A, birth département fixed effects and education of the parents are included in panel B.
***$p < .01$; **$p < .05$; *$p <. 10$

Table 7.5 Effect of Preschool: Robustness Checks

Dependent variable	Subsample (1)	With Parental Education (2)	Subsample (3)	With Schools Effects (4)	Subsample (5)	Instrumentation (6)
Test score at age eleven	–0.0700***	–0.0544***				
	(0.0108)	(0.0105)				
Repetitions at age eleven	0.123***	0.114***	0.0548***	0.0681***	0.0951***	0.00615
	(0.00427)	(0.00424)	(0.00540)	(0.00618)	(0.00335)	(0.0239)
Repetitions at age sixteen	0.112***	0.0998***	0.0815***	0.102***	0.0974***	0.0764*
	(0.00740)	(0.00723)	(0.00881)	(0.0102)	(0.00566)	(0.0446)
High school graduation	–0.0268***	–0.0224***	–0.0417***	–0.0430***	–0.0413***	–0.148**
	(0.00441)	(0.00439)	(0.00425)	(0.00491)	(0.00356)	(0.0698)
Parental education	No	Yes				
Schools fixed effects			No	Yes		
Instrumentation					No	Yes
Birth cohorts	78 (and 72)	78 (and 72)	69	69	69 (and 72)	69 (and 72)

Source: Authors' calculations based on DEPP panels (Ministère de l'éducation nationale, various years).
Notes: The effect of preschool is assumed to be linear in the age of entry. Coefficients reported are marginal effects of starting one year later, standard errors in parentheses. Interpretation: entering preschool one year later decreases test score by 0.07 of a standard deviation without controlling for parental education and by 0.0544 of a standard deviation when controlling for it. Control variables include: father's occupational group, number of siblings, rank among them, cohorts fixed effects, and school districts fixed effects. Column (2) adds parental education and has to be compared to column (1), which is on the same sample. Column (4) adds schools fixed effects and has to be compared with column (3). Column (6) instruments for age of entry in preschool and has to be compared with column (5). All models are OLS except for high school graduation, estimated by a probit. The number of observations for column (2) ranges from 9607 for the tests to 32867 for repetitions at age eleven; the number of observations in column (4) ranges from 13132 for repetitions at 16 to 18563 for repetitions at age eleven; the number of observations in column (6) ranges from 6799 for repetitions at 16 to 21710 for repetitions at age eleven.
***$p < .01$; **$p < .05$; *$p < .10$

Table 7.6 Dynamics: Effect of Preschool on Probability of Repeating Each Grade

	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade
Age of entry in preschool	0.0248*** (0.00156)	0.00750*** (0.00116)	0.00729*** (0.00115)	0.00727*** (0.00123)	0.00559*** (0.00130)

Source: Authors' calculations based on DEPP panels (Ministère de l'éducation nationale, various years).
Notes: Coefficients reported are marginal effects of starting one year later, standard errors in parentheses. Interpretation: entering one year later in preschool increases by 2.48 percentage points the probability of repeating first grade of primary school. Control variables include: father's occupational group, number of siblings, rank among them, cohorts fixed effects, and school districts fixed effects. All models are probits.
***$p < .01$; **$p < .05$; *$p < .10$

Table 7.7 Dynamics: Effect of Preschool on Monthly Wage

	Monthly Wage	
Less than one year of preschool	REF	
Two years of preschool	0.0298**	0.0321**
	(0.0141)	(0.0130)
Three years of preschool	0.0460***	0.0361**
	(0.0161)	(0.0149)
Education level	no	yes

Source: Authors' calculations based on FQP survey (INSEE 1993).
Notes: Coefficients are marginal effects. Standard errors in parentheses. Interpretation: having attended preschool for two years rather than one increases by 2.98 percent one's monthly wage.
***$p < .01$; **$p < .05$; *$p < .10$

Table 7.8 Descriptive Statistics by Socioeconomic Group

	Socioeconomic Group 1	Socioeconomic Group 2	Socioeconomic Group 3
Number of repetitions at age eleven	0.44	0.22	–0.01
Number of repetitions at age sixteen	1.03	0.78	0.33
Test score (roughly at age eleven)	5.11	5.51	5.96
Some degree (indicator)	0.64	0.83	0.93
Baccalauréat or more (indicator)	0.46	0.61	0.85
Monthly wage (in euros 1993)	1,153.94	1,340.69	1,633.66

Source: Authors' calculations based on DEPP panels (Ministère de l'éducation nationale, various years) and FQP survey (INSEE 1993).

Table 7.9 Heterogenous Effects

Panel A. DEPP: age of entry

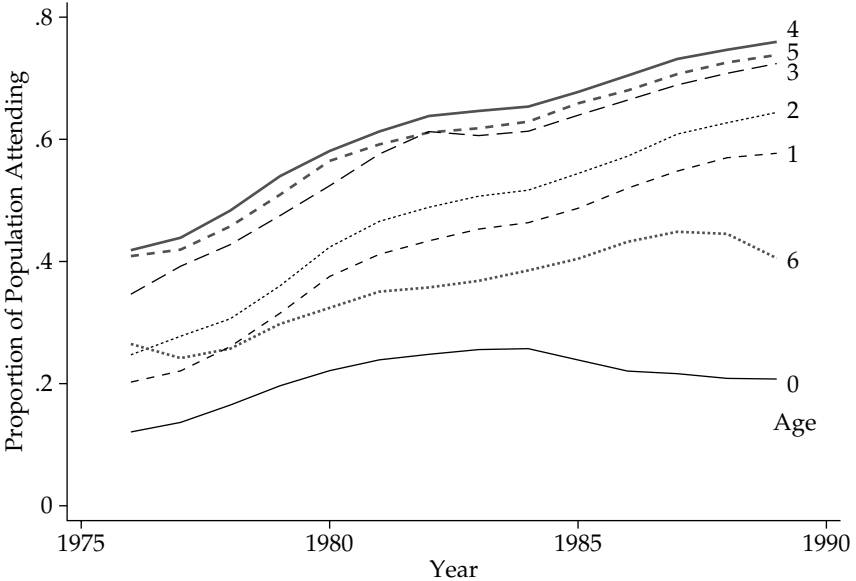
	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Test Score	High School Graduation
Age of entry	0.0208***	0.0067***	0.0061***	0.0068***	0.0062***	–0.0754***	–0.0399***
	(0.0028)	(0.0017)	(0.0017)	(0.0018)	(0.0018)	(0.0168)	(0.0039)
Age of entry × socioeconomic group 1	–0.0040	–0.0025	–0.0011	–0.0043	–0.0069***	0.00855	0.0093
	(0.0037)	(0.0027)	(0.0026)	(0.0030)	(0.0032)	(0.0230)	(0.0077)
Age of entry × socioeconomic group 3	–0.0249***	–0.0065**	–0.0054*	–0.0110***	–0.0049*	0.0226	0.0243***
	(0.0045)	(0.0030)	(0.0030)	(0.0035)	(0.0033)	(0.0344)	(0.0084)

Panel B. FQP: preschool duration

	Monthly Wage
At least two years	0.0457**
	(0.0204)
At least two years × socioeconomic group 1	–0.00263
	(0.0261)
At least two years × socioeconomic group 3	–0.0998**
	(0.0470)

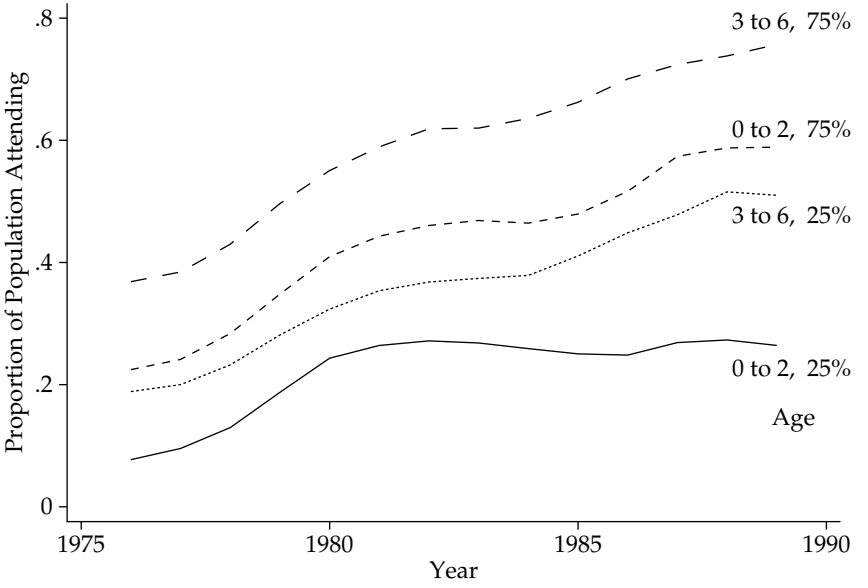
Source: Authors' calculations based on DEPP panels (Ministère de l'éducation nationale, various years) and FQP survey (INSEE 1993).
Notes: Coefficients reported are marginal effects and standard errors in parentheses. Interpretation: entering preschool one year later increases probability to repeat first grade of primary school by 2.08 percent for children belonging to socioeconomic group (SG) 2. For children in SG 1, this effect is lower by 0.4 percent. SG equals 1 for farmers' and manuals workers' children; 2 for non-manual workers', lower-grade professionals', and artisans' children; 3 for higher-grade professionals' children.
***$p < .01$; **$p < .05$; *$p < .10$

Figure 8.1 Day-Care Expansion



Source: Authors' calculations based on administrative register data documented in Statistics Denmark (2011b) and described in Statistics Denmark (1990).

Figure 8.2 Day-Care Coverage



Source: Authors' calculations based on administrative register data documented in Statistics Denmark (2011b) and described in Statistics Denmark (1990).

Table 8.1 Descriptive Statistics

Covariate	Female	Rural	Female	Semi	Female	Urban	Male	Rural	Male	Semi	Male	Urban
Mother school years	11.25	(2.74)	11.53	(2.74)	11.50	(2.72)	11.25	(2.73)	11.52	(2.73)	11.50	(2.72)
Father school years	11.94	(3.06)	12.27	(3.00)	12.29	(2.94)	11.95	(3.05)	12.27	(2.97)	12.30	(2.94)
Offspring school years	12.99	(2.05)	12.98	(2.11)	12.77	(2.16)	12.85	(2.06)	12.81	(2.13)	12.64	(2.19)
Parents earnings (DKK)	557646	(279845)	613586	(300538)	608623	(295177)	554054	(276794)	611408	(298433)	607182	(294276)
Offspring earnings (DKK)	159781	(111603)	159237	(115535)	145781	(113214)	223973	(141049)	215712	(144000)	199349	(142029)
DD	0.230	(0.118)	0.364	(0.157)	0.442	(0.129)	0.230	(0.118)	0.364	(0.158)	0.442	(0.128)
	65334	201	55148	59	50652	15	69212	201	57689	59	53698	15

Source: Authors' calculations based on administrative register data documented in Statistics Denmark (2011a) and described in Leth-Sørensen (1993).
Notes: Offspring schooling is measured in 2006.
Parental schooling is measured when child is age eight.
Offspring earnings are measured in 2006.
Parents' earnings are means of mother plus father while child is seven through sixteen reflated to 2006 DKK.
DD indicates the number of day-care places by municipality per child age six or younger.
Standard deviations in parentheses.

Table 8.2 Correlation Matrix

	DD	School Offspring	School Mother	School Father	Earnings Offspring	Earnings Parents
DD	1.000	–0.083	0.103	0.100	–0.098	0.171
Offspring school	–0.083	1.000	0.245	0.205	0.268	0.233
Mother school	0.103	0.245	1.000	0.365	–0.019	0.369
Father school	0.100	0.205	0.365	1.000	–0.008	0.352
Offspring earnings	–0.098	0.268	–0.019	–0.008	1.000	0.054
Parents earnings	0.171	0.233	0.369	0.352	0.054	1.000

Source: Authors' calculations based on administrative register data documented in Statistics Denmark (2011a) and described in Leth-Sørensen (1993).
Note: DD indcates day-care density.

Table 8.3 Parent and Offspring Schooling and Day-Care Density

Covariate	Female	Rural	Female	Semi	Female	Urban	Male	Rural	Male	Semi	Male	Urban
Mother school= 7–11	–1.0128	(0.0784)	–1.3075	(0.0940)	–1.5317	(0.1426)	–0.9911	(0.0798)	–0.9086	(0.0967)	–0.9853	(0.1472)
Mother school= 12–14	–0.3417	(0.0777)	–0.6090	(0.0931)	–0.5609	(0.1410)	–0.4315	(0.0790)	–0.3102	(0.0958)	–0.2487	(0.1453)
Mother school= 16–18	0.0815	(0.0935)	–0.0243	(0.1160)	0.2435	(0.1757)	0.0157	(0.0956)	0.1608	(0.1173)	0.1934	(0.1821)
DD*mother school= 7–11	0.2743	(0.2863)	0.6304	(0.2304)	0.8813	(0.3065)	0.7933	(0.2943)	0.2928	(0.2337)	0.2089	(0.3154)
DD*mother school= 12–14	0.1215	(0.2792)	0.5871	(0.2254)	0.4102	(0.3019)	0.5183	(0.2868)	0.1509	(0.2288)	–0.1402	(0.3099)
DD*mother school= 16–18	0.1425	(0.3282)	0.3799	(0.2742)	–0.1442	(0.3737)	0.2467	(0.3407)	0.0350	(0.2766)	–0.2026	(0.3854)
Father school= 7–11	–0.9186	(0.0900)	–1.1410	(0.1126)	–1.6681	(0.1515)	–0.7903	(0.0906)	–0.8526	(0.1123)	–1.0213	(0.1558)
Father school= 12–14	–0.4997	(0.0865)	–0.6889	(0.1082)	–0.9359	(0.1435)	–0.3277	(0.0870)	–0.3541	(0.1079)	–0.4748	(0.1476)
Father school= 16–18	0.0789	(0.1015)	–0.0941	(0.1264)	0.0399	(0.1745)	0.0271	(0.1027)	0.2322	(0.1280)	0.5678	(0.1795)
DD*father school= 7–11	0.2924	(0.3093)	0.3331	(0.2654)	1.4008	(0.3325)	–0.0336	(0.3129)	–0.1722	(0.2653)	–0.0368	(0.3419)
DD*father school= 12–14	0.2239	(0.2900)	0.3904	(0.2518)	1.1136	(0.3152)	–0.1882	(0.2930)	–0.2521	(0.2518)	–0.0006	(0.3238)
DD*father school= 16–18	0.2797	(0.3345)	0.3732	(0.2901)	0.3501	(0.3750)	0.0289	(0.3432)	–0.3514	(0.2927)	–0.9979	(0.3849)
DD	–0.5032	(0.4437)	–0.0477	(0.4328)	–2.0843	(0.7034)	–0.6956	(0.4568)	–0.4423	(0.4379)	1.7938	(0.7169)
Intercept	14.7518	(0.1174)	14.8577	(0.1587)	15.3981	(0.2823)	14.4381	(0.1192)	14.4619	(0.1605)	13.5401	(0.2882)
R^2 within overall	0.1532	0.1546	0.1705	0.1613	0.1812	0.1853	0.0978	0.0990	0.1176	0.1126	0.1236	0.1043
Number of observations, number of municipalities	65334	201	55148	59	50652	15	69212	201	57689	59	53698	15

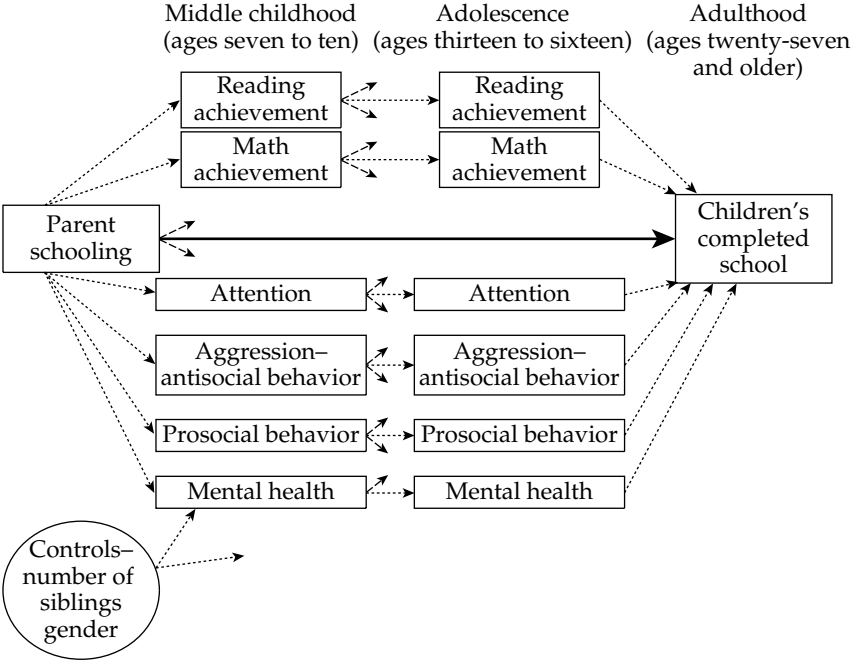
Source: Authors' calculations based on administrative register data documented in Statistics Denmark (2011a, 2011b) and described in Leth-Sørensen (1993) and Statistics Denmark (1990).
Note: Dependent variable is years of completed schooling in 2006.
Parental schooling are measured when child is age eight. Reference schooling is fifteen years.
DD indicates the number of day-care places by municipality per child age six or younger.
Also included are year of birth and municipality dummies.

Table 8.4 Parent and Offspring Earnings and Day-Care Density

Covariate	Female	Rural	Female	Semi	Female	Urban	Male	Rural	Male	Semi	Male	Urban
Quartile= 1 (low)	–0.4009	(0.0902)	–0.6588	(0.1130)	–1.4008	(0.1806)	–0.5542	(0.0825)	–0.5511	(0.1039)	–0.5931	(0.1647)
Quartile= 2	–0.2725	(0.0914)	–0.4756	(0.1132)	–0.5719	(0.1813)	–0.0953	(0.0834)	–0.0898	(0.1034)	–0.0808	(0.1639)
Quartile= 4 (high)	–0.0803	(0.0942)	–0.0501	(0.1173)	0.0350	(0.1734)	–0.3268	(0.0871)	–0.2134	(0.1083)	–0.1402	(0.1589)
DD*quartile= 1 (low)	–0.9183	(0.3655)	–1.0665	(0.2973)	0.4103	(0.3928)	0.2337	(0.3351)	–0.4008	(0.2731)	–0.8801	(0.3592)
DD*quartile= 2	0.0982	(0.3669)	0.1626	(0.3005)	0.3154	(0.4033)	0.2768	(0.3351)	–0.2532	(0.2737)	–0.2000	(0.3644)
DD*quartile= 4 (high)	0.1410	(0.3400)	0.0443	(0.2850)	0.0617	(0.3760)	0.6047	(0.3158)	0.3070	(0.2624)	–0.0179	(0.3436)
DD	0.6211	(0.5742)	0.3526	(0.6407)	–0.1640	(1.2234)	–0.0097	(0.5250)	0.0628	(0.5925)	1.4705	(1.1144)
Intercept 1	10.9819	(0.1218)	11.0050	(0.2017)	10.8910	(0.4606)	11.5747	(0.1113)	11.5338	(0.1865)	10.8264	(0.4200)
R^2 within overall	0.0078	0.0081	0.0153	0.0154	0.0181	0.0183	0.0060	0.0053	0.0098	0.0093	0.0142	0.0100
Number of observations, number of municipalities	65334	201	55148	59	50652	15	69212	201	57689	59	53698	15

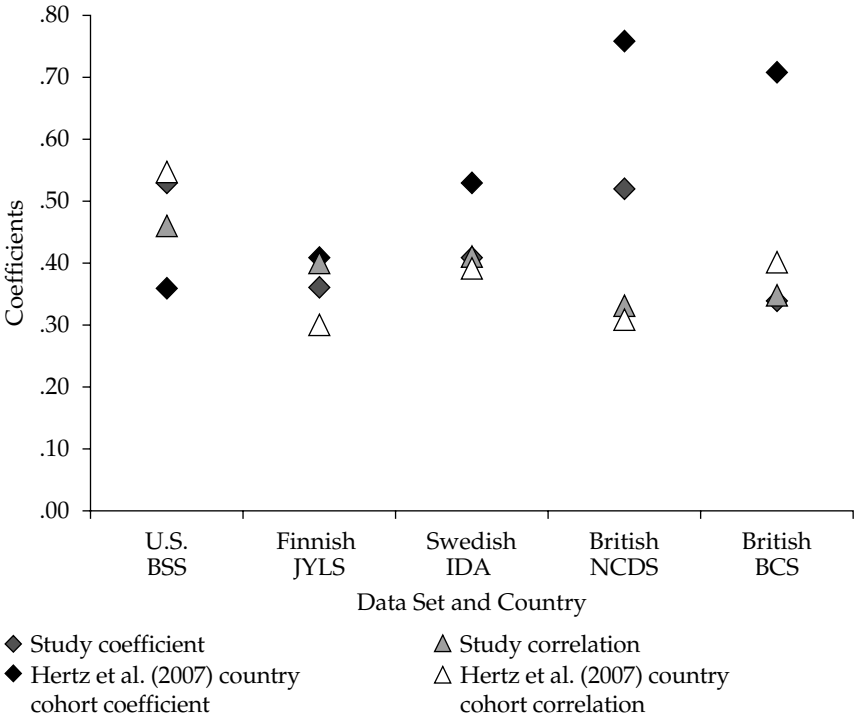
Source: Authors' calculations based on administrative register data documented in Statistics Denmark (2011a, 2011b) and described in Leth-Sørensen (1993) and Statistics Denmark (1990).
Notes: Dependent variable is child annual log labor earnings in 2006.
Parents' earnings are means of mother plus father while child is age seven through sixteen reflated. Reference quartile is #3.
DD indicates the number of day-care places by municipality per child age six or younger.
Also included are year of birth and municipality dummies.

Figure 9.1 **Model of Skills and Behaviors in the Transmission of Socioeconomic Status**



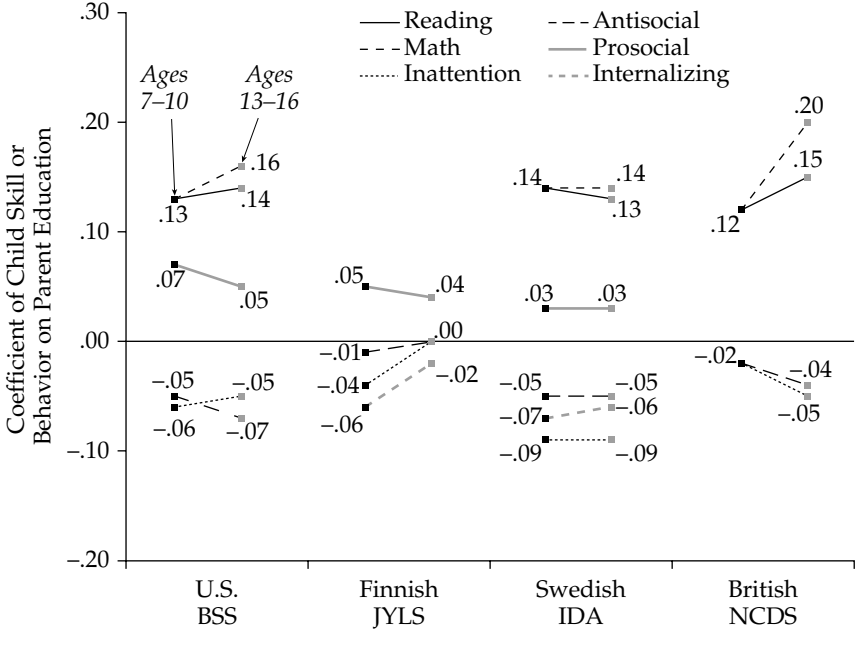
Source: Authors' figure.

Figure 9.2 Parent-Child Education Correlations and Coefficients



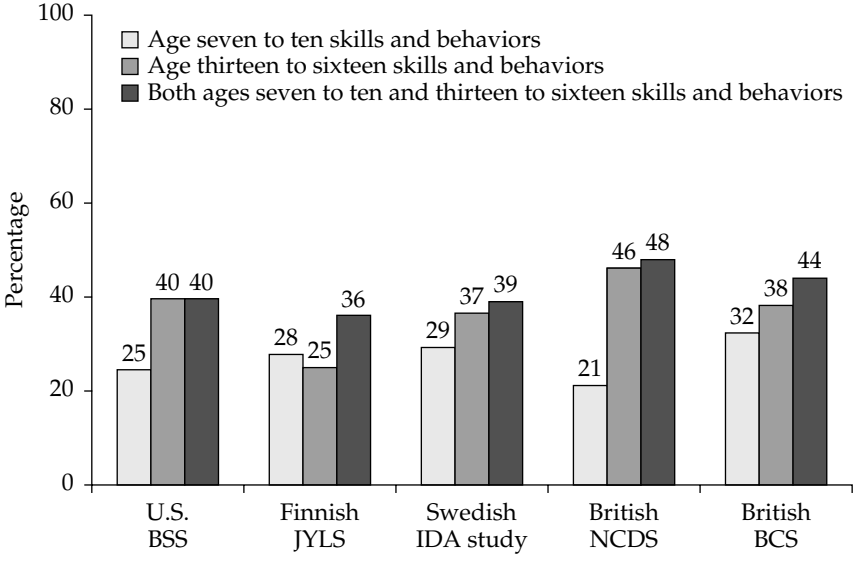
Source: Authors' calculations and data from U.S. BSS (Alexander and Entwisle 2003); JYLS (Pulkkinen 2006); IDA (Magnusson 1988); NCDS and BCS (Bynner et al. 2002); and Hertz et al. (2007).

Figure 9.3 Child Skill and Behavior Associations with Parent Education



Source: Authors' calculations and data from U.S. BSS (Alexander and Entwisle 2003); JYLS (Pulkkinen 2006); IDA (Magnusson 1988); NCDS and BCS (Bynner et al. 2002).

Figure 9.4 Intergenerational Correlation in Education



Source: Authors' calculations and data from U.S. BSS (Alexander and Entwisle 2003); JYLS (Pulkkinen 2006); IDA (Magnusson 1988); NCDS and BCS (Bynner et al. 2002).

Table 9.1 Cross-Country Differences in Reading Literacy Among Fifteen-Year-Olds

	Mean Scores	5th/95th Percentile Scores	Slope of SES Gradient	Between-School Variation
United States	504	320/660	48	.35
United Kingdom	523	352/682	49	.22
Sweden	516	354/658	36	.09
Finland	546	390/681	30	.11

Source: Authors' compilation based on data from OECD (2001).
Notes: The standard deviation of reading literacy scores are 100.
Slope is the score difference on the test associated with a one standard deviation change in the PISA SES scale.
Between-school variation is expressed as a fraction of average variation across all OECD countries.

Table 9.2 Study Characteristics

Study	Population	Sample	Sample Size and Response Rate	
			First Wave	Other Relevant Waves
U.S. BSS	First graders in Baltimore public schools in 1982	Twelve students selected at random from each classroom	First grade: 838 (97%)	Age 7/8: 545–667 (65–80%) Age 14/15: 412–668 (49–80%) Age 27/28: 660 (79%)
Finnish JYLS	Second grade classrooms in Jyväskylä, Finland, in 1968	All students in twelve randomly selected classrooms	Age 8: 369 (100%)	Age 14: 356 (96%) Age 27: 321 (87%) Age 36: 311 (85%) Age 42: 285 (79%) Age 50: 268 (75%)
Swedish IDA	All third grade students in Örebro, Sweden, in 1965	100% sampling rate	Third grade (age 10): 958 (93%)	Age 13: 90% Age 15: 87% Age 16: 83% Age 43 for females (84%); Age 48 for males (75%)

(Table continues on p. 218.)

Table 9.2 *Continued*

Study	Population	Sample	Sample Size and Response Rate	
			First Wave	Other Relevant Waves
British NCDS	British births in one March 1958 week	100% sampling rate	Birth: 17,416 (98%)	Age 7: 15,051 (86%) Age 16: 13,917 (80%) Age 33: 10,986 (63%) Age 42: 10,979 (63%) Age 46: 9,175 (53%)
British BCS	British births in one April 1970 week	100% sampling rate	Birth: 17,287 (97%)	Age 10: 14,350 (83%) Age 16: 11,206 (65%) Age 30: 10,833 (63%) Age 34: 9,316 (54%) Age 38: Release April/May 2010

Source: Authors' compilation based on data from U.S. BSS (Alexander and Entwisle 2003); JYLS (Pulkkinen 2006); IDA (Magnusson 1988); NCDS and BCS (Bynner et al. 2002).
Note: JYLS response rate excludes deceased study participants from the demoninators.

Table 9.3 Coefficients and Standard Errors from Separate Regressions of Child's Completed Schooling

	U.S. BSS	Finnish JYLS	Swedish IDA	British NCDS	British BCS	Simple Average
Regression 1: middle childhood (ages seven to ten)						
Reading	0.33	—	0.33*	0.48*	0.31*	0.36
	(0.18)		(0.09)	(0.02)	(0.07)	
Math	0.57*	—	0.39*	0.42*	0.51*	0.47
	(0.16)		(0.10)	(0.03)	(0.07)	
School success	—	0.74*	—	—	—	
		(0.16)				
Attention problems	–0.08	0.00	–0.09	–0.11*	–0.27*	–0.11
	(0.15)	(0.16)	(0.09)	(0.03)	(0.08)	
Antisocial	0.07	–0.21	–0.13	–0.24*	–0.06	–0.11
	(0.14)	(0.15)	(0.08)	(0.03)	(0.05)	
Prosocial	0.29	0.28	0.06	—	–0.10	0.13
	(0.16)	(0.17)	(0.07)		(0.06)	
Anxiety-internalizing	0.23	–0.10	–0.14*	—	0.02	0.00
	(0.15)	(0.16)	(0.06)		(0.06)	
R^2	0.34	0.33	0.32	0.24	0.26	
Regression 2: adolescent (ages thirteen to sixteen)						
Reading	–0.00	—	0.23	0.46*	0.43*	0.28
	(0.16)		(0.12)	(0.03)	(0.06)	
Math	1.18*	—	0.55*	0.81*	0.78*	0.83
	(0.16)		(0.12)	(0.03)	(0.05)	
School success	—	1.64*	—	—	—	
		(0.14)				
Attention problems	0.36*	0.10	–0.30*	–0.11*	–0.17*	–0.02
	(0.18)	(0.16)	(0.11)	(0.03)	(0.07)	
Antisocial	–0.48*	0.19	–0.02	–0.14*	–0.09	–0.11
	(0.19)	(0.14)	(0.11)	(0.03)	(0.07)	
Prosocial	0.28*	0.06	0.09	0.10*	—	0.13
	(0.12)	(0.13)	(0.06)	(0.03)		
Anxiety-internalizing	–0.11	0.13	–0.15*	–0.04	–0.01	–0.03
	(0.13)	(0.13)	(0.07)	(0.03)	(0.05)	
R^2	0.40	0.47	0.38	0.34	0.31	
Observations	838	356	1026	11979	3677/3629	

Source: Authors' calculations and data from U.S. BSS (Alexander and Entwisle 2003); JYLS (Pulkkinen 2006); IDA (Magnusson 1988); NCDS and BCS (Bynner et al. 2002).

Notes: Control variables in all regressions include child's sex, number of siblings, age when outcome was measured, race-ethnicity, and, where available, birth weight. Standard errors in parentheses.

*$p < .05$

Table 9.4 Coefficients and Standard Errors from Regressions of Child's Completed Schooling

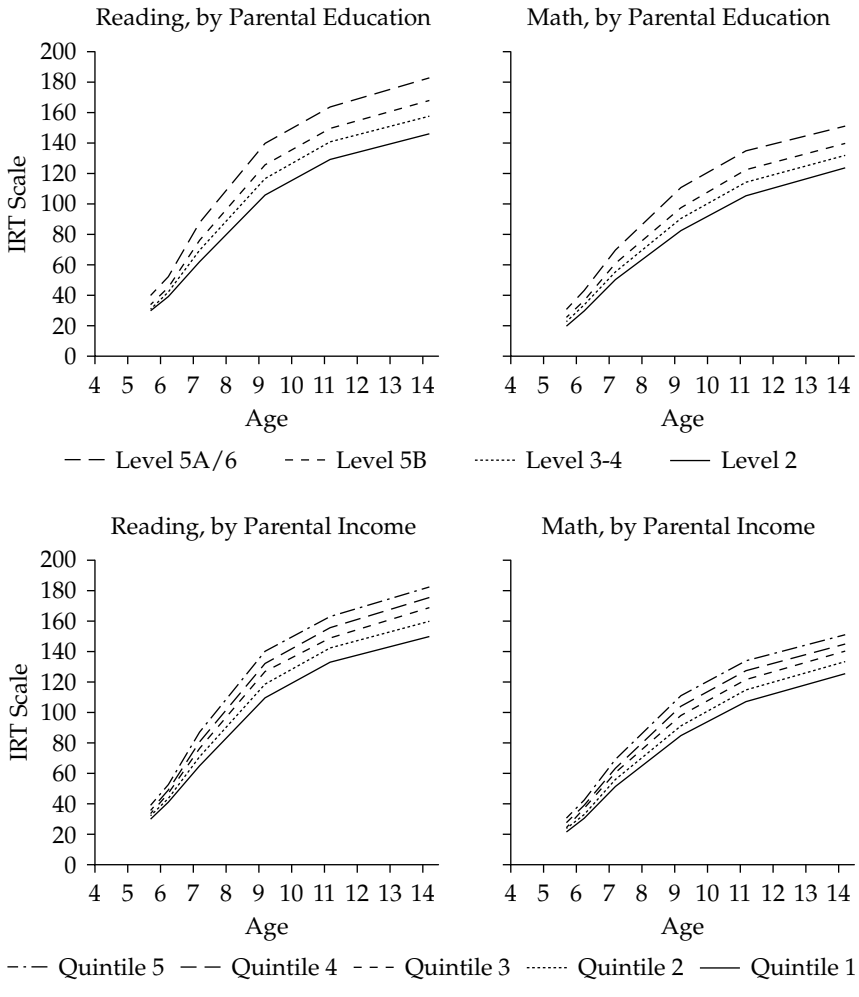
	U.S. BSS	Finnish JYLS	Swedish IDA	British NCDS	British BCS	Simple average
Middle childhood (ages seven to ten) skills-behaviors						
Reading	0.09	—	–0.08	0.17*	0.12	0.08
	(0.21)		(0.11)	(0.02)	(0.07)	
Math	0.01	—	0.01	0.18*	0.26*	0.12
	(0.16)		(0.15)	(0.02)	(0.06)	
School success	—	0.19	—	—	—	
		(0.15)				
Attention problems	–0.11	–0.01	0.09	–0.01	–0.14	–0.04
	(0.14)	(0.15)	(0.10)	(0.02)	(0.08)	
Antisocial	0.11	–0.02	–0.08	–0.12*	–0.02	–0.03
	(0.143	(0.14)	(0.08)	(0.03)	(0.05)	
Prosocial	0.17	0.34*	–0.04	—	–0.07	0.10
	(0.13)	(0.15)	(0.07)		(0.06)	
Anxiety-internalizing	0.20	–0.07	–0.08	—	0.00	0.01
	(0.15)	(0.14)	(0.08)		(0.06)	
Adolescent (ages thirteen to sixteen) skills-behaviors						
Reading	–0.07	—	0.29*	0.39*	0.35*	0.24
	(0.22)		(0.13)	(0.03)	(0.06)	
Math	1.11*	—	0.56*	0.70*	0.58*	0.74
	(0.17)		(0.16)	(0.03)	(0.05)	
School success	—	1.52*	—	—	—	
		(0.15)				
Attention problems	0.33*	0.05	–0.32*	–0.11*	–0.15*	–0.05
	(0.17)	(0.16)	(0.11)	(0.03)	(0.08)	
Antisocial	–0.44*	0.19	0.00	–0.14*	–0.09	–0.10
	(0.22)	(0.14)	(0.11)	(0.03)	(0.06)	
Prosocial	0.28*	–0.03	0.11	0.09*	—	0.11
	(0.12)	(0.13)	(0.07)	(0.03)		
Anxiety-internalizing	–0.14	0.23	–0.13	–0.03	–0.02	–0.02
	(0.15)	(0.13)	(0.08)	(0.03)	(0.05)	
R^2	0.41	0.49	0.38	0.35	0.33	
Observations	838	356	1026	11979	3629	

Source: Authors' calculations and data from U.S. BSS (Alexander and Entwisle 2003); JYLS (Pulkkinen 2006); IDA (Magnusson 1988); NCDS and BCS (Bynner et al. 2002).

Notes: Control variables in all regressions include child's sex, number of siblings, age when outcome was measured, and, where available, race/ethnicity and birth weight.

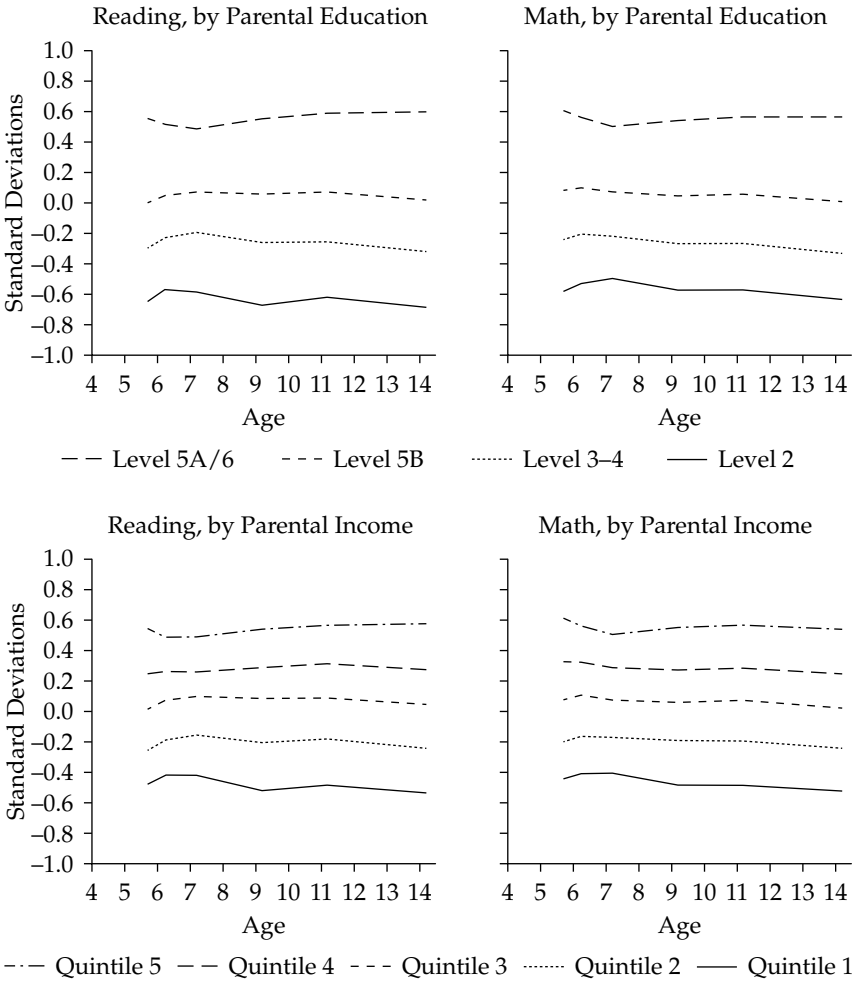
*$p < .05$

Figure 10.1 Mean U.S. Raw Scores



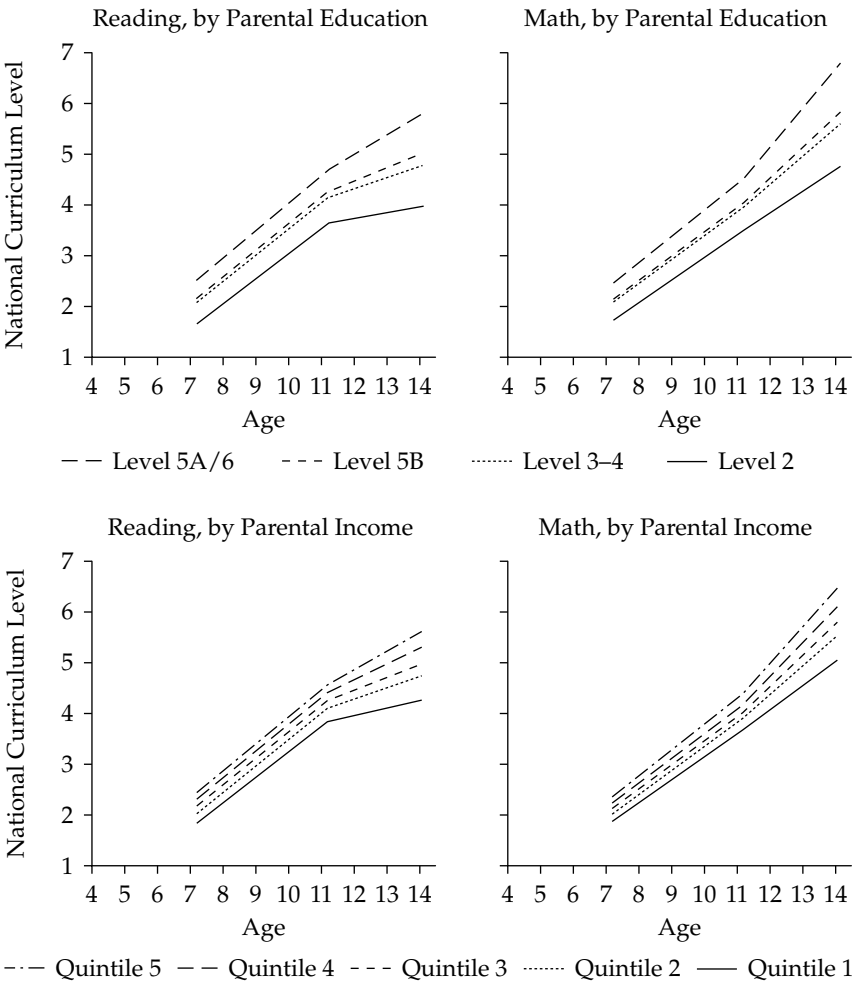
Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009).

Figure 10.2 Mean U.S. Standardized Scores



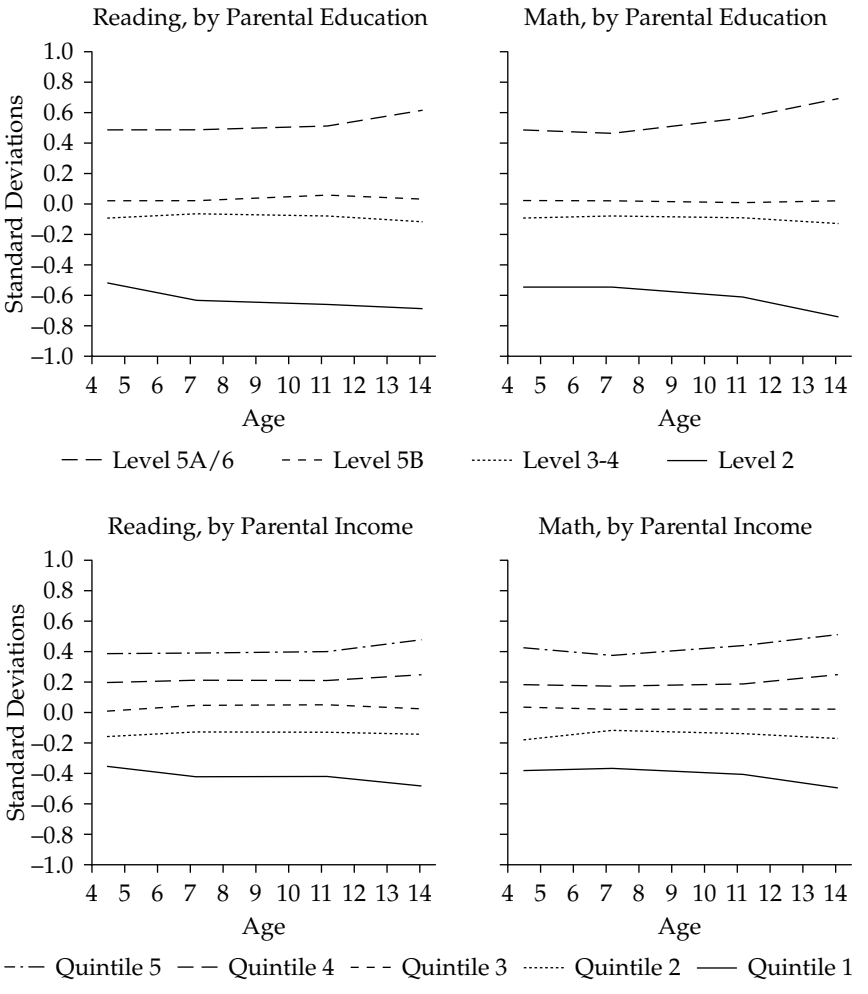
Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009).

Figure 10.3 Mean England Raw Scores



Source: Authors' calculations based on data from ALSPAC (University of Bristol 2009).

Figure 10.4 Mean England Standardized Scores



Source: Authors' calculations based on data from ALSPAC (University of Bristol 2009).

Table 10.1 Outcome Assessment in Context of Typical Compulsory Schooling System

Age at End of School Year	United States		England	
	Level-Grade	Date of Assessment	Level-Grade	Date of Assessment
	Preschool		**Primary school (infants)**	
Four to five	Prekindergarten*		Reception	EA: Fall 1998–1997 (4.5)
Five to six	Kindergarten*	Fall 1998 (5.7), Spring 1999 (6.2)	Year 1	
	Elementary school			
Six to seven	Grade 1	Spring 2000 (7.2)	Year 2	KS1: Spring 1998–2000 (7.2)
			Primary school (juniors)	
Seven to eight	Grade 2		Year 3	
Eight to nine	Grade 3	Spring 2002 (9.2)	Year 4	
Nine to ten	Grade 4		Year 5	
Ten to eleven	Grade 5	Spring 2004 (11.2)	Year 6	KS2: Spring 2002–2004 (11.2)
	Middle school		**Secondary school**	
Eleven to twelve	Grade 6		Year 7	
Twelve to thirteen	Grade 7		Year 8	
Thirteen to fourteen	Grade 8	Spring 2004 (14.2)	Year 9	KS3: Spring 2005–2007 (14.2)
	High school			
Fourteen to fifteen	Grade 9		Year 10	
Fifteen to sixteen	Grade 10		Year 11	

Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009) and ALSPAC (University of Bristol 2009).
*Prekindergarten is not compulsory in the United States, and kindergarten is compulsory only in some states, although nearly all age-eligible children attend kindergarten even in states where it is not mandatory.
EA = Entry Assessment; KS1 = Key Stage 1; KS2 = Key Stage 2; KS3 = Key Stage 3.

Table 10.2 U.S. Achievement Outcomes, Reading IRTs

Education	KF (5.7)	KS (6.2)	1S (7.2)	3S (9.2)	5S (11.2)	8S (14.2)
A. Parental Education						
Level 3	2.48**	3.36**	7.92**	11.27**	10.79**	12.36**
	(0.33)	(0.46)	(0.80)	(0.89)	(0.89)	(0.89)
Level 5B	4.93**	6.61**	13.98**	20.24**	19.73**	22.35**
	(0.33)	(0.45)	(0.80)	(0.89)	(0.93)	(1.02)
Level 5A6	10.15**	13.08**	25.71**	35.19**	33.50**	36.99**
	(0.33)	(0.45)	(0.79)	(0.89)	(0.97)	(0.98)
Constant	29.71**	39.30**	62.81**	105.98**	129.76**	145.81**
	(0.29)	(0.41)	(0.72)	(0.81)	(0.86)	(0.87)
Observations	15654	15654	15654	15654	15654	15654
R^2	0.12	0.10	0.12	0.16	0.16	0.17
B. Family Income						
Quintile 2	1.68**	2.41**	5.40**	8.57**	8.57**	9.76**
	(0.28)	(0.38)	(0.67)	(0.87)	(0.95)	(0.90)
Quintile 3	3.79**	5.34**	11.45**	16.66**	16.10**	18.90**
	(0.26)	(0.35)	(0.62)	(0.72)	(0.71)	(0.75)
Quintile 4	5.95**	7.60**	15.30**	22.80**	22.21**	25.27**
	(0.26)	(0.36)	(0.60)	(0.74)	(0.77)	(0.74)
Quintile 5	8.93**	11.15**	21.85**	30.36**	28.89**	32.27**
	(0.27)	(0.36)	(0.64)	(0.71)	(0.79)	(0.77)
Constant	30.92**	40.95**	66.33**	110.36**	133.88**	150.12**
	(0.20)	(0.27)	(0.47)	(0.57)	(0.59)	(0.62)
Observations	15654	15654	15654	15654	15654	15654
R^2	0.10	0.08	0.10	0.14	0.14	0.16

Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009).

Notes: Standard errors in parentheses. Reference groups are level 2 for parental education, quintile 1 for income. KS = kindergarten spring; 1S = first grade spring; 3S = third grade spring; 5S = fifth grade spring; 8S = eighth grade spring.

**$p < 0.01$, *$p < 0.05$

Table 10.3 U.S. Achievement Outcomes, Math IRTs

	KF (5.7)	KS (6.2)	1S (7.2)	3S (9.2)	5S (11.2)	8S (14.2)
A. Parental Education						
Level 3	2.53**	3.40**	4.86**	7.74**	8.16**	8.12**
	(0.29)	(0.39)	(0.59)	(0.86)	(0.84)	(0.90)
Level 5B	5.08**	6.67**	9.85**	15.46**	16.63**	16.11**
	(0.28)	(0.38)	(0.57)	(0.79)	(0.80)	(0.77)
Level 5A6	10.16**	12.85**	18.84**	28.25**	29.12**	27.46**
	(0.28)	(0.38)	(0.58)	(0.82)	(0.85)	(0.90)
Constant	20.86**	29.67**	51.23**	82.67**	105.92**	123.70**
	(0.26)	(0.35)	(0.53)	(0.75)	(0.77)	(0.79)
Observations	15648	15648	15648	15648	15648	15648
R^2	0.14	0.13	0.12	0.14	0.15	0.16
B. Family Income						
Quintile 2	1.91**	2.57**	4.13**	7.25**	7.95**	7.42**
	(0.25)	(0.33)	(0.51)	(0.75)	(0.73)	(0.84)
Quintile 3	4.12**	5.60**	8.53**	13.54**	14.86**	13.89**
	(0.23)	(0.30)	(0.46)	(0.62)	(0.68)	(0.60)
Quintile 4	6.26**	8.22**	12.50**	18.83**	20.05**	18.93**
	(0.22)	(0.30)	(0.47)	(0.64)	(0.67)	(0.63)
Quintile 5	9.29**	11.45**	17.17**	25.92**	26.91**	24.69**
	(0.23)	(0.29)	(0.45)	(0.63)	(0.69)	(0.66)
Constant	21.87**	30.98**	52.82**	85.01**	108.16**	126.26**
	(0.17)	(0.23)	(0.35)	(0.49)	(0.55)	(0.53)
Observations	15648	15648	15648	15648	15648	15648
R^2	0.13	0.11	0.11	0.13	0.13	0.14

Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009).

Notes: Standard errors in parentheses. Reference groups are level 2 for parental education, quintile 1 for income. KS = kindergarten spring; 1S = first grade spring; 3S = third grade spring; 5S = fifth grade spring; 8S = eighth grade spring.

**$p < 0.01$, *$p < 0.05$

Table 10.4 U.S. Achievement Outcomes, Reading *T*-Scores

Education	KF (5.7)	KS (6.2)	1S (7.2)	3S (9.2)	5S (11.2)	8S (14.2)
A. Parental Education						
Level 3	0.35**	0.34**	0.39**	0.41**	0.36**	0.36**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Level 5B	0.64**	0.62**	0.66**	0.72**	0.69**	0.70**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Level 5A6	1.20**	1.08**	1.08**	1.22**	1.21**	1.28**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Constant	–0.64**	–0.56**	–0.58**	–0.66**	–0.62**	–0.68**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	15654	15654	15654	15654	15654	15654
R^2	0.15	0.12	0.12	0.15	0.16	0.18
B. Family Income						
Quintile 2	0.22**	0.23**	0.27**	0.32**	0.30**	0.29**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Quintile 3	0.49**	0.49**	0.52**	0.60**	0.57**	0.58**
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Quintile 4	0.73**	0.67**	0.68**	0.81**	0.79**	0.81**
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Quintile 5	1.04**	0.91**	0.91**	1.06**	1.05**	1.12**
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Constant	–0.48**	–0.41**	–0.42**	–0.51**	–0.48**	–0.53**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Observations	15654	15654	15654	15654	15654	15654
R^2	0.13	0.10	0.11	0.14	0.14	0.15

Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009).

Notes: Standard errors in parentheses. *T*-scores have 0 means and 1 standard deviation. Reference groups are level 2 for education and quintile 1 for income. KS = kindergarten spring; 1S = first grade spring; 3S = third grade spring; 5S = fifth grade spring; 8S = eighth grade spring.

**$p < 0.01$, *$p < 0.05$

Table 10.5 U.S. Achievement Outcomes, Math *T*-Scores

	KF (5.7)	KS (6.2)	1S (7.2)	3S (9.2)	5S (11.2)	8S (14.2)
A. Parental Education						
Level 3	0.35**	0.33**	0.28**	0.31**	0.30**	0.30**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Level 5B	0.67**	0.63**	0.57**	0.62**	0.63**	0.65**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Level 5A6	1.19**	1.11**	0.99**	1.12**	1.14**	1.20**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Constant	–0.58**	–0.53**	–0.49**	–0.57**	–0.57**	–0.63**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	15648	15648	15648	15648	15648	15648
R^2	0.15	0.14	0.12	0.14	0.15	0.17
B. Family Income						
Quintile 2	0.25**	0.24**	0.24**	0.29**	0.29**	0.28**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Quintile 3	0.52**	0.52**	0.48**	0.54**	0.55**	0.54**
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
Quintile 4	0.77**	0.74**	0.69**	0.76**	0.76**	0.77**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)
Quintile 5	1.06**	0.97**	0.91**	1.03**	1.05**	1.06**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)
Constant	–0.44**	–0.40**	–0.40**	–0.48**	–0.48**	–0.52**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Observations	15648	15648	15648	15648	15648	15648
R^2	0.14	0.12	0.11	0.13	0.14	0.14

Source: Authors' calculations based on data from ECLS-K (U.S. Department of Education 2009).

Notes: Standard errors in parentheses. *T*-scores have 0 means and 1 standard deviation. Reference groups are level 2 for education and quintile 1 for income. KS = kindergarten spring; 1S = first grade spring; 3S = third grade spring; 5S = fifth grade spring; 8S = eighth grade spring.

**$p < 0.01$, *$p < 0.05$

Table 10.6 England Achievement Outcomes, Reading Raw Variables

	EA (4.5)	KS1 (7.2)	KS2 (11.2)	KS3 (14.1)
A. Parental Education				
Level 3		0.43**	0.50**	0.81**
		(0.03)	(0.03)	(0.07)
Level 5B		0.50**	0.62**	1.03**
		(0.03)	(0.03)	(0.06)
Level 5A6		0.85**	1.01**	1.85**
		(0.04)	(0.03)	(0.06)
Constant		1.67**	3.66**	3.99**
		(0.03)	(0.03)	(0.06)
Observations		12,986	12,986	12,986
R^2		0.10	0.10	0.13
B. Family Income				
Quintile 2		0.22**	0.26**	0.48**
		(0.02)	(0.03)	(0.06)
Quintile 3		0.36**	0.40**	0.72**
		(0.03)	(0.03)	(0.05)
Quintile 4		0.49**	0.55**	1.04**
		(0.02)	(0.03)	(0.05)
Quintile 5		0.62**	0.71**	1.35**
		(0.03)	(0.03)	(0.06)
Constant		1.82**	3.87**	4.27**
		(0.02)	(0.02)	(0.04)
Observations		12,986	12,986	12,986
R^2		0.08	0.08	0.10

Source: Authors' calculations based on data from ALSPAC (University of Bristol 2009).

Notes: Standard errors in parentheses. Reference groups are level 2 for education and quintile 1 for income. EA = **Entry Assessment;** KS1 = Key Stage 1; KS2 = Key Stage 2; KS3 = Key Stage 3.

$^{**}p < 0.01$, $^{*}p < 0.05$

Table 10.7 England Achievement Outcomes, Math Raw Variables

	EA (4.5)	KS1 (7.2)	KS2 (11.2)	KS3 (14.1)
A. Parental Education				
Level 3		0.32**	0.45**	0.86**
		(0.03)	(0.03)	(0.05)
Level 5B		0.40**	0.54**	1.07**
		(0.03)	(0.03)	(0.05)
Level 5A6		0.70**	1.00**	2.02**
		(0.03)	(0.03)	(0.05)
Constant		1.74**	3.51**	4.75**
		(0.02)	(0.03)	(0.04)
Observations		12,986	12,986	12,986
R^2		0.08	0.10	0.16
B. Family Income				
Quintile 2		0.17**	0.23**	0.46**
		(0.03)	(0.04)	(0.06)
Quintile 3		0.26**	0.37**	0.74**
		(0.02)	(0.03)	(0.05)
Quintile 4		0.37**	0.51**	1.05**
		(0.02)	(0.03)	(0.05)
Quintile 5		0.51**	0.72**	1.44**
		(0.03)	(0.03)	(0.05)
Constant		1.87**	3.69**	5.08**
		(0.02)	(0.02)	(0.04)
Observations		12,986	12,986	12,986
R^2		0.06	0.08	0.12

Source: Authors' calculations based on data from ASLPAC (University of Bristol 2009).
Notes: Standard errors in parentheses. Reference groups are level 2 for education and quintile 1 for income. EA = Entry Assessment; KS1 = Key Stage 1; KS2 = Key Stage 2; KS3 = Key Stage 3.
$^{**}p < 0.01$, $^{*}p < 0.05$

Table 10.8 England Achievement Outcomes, Reading Standardized Variables

	EA (4.5)	KS1 (7.2)	KS2 (11.2)	KS3 (14.1)
A. Parental Education				
Level 3	0.43**	0.56**	0.58**	0.57**
	(0.04)	(0.04)	(0.03)	(0.05)
Level 5B	0.54**	0.66**	0.72**	0.72**
	(0.04)	(0.04)	(0.04)	(0.05)
Level 5A6	1.01**	1.12**	1.18**	1.30**
	(0.04)	(0.05)	(0.04)	(0.04)
Constant	–0.51**	–0.63**	–0.66**	–0.68**
	(0.04)	(0.04)	(0.03)	(0.04)
Observations	12,986	12,986	12,986	12,986
R^2	0.08	0.10	0.10	0.13
B. Family Income				
Quintile 2	0.20**	0.29**	0.30**	0.34**
	(0.05)	(0.03)	(0.04)	(0.04)
Quintile 3	0.36**	0.47**	0.47**	0.51**
	(0.03)	(0.03)	(0.03)	(0.03)
Quintile 4	0.55**	0.64**	0.64**	0.73**
	(0.05)	(0.03)	(0.04)	(0.03)
Quintile 5	0.74**	0.82**	0.83**	0.95**
	(0.05)	(0.04)	(0.03)	(0.04)
Constant	–0.35**	–0.42**	–0.42**	–0.48**
	(0.03)	(0.02)	(0.02)	(0.03)
Observations	12,986	12,986	12,986	12,986
R^2	0.06	0.08	0.08	0.10

Source: Authors' calculations based on data from ALSPAC (University of Bristol 2009).

Notes: Standard errors in parentheses. Standardized scores have mean 0 and 1 standard deviation. Reference groups are level 2 for education and quintile 1 for income. EA = Entry Assessment; KS1 = Key Stage 1; KS2 = Key Stage 2; KS3 = Key Stage 3.

**$p < 0.01$, *$p < 0.05$

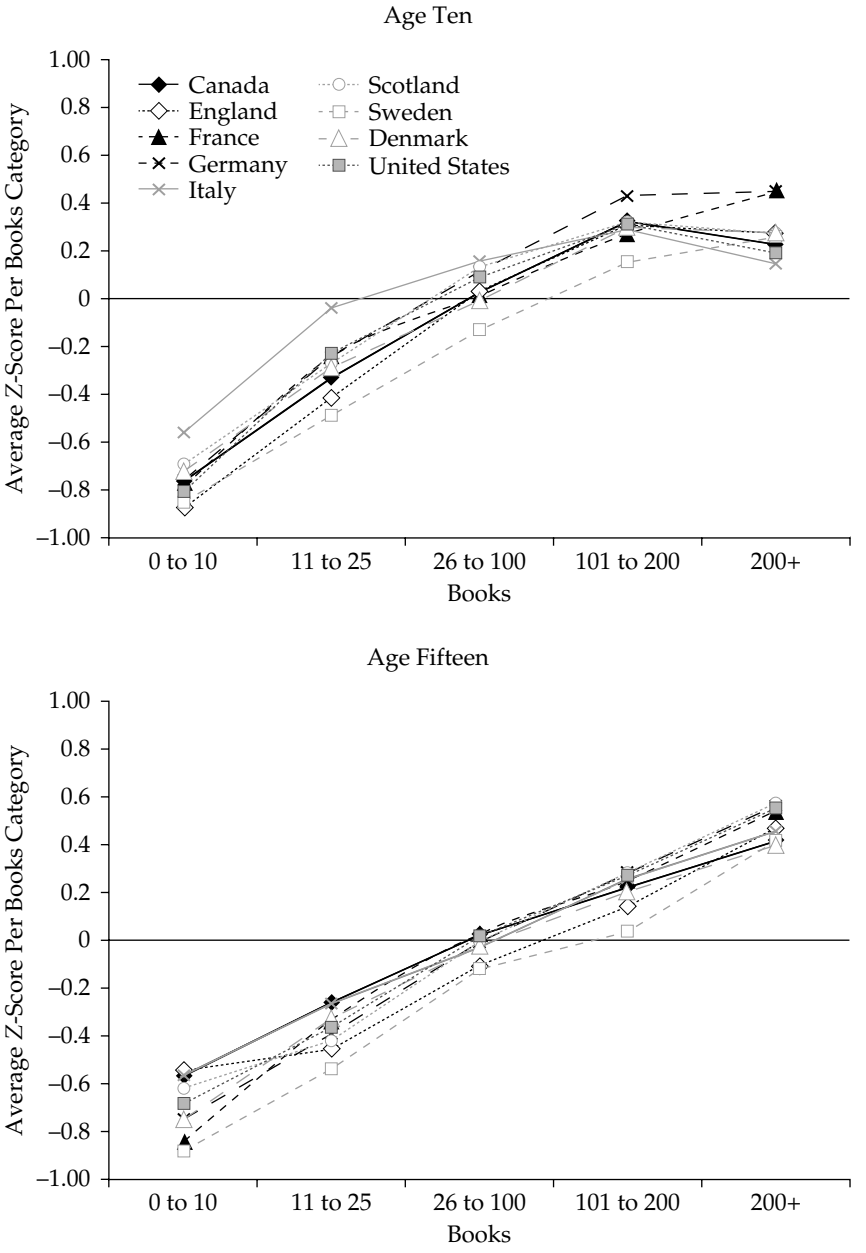
Table 10.9 England Achievement Outcomes, Math Standardized Variables

	EA (4.5)	KS1 (7.2)	KS2 (11.2)	KS3 (14.1)
A. Parental Education				
Level 3	0.46**	0.47**	0.52**	0.61**
	(0.04)	(0.04)	(0.04)	(0.04)
Level 5B	0.56**	0.58**	0.63**	0.75**
	(0.04)	(0.04)	(0.04)	(0.04)
Level 5A6	1.03**	1.02**	1.18**	1.42**
	(0.05)	(0.04)	(0.04)	(0.04)
Constant	–0.54**	–0.55**	–0.61**	–0.73**
	(0.04)	(0.03)	(0.03)	(0.03)
Observations	12,986	12,986	12,986	12,986
R^2	0.09	0.08	0.11	0.16
B. Family Income				
Quintile 2	0.20**	0.25**	0.27**	0.33**
	(0.04)	(0.04)	(0.04)	(0.04)
Quintile 3	0.41**	0.38**	0.43**	0.52**
	(0.03)	(0.03)	(0.03)	(0.04)
Quintile 4	0.57**	0.54**	0.60**	0.74**
	(0.04)	(0.03)	(0.03)	(0.03)
Quintile 5	0.80**	0.74**	0.84**	1.02**
	(0.04)	(0.04)	(0.03)	(0.04)
Constant	–0.37**	–0.36**	–0.40**	–0.49**
	(0.02)	(0.02)	(0.02)	(0.03)
Observations	12,986	12,986	12,986	12,986
R^2	0.07	0.06	0.08	0.12

Source: Authors' calculations based on data from ALSPAC (University of Bristol 2009).

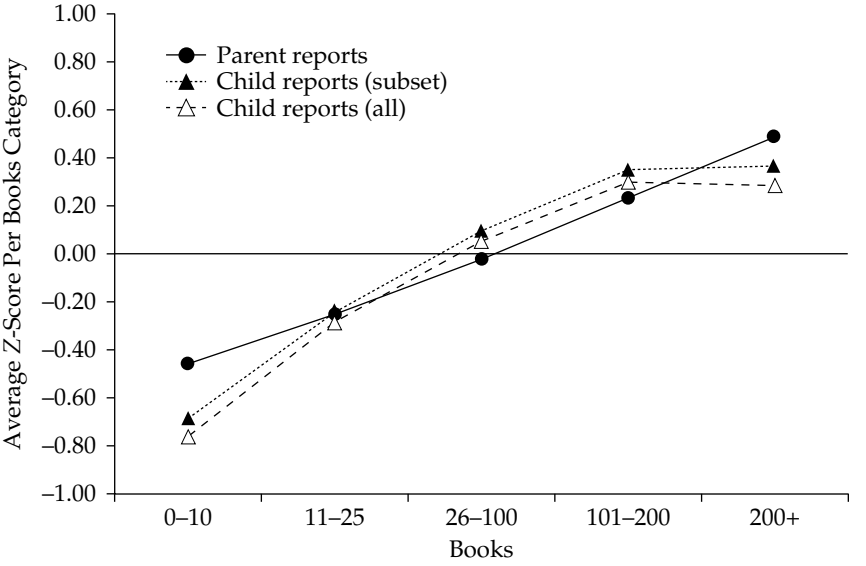
Notes: Standard errors in parentheses. Standardized scores have mean 0 and 1 standard deviation. Reference groups are level 2 for education and quintile 1 for income. EA = Entry Assessment; KS1 = Key Stage 1; KS2 = Key Stage 2; KS3 = Key Stage 3.
**$p < 0.01$, *$p < 0.05$

Figure 11.1 Average Reading Ability by Categories of Books in Home Reported by Child



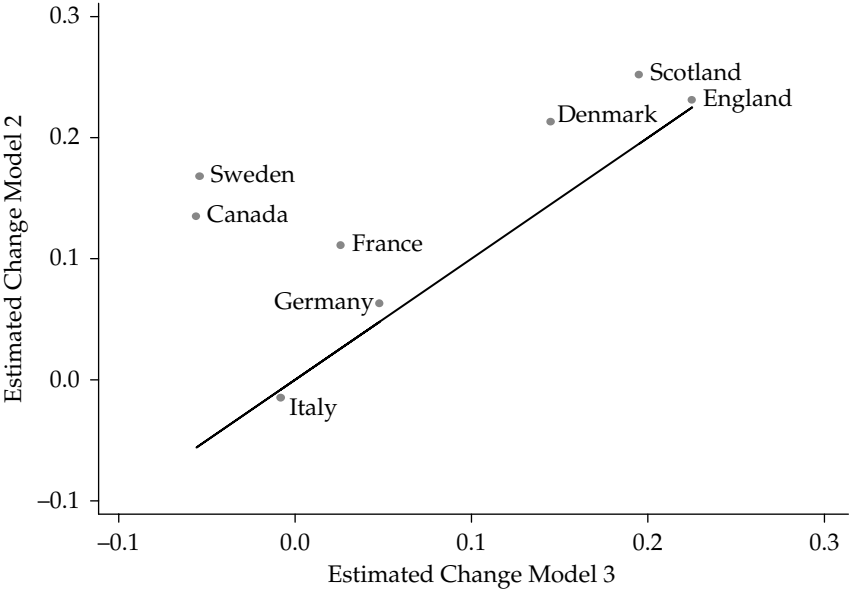
Source: Authors' calculations based on data from the Programme for International Student Assessment 2003 (OECD 2005) and the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Note: Reading ability measured in national *z*-scores.

Figure 11.2 **Average Reading Ability at Age Ten by Categories of Books in Home**



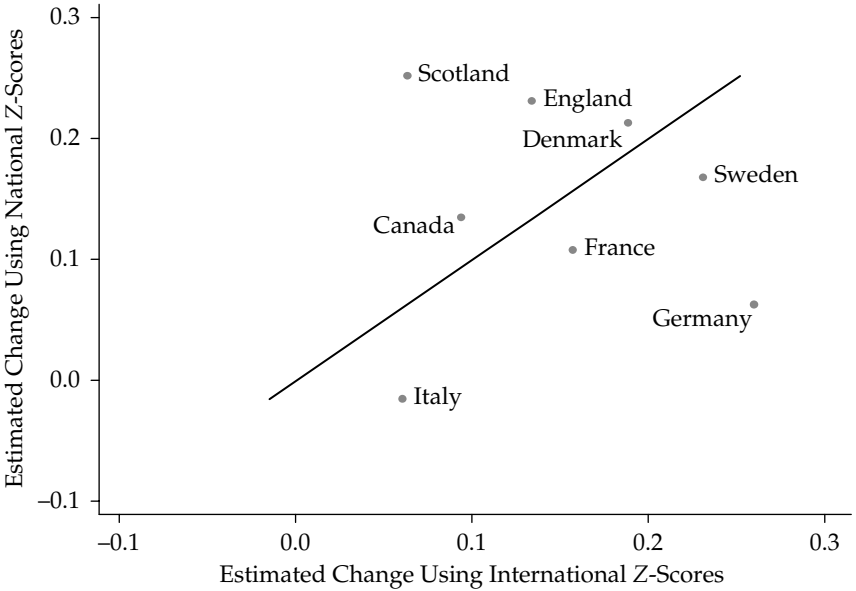
Source: Authors' calculations based on data from the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Notes: Reading ability is measured in national *z*-scores. Unweighted averages of figures for each country excluding the United States. The solid line for children refers to those children with parents who also report books at home. The dotted line refers to all children including those with no data on books at home reported by the parents.

Figure 11.3 How Inclusion of Parental Education Alters Results



Source: Authors' calculations based on data from the Programme for International Student Assessment 2003 (OECD 2005) and the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Note: The graph plots the Change in Difference figures from table 11.2 and table 11.3 on the vertical and horizontal axis respectively.

Figure 11.4 How Switch in Reading Score Metric Alters Results



Source: Authors' calculations based on data from the Programme for International Student Assessment 2003 (OECD 2005) and the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Notes: The graph plots the change in difference figures from table 11.2 on the vertical axis. These figures are based on model 2 and use reading scores measured in national *z*-scores. The horizontal axis provides analogous results in terms of international *z*-scores. The 45 degree line shows where there is no difference in results.

Table 11.1 Differences in Predicted Reading Ability for Eleven to Twenty-Five and More than 200 Books in Home

	Age Ten		Age Fifteen		Change in Difference	
Country	Difference	S.E.	Difference	S.E.	Amount	S.E.
Canada	0.575	0.062	0.691	0.065	0.116	0.090
Denmark	0.519	0.067	0.729	0.056	0.210	0.088
Germany	0.656	0.047	0.867	0.054	0.211	0.072
Sweden	0.631	0.058	0.849	0.064	0.218	0.086
England	0.703	0.056	0.929	0.066	0.225	0.087
France	0.599	0.056	0.841	0.063	0.242	0.085
Scotland	0.594	0.073	0.970	0.058	0.377	0.093
United States	0.412	0.075	0.870	0.051	0.459	0.091
Italy	0.208	0.067	0.675	0.069	0.467	0.096
Average	0.544		0.825		0.281	

Source: Authors' calculations based on data from the Programme for International Student Assessment 2003 (OECD 2005) and the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Note: S.E. stands for the standard error of the difference. Results are based on an OLS regression using dummy variables indicating the number of books in the home. The specification is described in more detail in the text (model 1). Reading ability is measured in national *z*-scores. Books are reported by children at both ages.

Table 11.2 Predicted Reading Ability on Increase in Books in Home

	Age Ten		Age Fifteen		Change in Difference	
Country	Difference	S.E.	Difference	S.E.	Amount	S.E.
Italy	0.741	0.048	0.726	0.057	–0.015	0.072
Germany	0.774	0.039	0.837	0.045	0.063	0.057
France	0.777	0.048	0.885	0.051	0.111	0.069
Canada	0.555	0.051	0.690	0.048	0.135	0.069
Sweden	0.618	0.057	0.786	0.039	0.168	0.069
Denmark	0.558	0.045	0.771	0.045	0.213	0.063
England	0.606	0.069	0.837	0.051	0.231	0.087
Scotland	0.672	0.069	0.924	0.042	0.252	0.078
United States	—	—	0.854	0.013	—	—
Average	0.663		0.807		0.145	

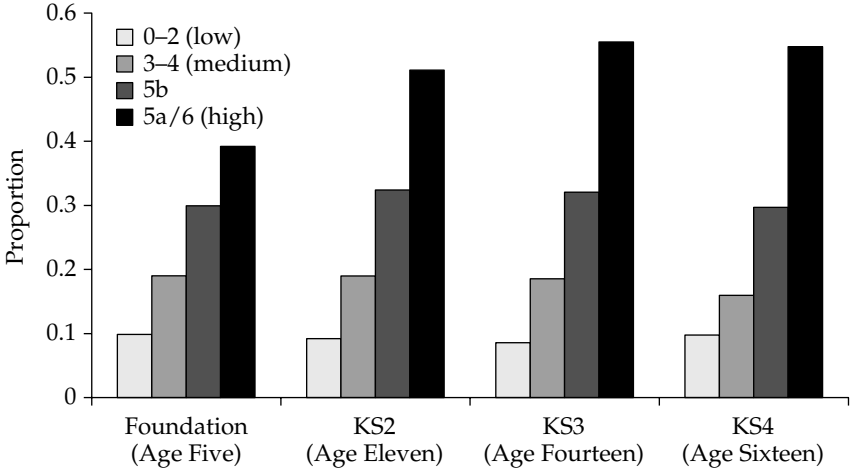
Source: Authors' calculations based on data from the Programme for International Student Assessment 2003 (OECD 2005) and the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Note: The average at age fifteen does not include the difference for the United States. S.E. stands for the standard error of the difference. Results based on an OLS regression using a continuous variable with five values indicating numbers of books in the home. The specification is described in more detail in the text (model 2). Reading ability is measured in national *z*-scores. Books reported by parents at age ten and children at age fifteen.

Table 11.3 Predicted Reading Ability on Increase in Books and Change in Parent Education

	Age Ten		Age Fifteen		Change in Difference	
Country	Difference	S.E.	Difference	S.E.	Amount	S.E.
Canada	0.863	0.057	0.807	0.055	–0.056	0.079
Sweden	0.845	0.062	0.791	0.047	–0.054	0.078
Italy	0.927	0.056	0.919	0.070	–0.008	0.089
France	0.977	0.054	1.003	0.061	0.026	0.081
Germany	0.950	0.048	0.998	0.050	0.048	0.069
Denmark	0.762	0.061	0.907	0.056	0.145	0.083
Scotland	0.860	0.084	1.055	0.053	0.195	0.100
England	0.860	0.087	1.085	0.057	0.225	0.104
United States	—	—	0.999	0.046	—	—
Average	0.881		0.946		0.065	

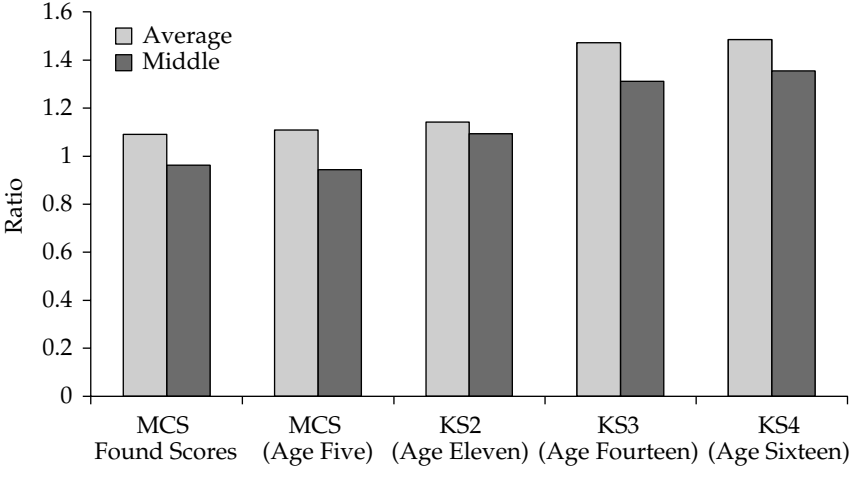
Source: Authors' calculations based on data from the Programme for International Student Assessment 2003 (OECD 2005) and the Progress in International Reading Literacy Study 2001 (Mullis et al. 2003).
Note: The average at age fifteen does not include the difference for the United States. S.E. stands for the standard error of this difference. Results based on an OLS regression using a continuous variable with five values indicating numbers of books in the home and a dummy variable for at least one parent having college or university education. The specification is described in more detail in the text (model 3). Reading ability is measured in national *z*-scores. Books reported by parents at age ten and children at age fifteen.

Figure 12.1 **Proportion of Children in Top Quartile of Test Score Distribution by Parents' Highest Education**



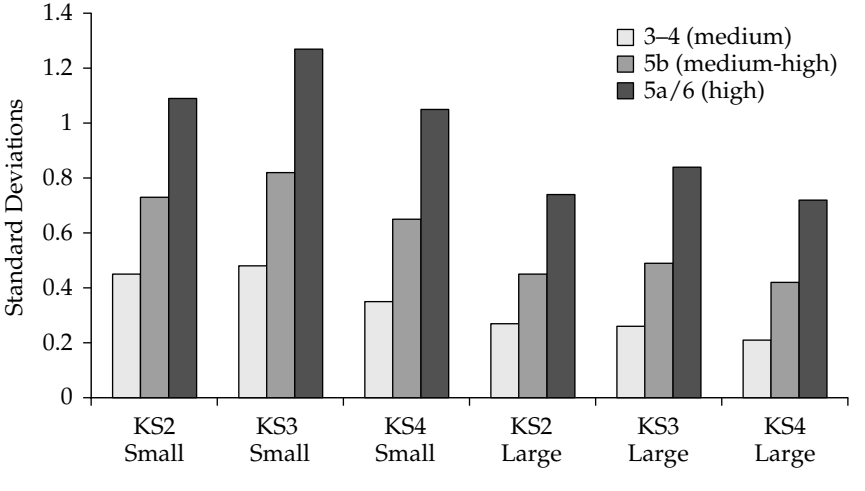
Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).

Figure 12.2 Log-Odds Ratio Associated with Parents' Highest Education



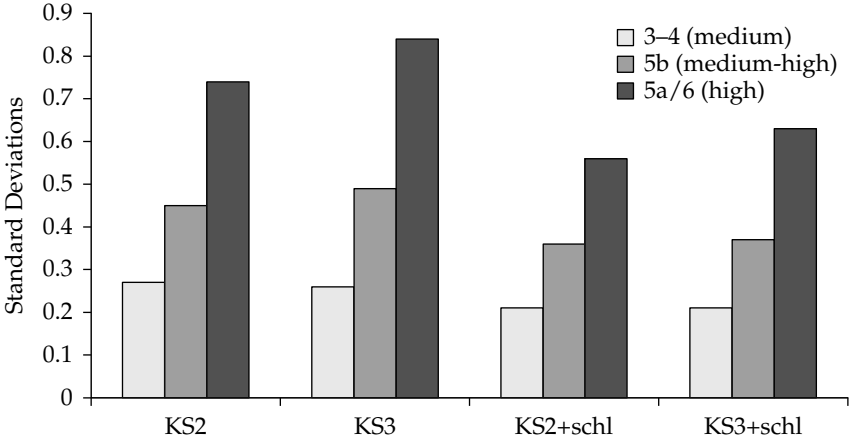
Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).

Figure 12.3 Parents' Education Gradients Relative to Lowest Education Group



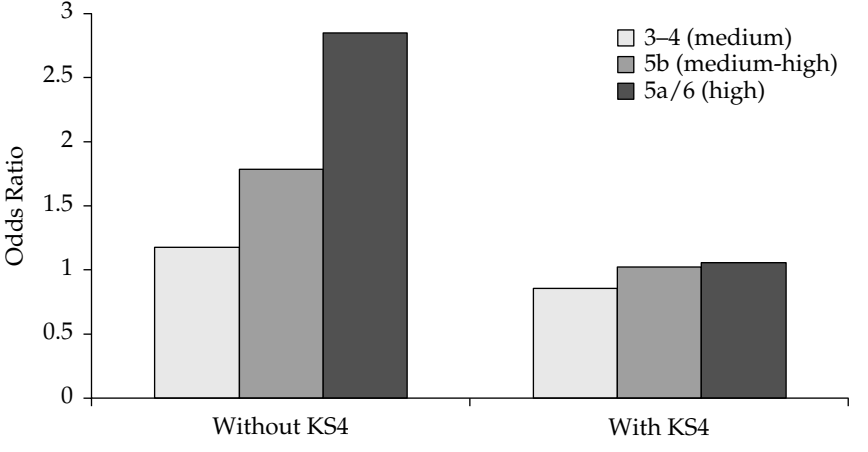
Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).

Figure 12.4 Parents' Education Gradient Relative to Lowest Education Group



Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).

Figure 12.5 **Parents' Education Gradient, Odds of Attending University at Age Nineteen Relative to Lowest Education Group**



Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).

Table 12.1 Distribution of Parents' Highest Education, Child Age About Fourteen

Parent's Highest ISCED	Percentage*
0–2 (low)	15.6
3–4 (medium)	52.9
5b (medium-high)	15.7
5a/6 (high)	15.8
Total unweighted N	14,319

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).
*Using sample weights; weighted N = 13,944.

Table 12.2 Key Stage 3 Results, Child Age About Fourteen

Parent's Highest ISCED	Q1 Versus Q2–4	Q1–2 Versus Q3–4	Q1–3 Versus Q4
A. Odds ratios			
ISCED 3–6 versus ISCED 0–2	3.653	3.694	4.139
ISCED 5–6 versus ISCED 0–4	4.033	3.715	4.020
ISCED 5a/6 versus ISCED 0–5b	6.003	5.341	5.249
B. Log-odds ratios			
ISCED 3–6 versus ISCED 0–2	1.295	1.307	1.420
ISCED 5–6 versus ISCED 0–4	1.395	1.312	1.391
ISCED 5a/6 versus ISCED 0–5b	1.792	1.675	1.658

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).

Table 12.3 Weighted Distribution of Parents' Highest Education, Percentages

Parent's Highest ISCED	England[a]	Germany[b]	Australia[c]	United States[d]	Canada[c]	France[e,f]	Sweden[g]
0–2 (low)	15.6	8.5	11.7	14.7	7.4	32.4	17.9
3–4 (medium)	52.9	56.6	32.3	46.1	31.1	46.2	64.3
5b (medium-high)	15.7	9.0	15.0	8.0	33.2	8.9	
5a/6 (high)	15.8	25.9	41.0	31.2	28.4	12.5	17.8
Total unweighted N	14,319	659	9,573	1,585	13,785	8,743	99,888

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).
[a]Age fourteen
[b]Age seventeen
[c]Age fifteen
[d]Age thirteen to sixteen
[e]Age eleven
[f]Unweighted data
[g]Age sixteen, levels 5a and 5b combined

Table 12.4 Log-Odds Ratio for Middle Ratio

	Australia	England	Germany	United States	Canada	France	Sweden
Log-odds ratio	0.759	1.312	1.157	1.524	0.830	1.360	1.338
Standard error	0.042	0.039	0.171	0.111	0.036	0.067	0.014
Difference in log-odds versus England	–0.553	0.000	–0.156	0.212	–0.482	0.048	0.025
Standard error of difference	0.057		0.176	0.118	0.053	0.078	0.042
T-statistic for difference	–9.62		–0.89	1.80	–9.06	0.61	0.60

Source: Authors' calculations based on data from other chapters, this volume.

Table 12.5 Changes in Key Stage Quartiles

Quartile, Previous Stage	Q1 Next Stage	Q2 Next Stage	Q3 Next Stage	Q4 Next Stage
A. Between KS2 and 3 results (ages eleven to fourteen)				
Q1	0.783	0.207	0.009	0
Q2	0.184	0.550	0.252	0.013
Q3	0.029	0.225	0.542	0.204
Q4	0.002	0.023	0.193	0.783
B. Between KS3 and 4 results (ages fourteen to sixteen)				
Q1	0.765	0.206	0.027	0.003
Q2	0.219	0.534	0.227	0.019
Q3	0.034	0.264	0.502	0.201
Q4	0.009	0.018	0.208	0.764

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).
Notes: Panel A: unweighted N = 13,725, weighted N = 13,476. Panel B: unweighted N = 14,073, weighted N = 13,652.

Table 12.6 Dynamic Regressions

Parent's Highest ISCED	KS3 Coefficient	KS4 Coefficient
3–4 (medium)	0.06 (0.01)	–0.04 (0.01)
5b (medium-high)	0.18 (0.01)	0.00 (0.02)
5a/6 (high)	0.33 (0.01)	0.04 (0.02)
Female	0.05 (0.01)	0.16 (0.01)
Lagged standardized KS score	0.835 (0.004)	0.797 (0.005)
N	13725	14319
R^2	0.795	0.659

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).
Note: Standard errors in parentheses.

Table 12.7 Regression for Standardized Key Stage Results

	KS2 (Age Eleven) Coefficient	KS3 (Age Fourteen) Coefficient	KS4 (Age Sixteen) Coefficient
Parent's highest education			
ISCED 0–2 (low)	Ref.	Ref.	Ref.
ISCED 3–4 (medium)	0.348 (0.030)	0.330 (0.027)	0.339 (0.030)
ISCED 5b (medium-high)	0.544 (0.035)	0.584 (0.033)	0.579 (0.035)
ISCED 5a/6 (high)	0.849 (0.034)	0.964 (0.033)	0.902 (0.034)
Girl	0.090 (0.017)	0.134 (0.017)	0.245 (0.017)
Single-parent household (age 14)	0.002 (0.025)	–0.041 (0.023)	–0.189 (0.025)
First-born child	0.145 (0.027)	0.166 (0.025)	0.160 (0.026)
Number of older siblings (age fourteen)	–0.091 (0.012)	–0.103 (0.011)	–0.108 (0.013)
Number of younger siblings (age fourteen)	–0.028 (0.010)	–0.024 (0.009)	–0.021 (0.010)
Mother's age at child's birth			
Under twenty	Ref.	Ref.	Ref.
Twenty to twenty-four	0.200 (0.042)	0.211 (0.037)	0.280 (0.041)
Twenty-five to twenty-nine	0.380 (0.042)	0.424 (0.038)	0.519 (0.041)
Thirty to thirty-four	0.479 (0.045)	0.562 (0.041)	0.656 (0.044)
Thirty-five or older	0.582 (0.051)	0.692 (0.047)	0.787 (0.050)
Child's birth weight	0.135 (0.016)	0.124 (0.015)	0.076 (0.015)
Mother single parent at birth	–0.132 (0.025)	–0.168 (0.024)	–0.228 (0.026)
Child went to nursery school	0.100 (0.024)	0.123 (0.023)	0.104 (0.025)
Number of schools attended (by age fourteen)	–0.063 (0.012)	–0.036 (0.011)	–0.089 (0.012)
Household income quartile (age fourteen)			
Bottom	Ref.	Ref.	Ref.
Second quartile	0.071 (0.028)	0.077 (0.026)	0.097 (0.028)
Third quartile	0.145 (0.029)	0.144 (0.028)	0.137 (0.030)
Top quartile	0.291 (0.0030)	0.356 (0.0030)	0.303 (0.029)
Unweighted N	14,090	14,319	14,803
R^2	0.201	0.264	0.275

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).
Notes: Robust standard errors in parentheses.
*Using sample weights from wave 1 (age fourteen). Equations also contain dichotomous variables for missing values on each of the variables other than parents' highest education and sex.

Table 12.8 School Effects: Orthogonal Decomposition

	Controls		
	Sex	Sex and Parents' Highest Education	All Family Factors and Covariates*
A. Proportion of residual variance attributable to schools			
Key stage 2	0.247	0.183	0.158
Key stage 3	0.318	0.217	0.134
B. School variances			
KS2: between school variance	0.251	0.162	0.130
Percentage reduction in school variance relative to first column		35.3	48.4
KS3: between school variance	0.339	0.187	0.099
Percentage reduction in school variance relative to first column		44.9	70.9

Source: Authors' calculations based on data from the Longitudinal Study of Young People in England (U.K. Data Archive 2010).
Note: *Covariates as in table 12.7.

Table 13.1 Descriptive Statistics

Italian Sample		German Sample	
Number of observations			
Total	88393	Total:	1598
By years			
1995	26.2		
1998	25.6		
2001	24.3		
2004	23.9		
Gender			
Female	52.3	Female	51.5
Parental education			
ISCED 0–2	44.6	ISCED 0–2	8.9
ISCED 3	41.4	ISCED 3	62.5
ISCED 4–6	14.0	ISCED 4–6	28.6
Achievements at end of primary school (exam results, recommendation)			
Final grades, grade 8 = pass	28.7	Hauptschule (low)	17.2
Final grades, grade 8 = fair	28.9	Realschule (intermediate)	29.8
Final grades, grade 8 = good	21.3	Gymnasium (high)	35.1
Final grades, grade 8 = excellent	21.1	Other	17.8
Track choice			
Istituto professionale	14.9	Hauptschule (low)	26.3
Istituto tecnico	41.4	Realschule (intermediate)	28.6
Liceo	32.5	Gymnasium (high)	30.4
Teachers' school	8.1	Other	14.7
Art school	3.2		
Secondary school achievements			
Changed track (up)	2.1	Changed track (up)	18.6
Changed track (down)	4.9	Changed track (down)	10.1
Repeated grades	22.5	Repeated grades	17.7
Exam results grade 13 (out of 100)=60–69	33.6	Grades, age seventeen, 4.51–6	2.1
Exam results grade 13 (out of 100)= 70–79	28.3	Grades, age seventeen, 3.51–4.5	21.9
Exam results grade 13 (out of 100)= 80–89	18.8	Grades, age seventeen, 2.51–3.5	50.8
Exam results grade 13 (out of 100)= 90–100	19.4	Grades, age seventeen, 1.51–2.5	23.0
		Grades, age seventeen, ≤1.5	2.2

Table 13.1 *Continued*

Italian Sample		German Sample	
Postsecondary education			
Enrolled at university	58.0	Enrolled in vocational	59.9
		Enrolled at university	34.2
Dropped out of university	13.5		

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: Figures for Germany are based on both samples if applicable.

Table 13.2 Outcomes Preceding Selection into Tracks

	Exam Results at the End of Eighth Grade (Base = Pass)		
A. Italy	Fair	Good	Excellent
Parental education (base=ISCED 0–2)			
ISCED3	0.306***	0.596***	0.925***
	(0.029)	(0.033)	(0.036)
ISCED 4–6	0.751***	1.411***	2.153***
	(0.053)	(0.053)	(0.053)
Observations		83541	
Pseudo R^2		0.041	

	Teachers' Recommendations at End of Primary School (Base = Low)		
B. Germany	Intermediate	High	Other
Parental education (base=ISCED 0–2)			
ISCED3	0.770**	1.946***	0.461
	(0.375)	(0.506)	(0.481)
ISCED 4–6	1.510***	3.512***	0.993*
	(0.457)	(0.556)	(0.583)
Observations		1300	
Pseudo R^2		0.103	

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: Multinomial logit estimates. Asymptotically robust standard errors in parentheses.
Regressions include gender, region, and year dummies and use survey weights.
P-value = 0.0000 for each model.
* $p < .10$, ** $p < .5$, *** $p < .01$

Table 13.3 Choice of School Track

	A. Italy (Base = Vocational Education); Number of Observations = 85937								
	Technical Education			Academic-Oriented Education			Teachers' School		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Parental education (base=ISCED 0–2)									
ISCED 3	0.581***	0.512***	0.574***	1.617***	1.465***	1.616***	0.798***	0.756***	0.558***
	(0.028)	(0.030)	(0.044)	(0.033)	(0.038)	(0.089)	(0.050)	(0.052)	(0.095)
ISCED 4–6	1.120***	0.994***	1.004***	3.852***	3.562***	3.855***	2.055***	1.927***	1.576***
	(0.068)	(0.071)	(0.102)	(0.064)	(0.072)	(0.120)	(0.093)	(0.096)	(0.171)
Final grades, grade 8 (base=pass)									
Fair		0.925***	0.969***		1.609***	1.748***		0.823***	0.720***
		(0.031)	(0.040)		(0.047)	(0.087)		(0.059)	(0.081)
Good		1.757***	1.783***		3.351***	3.526***		1.649***	1.564***
		(0.046)	(0.056)		(0.056)	(0.091)		(0.073)	(0.099)
Excellent		2.345***	2.414***		4.793***	4.977***		2.267***	2.003***
		(0.068)	(0.088)		(0.073)	(0.109)		(0.090)	(0.126)
Pseudo R^2	0.111	0.194	0.195	0.111	0.194	0.195	0.111	0.194	0.195

	B. Germany (Base = Low); Number of Observations = 1300								
	Intermediate			High			Other		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Parental education (base=ISCED 0–2)									
ISCED 3	0.592*	0.270	0.262	1.580***	0.504	0.474	–0.081	–0.306	–0.323
	(0.345)	(0.367)	(0.363)	(0.551)	(0.542)	(0.561)	(0.464)	(0.468)	(0.470)
ISCED 4–6	1.313***	0.871*	0.886	3.332***	1.889***	4.092***	0.761	0.307	0.736
	(0.423)	(0.449)	(0.744)	(0.588)	(0.595)	(1.548)	(0.562)	(0.595)	(0.874)
Teachers' recommendation (base=low)									
Intermediate		2.417***	2.333***		3.510***	4.588***		1.143***	1.282***
		(0.309)	(0.329)		(0.850)	(1.073)		(0.392)	(0.427)
High		1.978***	2.089***		7.093***	8.260***		1.618***	1.591***
		(0.391)	(0.454)		(0.852)	(1.081)		(0.475)	(0.572)
Other		0.731**	0.904**		2.572***	3.433***		0.929**	1.003**
		(0.358)	(0.376)		(0.864)	(1.114)		(0.451)	(0.473)
Pseudo R^2	0.134	0.356	0.360	0.134	0.356	0.360	0.134	0.356	0.360

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: For Italy, results for art schools not shown. Multinomial logit estimates. Asymptotically robust errors in parentheses. Regressions include gender, region, and year dummies and use survey weights. *P*-value = 0.0000 for each model. Model 3 contains interaction effects as described in the text (reported in online appendix).
* $p < .10$, ** $p < .5$, *** $p < .01$

Table 13.4 Achievement During Secondary School, Italy

	Repeated Grades			Changed to Higher Track			Changed to Lower Track		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Parental education (base=ISCED 0–2)									
ISCED 3	–0.155***	–0.0188	0.0524	–0.335***	–0.0429	–0.114	–0.128**	–0.424***	–0.242***
	(0.027)	(0.030)	(0.054)	(0.104)	(0.109)	(0.157)	(0.053)	(0.059)	(0.075)
ISCED 4–6	–0.657***	–0.293***	0.195	0.111	0.708***	0.708***	–0.347***	–1.018***	–0.716***
	(0.044)	(0.051)	(0.149)	(0.162)	(0.168)	(0.247)	(0.076)	(0.086)	(0.189)
Final grades, grade 8 (base=pass)									
Fair		–0.851***	–0.853***		–0.362***	–0.363***		–0.876***	–0.882***
		(0.032)	(0.032)		(0.126)	(0.126)		(0.064)	(0.064)
Good		–1.818***	–1.822***		–0.137	–0.141		–1.691***	–1.699***
		(0.046)	(0.046)		(0.169)	(0.170)		(0.080)	(0.080)
Excellent		–3.019***	–3.021***		–0.090	–0.095		–2.707***	–2.713***
		(0.068)	(0.068)		(0.202)	(0.202)		(0.105)	(0.105)
School track (base=vocational)									
Technical		0.706***	0.727***		–1.791***	–1.812***			
		(0.034)	(0.042)		(0.114)	(0.150)			
Academic oriented		0.911***	1.044***					2.344***	2.506***
		(0.046)	(0.068)					(0.061)	(0.084)
Teachers' school		0.423***	0.495***		–2.357***	–2.765***		1.073***	1.124***
		(0.067)	(0.087)		(0.236)	(0.341)		(0.105)	(0.138)
Observations	85956	83522	83522	66095	64150	64150	62790	61055	61055
Pseudo R^2	0.040	0.148	0.148	0.018	0.107	0.107	0.005	0.134	0.135

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: For Italy, results for art schools not shown. Logit estimates. Asymptotically robust standard errors in parentheses. Regressions include gender, region, and year dummies and use survey weights. *P*-value = 0.0000 for each model. Model 3 contains interaction effects as described in the text (reported in online appendix).
* $p < .10$, ** $p < .5$, *** $p < .01$

Table 13.5 Achievement During Secondary School, Germany

	Repeated Grades			Changed to Higher Track			Changed to Lower Track		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Parental education (base=ISCED 0–2)									
ISCED 3	0.037	0.138	0.107	1.433***	1.711***	1.710***	–0.345	–0.162	–0.167
	(0.427)	(0.444)	(0.438)	(0.410)	(0.509)	(0.517)	(0.604)	(0.814)	(0.817)
ISCED 4–6	–0.317	–0.099	0.956	2.408***	3.150***	3.164***	–1.298*	–1.160	–1.226
	(0.482)	(0.519)	(0.727)	(0.485)	(0.631)	(0.671)	(0.699)	(0.906)	(0.962)
Teachers' recommendation (base=low)									
Intermediate		0.071	0.080		2.493***	2.494***		–2.580***	–2.592***
		(0.324)	(0.317)		(0.450)	(0.449)		(0.519)	(0.516)
High		–0.700*	–0.722*		3.981***	3.981***		–3.418***	–3.432***
		(0.384)	(0.391)		(0.670)	(0.669)		(0.628)	(0.633)
Other		–0.032	–0.086		1.841***	1.841***		–1.854**	–1.853**
		(0.373)	(0.358)		(0.497)	(0.498)		(0.754)	(0.753)
School track (base=low)									
Intermediate		–0.101	0.199		–3.443***	–3.437***		–1.388***	–1.432***
		(0.325)	(0.324)		(0.412)	(0.451)		(0.399)	(0.454)
High		0.063	0.175						
		(0.402)	(0.429)						
Other		–0.329	–0.110						
		(0.384)	(0.423)						
Observations	1300	1300	1300	667	667	667	752	752	752
Pseudo R^2	0.034	0.047	0.059	0.100	0.334	0.334	0.093	0.175	0.175

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: For Italy, results for art schools not shown. Logit estimates. Asymptotically robust standard errors in parentheses. Regressions include gender, region, and year dummies and use survey weights. *P*-value = 0.0000 for each model. Model 3 contains interaction effects as described in the text (reported in online appendix).
* $p < .10$, ** $p < .5$, *** $p < .01$

Table 13.6 Achievement at End of School Track

	Italy, Age 18				Germany, Age 17		
	Model 1	Model 2	Model 3		Model 1	Model 2	Model 3
Parental education (base=ISCED 0–2)				Parental education (base=ISCED 0–2)			
ISCED 3	0.284***	0.126***	0.0738**	ISCED 3	0.281	0.108	0.066
	(0.020)	(0.022)	(0.036)		(0.301)	(0.325)	(0.328)
ISCED 4–6	0.839***	0.475***	0.188*	ISCED 4-6	0.218	–0.238	–0.232
	(0.030)	(0.034)	(0.106)		(0.328)	(0.351)	(0.570)
Final grades, grade 8 (base=pass)				Teachers' recommendation (base=low)			
Fair		0.695***	0.696***	Intermediate		0.848***	0.828***
		(0.026)	(0.026)			(0.261)	(0.260)
Good		1.438***	1.440***	High		1.431***	1.412***
		(0.032)	(0.032)			(0.313)	(0.311)
Excellent		2.693***	2.694***	Other		0.276	0.298
		(0.038)	(0.038)			(0.294)	(0.297)
Repeated grades		–0.922***	–0.921***	Repeated grades		–1.292***	–1.279***
		(0.026)	(0.026)			(0.230)	(0.232)
School track (base=vocational)				School track (base=low)			
Technical		–0.338***	–0.361***	Intermediate		–0.333	–0.277
		(0.025)	(0.031)			(0.230)	(0.240)
Academic-oriented		–0.742***	–0.774***	High		–0.332	–0.243
		(0.033)	(0.049)			(0.297)	(0.331)
Teachers' school		–0.514***	–0.624***	Other		–0.345	–0.587
		(0.045)	(0.067)			(0.417)	(0.477)
Observations	85956	83518	83518	Observations	1300	1300	1300
Pseudo R^2	0.024	0.123	0.123	Pseudo R^2	0.028	0.079	0.082

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: For Italy, results for art schools not shown. Ordered logit estimates. Asymptotically robust standard errors in parentheses. Regressions include gender, region, and year dummies and use survey weights. *P*-value = 0.0000 for each model. Model 3 contains interaction effects as described in the text (reported in online appendix).
* $p < .10$, ** $p < .5$, *** $p < .01$

Table 13.7 Transition to Third Level of Education or Training, Italy

	University Enrollment			University Dropout		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Parental education (base=ISCED 0–2)						
ISCED 3	1.048***	0.704***	0.545***	–0.333***	–0.0828*	0.0267
	(0.024)	(0.029)	(0.049)	(0.044)	(0.048)	(0.097)
ISCED 4–6	2.655***	1.577***	1.344***	–1.241***	–0.580***	–0.520***
	(0.048)	(0.057)	(0.112)	(0.071)	(0.077)	(0.183)
Final grades, grade 8 (base=pass)						
Fair		0.173***	0.176***		–0.172***	–0.172***
		(0.034)	(0.034)		(0.058)	(0.058)
Good		0.359***	0.364***		–0.180***	–0.185***
		(0.042)	(0.042)		(0.067)	(0.067)
Excellent		0.523***	0.526***		–0.374***	–0.377***
		(0.054)	(0.055)		(0.086)	(0.086)
Repeated grades		–0.396***	–0.396***		0.387***	0.382***
		(0.034)	(0.034)		(0.056)	(0.056)

School track (base=vocational)						
Technical		0.871***	0.780***		–0.574***	–0.563***
		(0.032)	(0.041)		(0.060)	(0.079)
Academic-oriented		3.495***	3.429***		–1.932***	–1.805***
		(0.056)	(0.083)		(0.078)	(0.112)
Teachers' school		1.652***	1.498***		–1.072***	–0.880***
		(0.054)	(0.072)		(0.099)	(0.139)
Exam results, grade 13 (base=60–69)						
70 to 79		0.634***	0.636***		–0.493***	–0.492***
		(0.034)	(0.034)		(0.056)	(0.055)
80 to 89		1.050***	1.050***		–0.808***	–0.804***
		(0.040)	(0.040)		(0.064)	(0.064)
90 to 100		1.660***	1.658***		–1.377***	–1.370***
		(0.048)	(0.048)		(0.071)	(0.071)
Observations	85947	83509	83509	43076	42057	42057
Pseudo R^2	0.114	0.338	0.338	0.046	0.152	0.152

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).
Notes: Logit estimates. Asymptotically robust standard errors in parentheses. Regressions include gender, region, and year dummies and use survey weights. Results for art school not shown. Model 3 contains interaction effects as described in the text (reported in online appendix).
* $p < .10$, ** $p < .5$, *** $p < .01$

Table 13.8 Transition into the Third Level of Education or Training, Germany

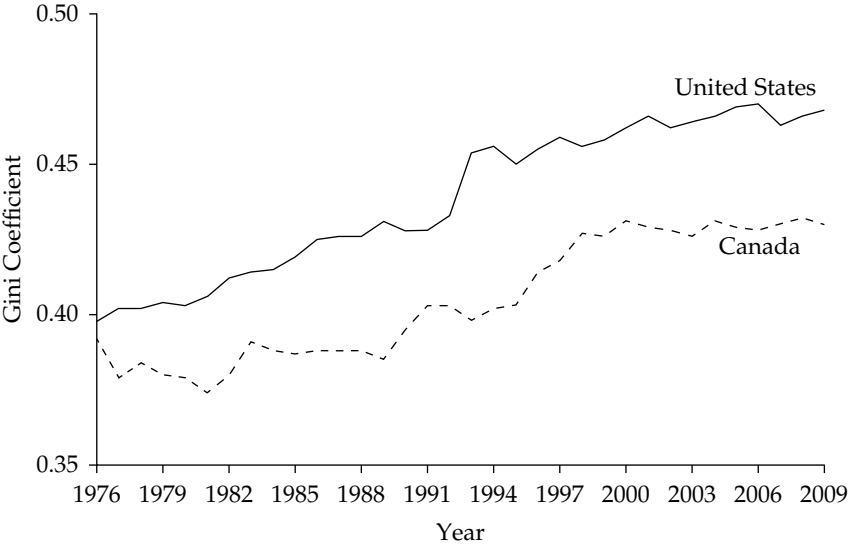
	Entry into Vocational Training		Entry into University	
	Model 1	Model 2	Model 1	Model 2
Parental education (base=ISCED 0–2)				
ISCED 3	1.706**	1.930**	1.678*	1.747*
	(0.841)	(0.873)	(0.918)	(0.926)
ISCED 4–6	2.560***	2.416***	4.478***	3.257***
	(0.938)	(0.928)	(0.997)	(0.993)
Repeated grades		–0.238		–0.567
		(0.622)		(0.756)
Grades, age seventeen (base=pass)				
Results=fair		1.111*		1.934**
		(0.669)		(0.773)
Results=good		0.439		1.766**
		(0.747)		(0.827)
Teachers' recommendation (base=low)				
Intermediate		0.347		0.194
		(1.029)		(1.160)
High		0.448		0.686
		(1.160)		(1.278)
Other		–0.917		–1.439
		(0.691)		(0.955)
School track (base=low)				
Intermediate		2.095**		5.435***
		(1.006)		(1.595)
High		0.467		5.884***
		(0.958)		(1.575)
Other		–0.036		3.946***
		(0.878)		(1.472)
Observations	452	452	452	452
Pseudo R^2	0.146	0.369	0.146	0.369

Source: Authors' calculations based on data from ISTAT (various years) and SOEP (2009).

Notes: Multinomial logit estimates. Asymptotically robust standard errors in parentheses. Regressions include gender, region, and year dummies and use survey weights. Results for art school not shown.

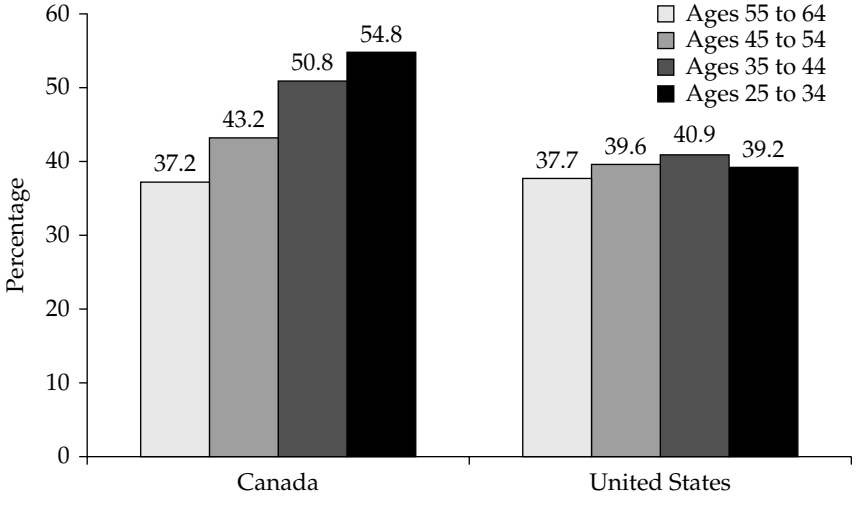
* $p < .10$, ** $p < .5$, *** $p < .01$

Figure 14.1 Trends in Inequality (Gini Coefficient)



Source: Authors' calculations based on data from Brandolini and Smeeding (2009, figure 4.2).

Figure 14.2 Adults with Associate Degree or Higher



Source: Authors' calculations based on data from OECD (2008).

Table 14.1 Probability of a Positive Outcome

	Canada			United States		
	Low SES	High SES	Gap	Low SES	High SES	Gap
C0 outcomes (birth)						
Birth weight greater than 2.5 kilograms	93.0	95.7	2.7	93.6	97.6	4.0
Good health at birth	95.7	96.6	0.9	89.0	95.0	6.0
Not born four or more weeks early	89.0	91.3	2.3	93.1	96.7	3.6
C3 outcomes (ages twelve to seventeen)						
Never repeat a grade	83.9	95.0	11.1	78.3	95.7	17.4
Nonsmoking	82.1	87.1	5.0	88.1	92.6	4.5
Health	79.4	92.0	12.6	52.5	76.1	23.6
C4 outcomes (ages eighteen to twenty-three)						
Postsecondary Enrollment	65.3	84.4	19.1	44.8	92.6	47.8
Health	65.5	71.3	5.8	55.0	72.2	17.2

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009), National Longitudinal Survey of Children and Youth (Statistics Canada 2008), and the Youth in Transition Survey (Statistics Canada 2007).

Table 14.2 Probability of Being in the Top Quartile of Test Scores

	Canada			United States		
	Low SES	High SES	Gap	Low SES	High SES	Gap
Reading score A (letter word)	16.7	34.1	17.4	12.4	41.6	29.2
Reading score B (passage comprehension)	16.7	34.1	17.4	7.8	41.2	33.4
Math score	18.1	32.6	14.5	8.5	43.0	34.5

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009) and Youth in Transition Survey (Statistics Canada 2007).

Table 14.3 Longitudinal Samples Used in Regression Analysis

	United States					Canada			
	Cohort A (N = 661)		Cohort B (N = 561)			Cohort A (N = 3,123)		Cohort B (N = 1,001)	
Year	Age	Life Stage	Age	Life Stage	Year	Age	Life Stage	Age	Life Stage
Various	0	C0	NA	NA	1994	0–3	C0	7–11	C2
1997	3–6	NA	8–11	C2	1998	4–7	NA	11–15	C3
2002	8–11	C2	13–16	C3	2002	8–11	C2	15–19	NA
2007	13–16	C3	18–21	C4	2006	12–15	C3	19–23	C4

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009) and the National Longitudinal Survey of Children and Youth (Statistics Canada 2008).

Table 14.4 Effect of Family Income on Childhood Outcomes at C3

A. Standardized Behavioral Problems Scores

	United States			Canada		
	BPI at C3	BPI at C3	BPI at C3	BPI at C3	BPI at C3	BPI at C3
Ln(income)	–0.1872*	–0.1887*	–0.0046	–0.1774*	–0.1753*	–0.1321*
	(0.0546)	(0.0547)	(0.0434)	(0.0570)	(0.0573)	(0.0561)
C0 low birth weight		–0.0599	–0.0561		–0.0692	–0.0943
		(0.1437)	(0.1116)		(0.1035)	(0.0977)
C2 behavior scores			0.6419*			0.2208*
			(0.0309)			(0.0310)
R^2	0.0382	0.0385	0.4210	0.0212	0.0215	0.0666

B. Standardized Math Scores

	United States			Canada		
	Math at C3	Math at C3	Math at C3	Math at C3	Math at C3	Math at C3
Ln(income)	0.5643*	0.5537*	0.1275*	0.3420*	0.3393*	0.2681*
	(0.0504)	(0.0501)	(0.0403)	(0.0512)	(0.0509)	(0.0439)
C0 low birth weight		–0.4265*	–0.1366		–0.0880	–0.1434
		(0.1316)	(0.0961)		(0.1139)	(0.0871)
C2 math scores			0.6909*			0.5574*
			(0.0284)			(0.0298)
R^2	0.2122	0.2246	0.5936	0.2955	0.2959	0.4555

C. Poor Health

	United States			Canada		
	Health at C3	Health at C3	Health at C3	Health at C3	Health at C3	Health at C3
Ln(income)	–0.0394*	–0.0394*	–0.0362	–0.0089*	–0.0090*	–0.0080
	(0.0196)	(0.0197)	(0.0197)	(0.0045)	(0.0046)	(0.0049)
C0 low birth weight		–0.0041	–0.0069		0.0061	0.0063
		(0.0450)	(0.0497)		(0.0042)	(0.0040)
C2 poor health			0.0738			0.0587*
			(0.0995)			(0.0547)
Pseudo R^2	0.0241	0.0241	0.0270	0.0669	0.0692	0.0801

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009) and the National Longitudinal Survey of Children and Youth (Statistics Canada 2008).
Note: Standard errors in parentheses.

Table 14.5 Effect of Family Income on College Attendance at C4

	United States			Canada		
	Attend College	Attend College	Attend College	Attend College	Attend College	Attend College
A. With and without controlling for childhood externalizing behavior in C2						
Ln(income)	0.2711*	0.2489*	0.2456*	0.2357*	0.2199*	0.2176*
	(0.0386)	(0.0321)	(0.0381)	(0.0377)	(0.0380)	(0.0388)
C2 behavior		–0.0875*	–0.0510*		–0.0990*	–0.0916*
		(0.0217)	(0.0257)		(0.0253)	(0.0258)
C3 behavior			–0.0697*			–0.0313*
			(0.0269)			(0.0212)
Pseudo R^2	0.1991	0.2397	0.2592	0.1010	0.1381	0.1414
B. With and without controlling for math scores in C2						
Ln(income)	0.2711*	0.2093*	0.1894*	0.2357*	0.2320*	0.2133*
	(0.0386)	(0.0384)	(0.0407)	(0.0377)	(0.0407)	(0.0419)
C2 math scores		0.1102*	0.0575*		0.1433*	0.0801
		(0.0228)	(0.0293)		(0.0371)	(0.0422)
C3 math scores			0.0836*			0.1190*
			(0.0389)			(0.0351)
Pseudo R^2	0.1991	0.2498	0.2682	0.1010	0.1342	0.1581
C. With and without controlling for poor health in C2						
Ln(income)	0.2711*	0.2697*	0.2726*	0.2357*	0.2330*	0.2298*
	(0.0386)	(0.0388)	(0.0389)	(0.0377)	(0.0378)	(0.0405)
C2 poor health		–0.0511	–0.0104		0.1954	0.1506
		(0.1726)	(0.1446)		(0.1556)	(0.1562)
C3 poor health			–0.2117			0.1669
			(0.1461)			(0.1676)
Pseudo R^2	0.1991	0.1995	0.2067	0.1010	0.1024	0.1034

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009) and National Longitudinal Survey of Children and Youth (Statistics Canada 2008).
Notes: C2 is ages seven to eleven, C3 is ages twelve to seventeen, and C4 is ages eighteen to twenty-three.
Standard errors in parentheses.

Table 14.6 Effect of Family Income on the Probability of College Attendance (C4)

A. United States					
Ln income	0.2712*	0.1844*	0.1667*	0.1790*	0.1642*
	(0.0386)	(0.0379)	(0.0376)	(0.0390)	(0.0384)
Math at C2		0.1006*	0.0464	0.0883*	0.0447
		(0.0228)	(0.0273)	(0.0221)	(0.0268)
BPI at C2		–0.0806*	–0.0530*	–0.0752*	–0.0492*
		(0.0209)	(0.0244)	(0.0221)	(0.0249)
Bad health at C2		–0.0104	–0.0172	–0.0192	–0.0274
		(0.1432)	(0.1389)	(0.1505)	(0.1484)
Excellent health at C2		0.0463	0.0254	0.0438	0.0220
		(0.0442)	(0.0410)	(0.0434)	(0.0407)
Math at C3			0.0835*		0.0724*
			(0.0373)		(0.0349)
BPI at C3			–0.05340*		–0.0515*
			(0.02230)		(0.0236)
Bad health at C3			–0.0907		–0.0664
			(0.1274)		(0.1313)
Excellent health at C3			0.0499		0.0652
			(0.0411)		(0.0382)
Repeat at C3				–0.2528*	–0.2051*
				(0.1053)	(0.1062)
Drink at C3				0.0218	0.0264
				(0.0526)	(0.0503)
Pot at C3				–0.0328	–0.0144
				(0.0618)	(0.0572)
Pseudo R^2	0.1991	0.2879	0.3285	0.3083	0.3426

Table 14.6 *Continued*

B. Canada					
Ln income	0.2357*	0.2187*	0.1875*	0.1692*	0.1404*
	(0.0377)	(0.0403)	(0.0421)	(0.0433)	(0.0434)
Math at C2		0.1228*	0.0589	0.1292*	0.0673
		(0.0347)	(0.0391)	(0.0386)	(0.0439)
BPI at C2		−0.0843*	−0.0774*	−0.0903*	−0.0886*
		(0.0250)	(0.0262)	(0.0272)	(0.0285)
Bad health at C2		−0.2628	−0.2033	−0.4239*	−0.3586*
		(0.1598)	(0.1837)	(0.1656)	(0.1876)
Excellent health at C2		0.0334	−0.0811	0.0743	−0.1129*
		(0.0464)	(0.0483)	(0.0482)	(0.0509)
Math at C3			0.1197*		0.1066*
			(0.0323)		(0.0337)
BPI at C3			−0.0091		0.0099
			(0.0211)		(0.0248)
Bad health at C3			−0.0498		−0.2240
			(0.1547)		(0.2284)
Excellent health at C3			0.1066*		0.0863
			(0.0484)		(0.0539)
Repeat at C3				−0.5662*	−0.5498*
				(0.1383)	(0.1653)
Drink at C3				−0.1359*	−0.1379*
				(0.0562)	(0.0551)
Pot at C3				−0.0623	−0.0682
				(0.0776)	(0.0798)
Pseudo R^2	0.1010	0.1626	0.1936	0.2094	0.2354

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009) and National Longitudinal Survey of Children and Youth (Statistics Canada 2008).
Notes: C2 is ages seven to eleven, C3 is ages twelve to seventeen, and C4 is ages eighteen to twenty-three.
Standard errors in parentheses.

Table 14.7 Effects of Family Income on Probability of College Attendance (C4), Further Results

	United States			Canada		
	Model with only SES	Model with SES and C2 Variables	Model with SES, C2, and C3 Variables	Model with only SES	Model with SES and C2 Variables	Model with SES, C2, and C3 Variables
A. Nonlinear effects of income						
Income in bottom quintile	–0.2808*	–0.1866*	–0.1580*	–0.0613	–0.0375	0.0138
	(0.0655)	(0.0631)	(0.0628)	(0.0533)	(0.0503)	(0.0557)
Income in top quintile	0.1942*	0.1164	0.0886	0.2414*	0.2517*	0.1973*
	(0.0485)	(0.0607)	(0.0615)	(0.0457)	(0.0419)	(0.0462)
Pseudo R^2	0.1391	0.2573	0.3149	0.0978	0.1708	0.2428
B. Parental education (comparison group is ISCED 3 or 4)						
ISCED 0–2	–0.2162*	–0.1745	–0.1487*	–0.2395	–0.1581	–0.1982
	(0.1102)	(0.0962)	(0.0991)	(0.1332)	(0.1384)	(0.1476)
ISCED 5b	0.1491*	0.1056*	0.0861*	0.0922	0.0976*	0.0537
	(0.0405)	(0.0413)	(0.0440)	(0.0505)	(0.0480)	(0.0565)
ISCED 5a or 6	0.2877*	0.2091*	0.2010*	0.1633*	0.1707*	0.0710*
	(0.0403)	(0.0454)	(0.0397)	(0.0570)	(0.0523)	(0.0622)
Pseudo R^2	0.1761	0.2895	0.3501	0.0774	0.1449	0.2285

Source: Authors' calculations based on the CDS of the Panel Study of Income Dynamics (Institute for Social Research 2009) and National Longitudinal Survey of Children and Youth (Statistics Canada 2008).
Notes: C2 is ages seven to eleven, C3 is ages twelve to seventeen, and C4 is ages eighteen to twenty-three. The control variables include all of the variables in table 14.6 but use different measures of parental SES. The first and second columns of table 14.7 correspond to the first and second columns of table 14.6; the last column in table 14.7 corresponds to the last column in table 14.6.
Standard errors in parentheses.

Table 15.1 Means and Difference in Means of Selected Variables by Length of Degree

	Control Group: Long Degrees in Time			Control Group: Long Degrees with One Year of Delay at Maximum	
	Long	Short		Long	
Variable	A	B	A-B	C	C-B
Selected independent variables					
Socioeconomic status					
HISCED 1–2	0.224	0.274	–0.051***	0.240	–0.035***
HISCED 3–4	0.412	0.453	–0.041***	0.420	–0.033***
HISCED 5–6	0.365	0.272	0.092***	0.340	0.068***
Secondary school type					
Scientific lyceum	0.469	0.424	0.046***	0.443	0.019*
Classical lyceum	0.223	0.154	0.070***	0.222	0.068***
Language lyceum	0.050	0.048	0.002	0.050	0.002
Art school	0.011	0.013	–0.001	0.014	0.001
Pedagogic school	0.070	0.076	–0.006	0.073	–0.004
Technical school	0.161	0.250	–0.089***	0.185	–0.065***
Vocational school	0.015	0.036	–0.021***	0.014	–0.022***
Secondary school final grade	51.413	51.140	0.273	50.837	–0.303**
Gender (men)					
Women	0.665	0.600	0.065***	0.643	0.043***
Age (twenty-four or younger)					
Twenty-five to twenty-nine	0.524	0.174	0.350***	0.661	0.487***
Outcome variables					
Degree final grade (66–111)	105.487	103.665	1.822***	104.579	0.914***
Log hourly wage	2.072	2.039	0.034***	2.065	0.026***
Fraction enrolled in PG education	0.415	0.704	–0.289***	0.389	–0.315***
Job satisfaction about wage (1–4)	2.655	2.732	–0.078***	2.635	–0.097***

Source: Authors' calculations based on data from ISTAT (2007).
Notes: Means and significance levels are computed using ISTAT sampling weights. The sample using the first control group includes 15,824 observations (6,554 graduates with long degrees and 9,270 with short degrees), the one using the second control group 20,105 observations (10,835 graduates with long degrees and 9,270 with short degrees). For the first sample the weighted proportion of short-degree graduates is 55.76 percent and for the second sample 40.92 percent.
*$p < .10$, **$p < .05$, ***$p < .01$

Table 15.2 Probability to Continue in Postgraduate Education

	Control Group: Long Degrees in Time						Control Group: Long Degrees with One Year of Delay at Maximum					
	All				Men	Women	All				Men	Women
	1	2	3	4	5	6	7	8	9	10	11	12
Short degree (SD)	1.637***	1.075***	1.406***	1.548***	2.128***	1.269***	1.679***	1.240***	1.482***	1.611***	2.227***	1.333***
	(0.074)	(0.107)	(0.110)	(0.193)	(0.234)	(0.202)	(0.063)	(0.090)	(0.094)	(0.188)	(0.245)	(0.172)
HISCED 3–4	0.148**	–0.208*	–0.143	–0.113	0.201	–0.295*	0.154**	–0.055	–0.027	0.003	0.351***	–0.163*
	(0.068)	(0.124)	(0.122)	(0.102)	(0.192)	(0.157)	(0.060)	(0.087)	(0.087)	(0.069)	(0.131)	(0.087)
HISCED 5–6	0.484***	–0.037	0.168	0.218*	0.238	0.160	0.482***	0.170*	0.294***	0.347***	0.363***	0.365***
	(0.080)	(0.122)	(0.124)	(0.128)	(0.160)	(0.156)	(0.070)	(0.092)	(0.094)	(0.082)	(0.112)	(0.095)
Degree final grades	0.021***	0.021***	0.027***	0.025***	0.034***	0.021***	0.032***	0.032***	0.031***	0.028***	0.032***	0.026***
	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.007)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)	(0.006)
HISCED 3–4 * SD		0.600***	0.466***	0.441***	0.175	0.578***		0.473***	0.377***	0.359***	0.069	0.455***
		(0.140)	(0.140)	(0.123)	(0.251)	(0.175)		(0.110)	(0.111)	(0.092)	(0.187)	(0.119)
HISCED 5–6 * SD		1.092***	0.796***	0.743***	0.513**	0.890***		0.925***	0.727***	0.683***	0.472**	0.718***
		(0.145)	(0.148)	(0.158)	(0.217)	(0.189)		(0.122)	(0.125)	(0.125)	(0.194)	(0.143)
Majors fixed effects			yes	yes	yes	yes			yes	yes	yes	yes
Institutions fixed effects				yes	yes	yes				yes	yes	yes
Pseudo R^2	0.151	0.156	0.198	0.213	0.288	0.193	0.144	0.147	0.183	0.196	0.269	0.174
Number of observations	15,824	15,824	15,824	15,809	6,586	9,207	20,105	20,105	20,105	20,086	8,533	11,540

Source: Authors' calculations based on data from ISTAT (2007).
Notes: The dependent variable is a dummy indicator that takes value one if an individual is enrolled in postgraduate education and zero otherwise. All models are estimated with logit, and the table reports logit coefficients. Estimates use probability weights. Heteroskedasticity robust standard errors in parentheses. Errors are clustered by HEIs in the model using HEIs fixed effects. The sample includes only individuals who found their current work after university graduation. The models also include controls for age, gender (except the gender specific regressions), secondary school track, upper secondary school final grade, grade by track interactions, and dummies for working while studying and being a switcher (to the new system). Job characteristics are two dummies for part-time (versus full-time) and temporary (versus permanent) jobs, respectively. See the online appendix for a detailed description of the variables.
*$p < .10$, **$p < .05$, ***$p < .01$

Table 15.3 Log Hourly Wages

	Control Group: Long Degrees in Time							Control Group: Long Degrees with One Year of Delay at Maximum						
	All					Men	Women	All					Men	Women
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Short degree (SD)	–0.033***	–0.005	–0.076***	–0.074**	–0.071**	–0.120***	–0.052	–0.023*	0.005	–0.073***	–0.066**	–0.065**	–0.093**	–0.055*
	(0.012)	(0.022)	(0.022)	(0.034)	(0.034)	(0.045)	(0.035)	(0.012)	(0.019)	(0.020)	(0.032)	(0.032)	(0.046)	(0.030)
HISCED 3–4	0.005	0.016	0.010	0.007	0.009	–0.061	0.036	0.002	0.008	0.007	0.006	0.008	–0.029	0.022
	(0.013)	(0.026)	(0.025)	(0.029)	(0.029)	(0.046)	(0.030)	(0.013)	(0.021)	(0.020)	(0.025)	(0.025)	(0.038)	(0.026)
HISCED 5–6	–0.013	0.023	0.012	0.008	0.013	–0.001	0.012	–0.010	0.017	0.012	0.013	0.017	0.001	0.023
	(0.014)	(0.025)	(0.025)	(0.027)	(0.027)	(0.043)	(0.036)	(0.014)	(0.021)	(0.020)	(0.019)	(0.018)	(0.037)	(0.022)
Degree final grade	0.002***	0.002**	0.001	0.001	0.001	0.001	0.001	0.002**	0.002**	0.001	0.000	0.000	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
HISCED 3–4 * SD		–0.018	0.006	0.009	0.006	0.099*	–0.033		–0.015	0.006	0.005	0.002	0.067	–0.024
		(0.029)	(0.028)	(0.036)	(0.036)	(0.054)	(0.038)		(0.024)	(0.023)	(0.031)	(0.032)	(0.046)	(0.034)
HISCED 5–6 * SD		–0.069**	–0.015	–0.014	–0.016	–0.001	–0.015		–0.075***	–0.022	–0.028	–0.029	–0.004	–0.038
		(0.028)	(0.028)	(0.034)	(0.034)	(0.046)	(0.042)		(0.025)	(0.024)	(0.029)	(0.030)	(0.040)	(0.031)
Majors fixed effects			yes	yes	yes	yes	yes			yes	yes	yes	yes	yes
Institutions fixed effects				yes	yes	yes	yes				yes	yes	yes	yes
Job characteristics					yes							yes		
R^2	0.075	0.076	0.151	0.170	0.186	0.197	0.182	0.057	0.059	0.117	0.136	0.157	0.156	0.152
Number of observations	7,724	7,724	7,724	7,719	7,719	3,177	4,542	10,142	10,142	10,142	10,135	10,135	4,403	5,732

Source: Authors' calculations based on data from ISTAT (2007).

Notes: The dependent variable is log hourly wage in 2007 euros. All models are estimated with OLS. Estimates use probability weights. Heteroskedasticity robust standard errors in parentheses. Errors are clustered by HEIs in the model using HEIs fixed effects. The sample includes only individuals who found their current job after university graduation. The models also include controls for age, gender (except the gender specific regressions), secondary school track, upper secondary school final grade, grade by track interactions, dummies for working while studying and being a switcher (to the new system), and region where the individual works. Job characteristics are two dummies for part-time (versus full-time) and temporary (versus permanent) jobs, respectively. See the online appendix for a detailed description of the variables.

*$p < .10$, **$p < .05$, ***$p < .01$

Table 15.4 Probability of Switching to a Short Degree

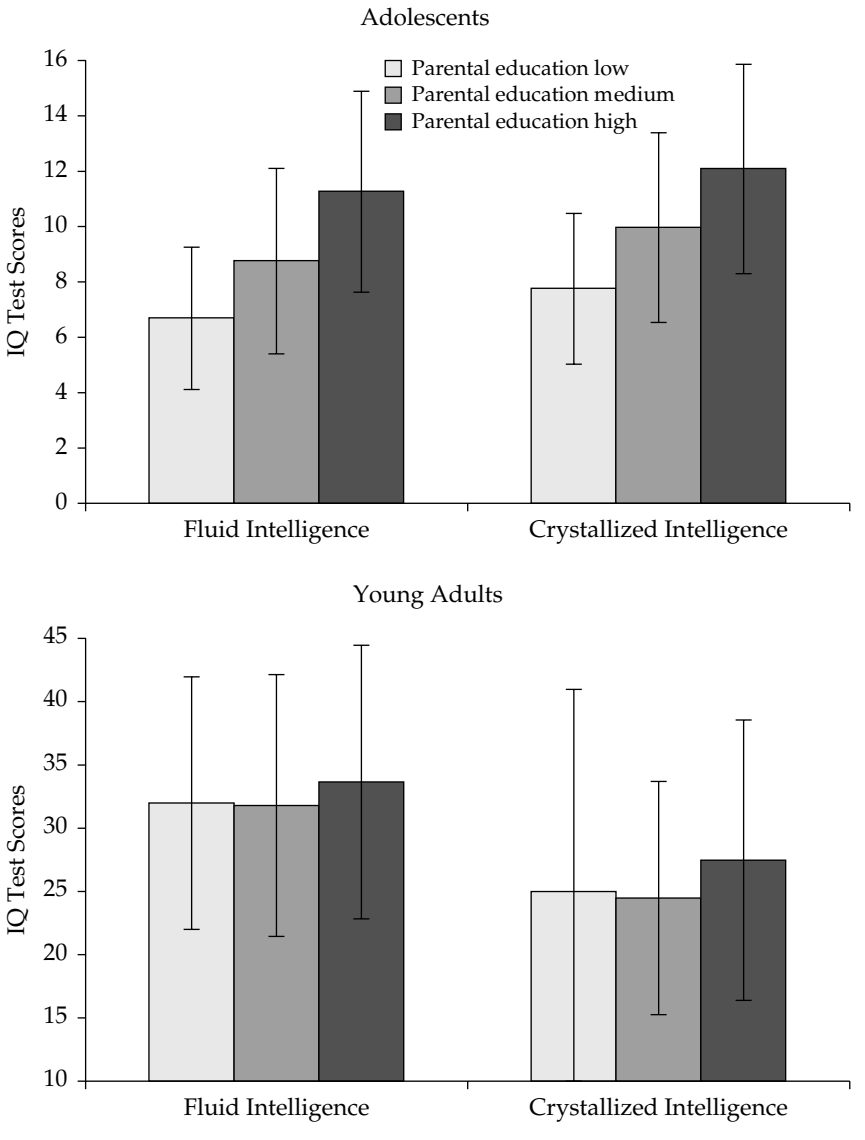
	Long Degrees in Time			Long Degrees with One Year of Delay at Maximum		
	All	Men	Women	All	Men	Women
HISCED 3–4	–0.044	0.007	–0.086	–0.035	0.064	–0.106
	(0.093)	(0.136)	(0.123)	(0.084)	(0.125)	(0.112)
HISCED 5–6	–0.447***	–0.352**	–0.526***	–0.423***	–0.362**	–0.477***
	(0.111)	(0.155)	(0.151)	(0.103)	(0.148)	(0.142)
Pseudo R^2	0.086	0.103	0.077	0.087	0.106	0.078
Number of observations	8,547	3,467	5,080	12,828	5,415	7,413

Source: Authors' calculations based on data from ISTAT (2007).

Notes: The dependent variable is a dummy variable taking on value one if an individual enrolled in the old system switched to a short degree and zero otherwise. All models are estimated with logit, and the table reports the logit coefficients. Estimates use probability weights. Heteroskedasticity robust standard errors in parentheses. The models also include controls for age, gender (except the gender specific regressions), secondary school track, upper secondary school final grade, grade by track interactions, and a dummy for working while studying. See the online appendix for a detailed description of the variables.

*$p < .10$, **$p < .05$, ***$p < .01$

Figure 16.1 Children's IQ Test Scores According to Parental Education



Source: Author's calculations based on SOEP version 26, years 2006 to 2008 (SOEP 2010).
Note: The IQ test for adolescents consists of sixty individual tasks and allow for a total time of twenty-seven minutes. The IQ test for young adults includes two ultra-short tests lasting ninety seconds each (see online appendix).

Table 16.1 Transmission of Cognitive and Noncognitive Skills

	Adolescent Children		Young Adult Children	
	All	Sons	All	Sons
Cognitive skills				
Fluid intelligence				
Test score parents	0.134*	—	0.522***	—
	(0.070)	—	(0.044)	—
Test score father	—	0.028	—	0.388***
	—	(0.129)	—	(0.077)
Adjusted R^2	0.009	0.011	0.240	0.150
Crystallized intelligence				
Test score parents	0.180***	—	0.531***	—
	(0.065)	—	(0.044)	—
Test score father	—	0.214**	—	0.421***
	—	(0.099)	—	(0.072)
Adjusted R^2	0.023	0.038	0.246	0.192
General intelligence				
Test score parents	0.237***	—	0.556***	—
	(0.070)	—	(0.043)	—
Test score father	—	0.203*	—	0.424***
	—	(0.111)	—	(0.076)
Adjusted R^2	0.036	0.026	0.281	0.185
Noncognitive skills				
Openness				
Test score parents	0.173***	—	0.245***	—
	(0.025)	—	(0.017)	—
Test score father	—	0.166***	—	0.310***
	—	(0.043)	—	(0.032)
Adjusted R^2	0.038	0.026	0.083	0.093
Conscientiousness				
Test score parents	0.146***	—	0.226***	—
	(0.024)	—	(0.017)	—
Test score father	—	0.159***	—	0.245***
	—	(0.042)	—	(0.031)
Adjusted R^2	0.030	0.024	0.068	0.061
Extraversion				
Test score parents	0.168***	—	0.193***	—
	(0.026)	—	(0.019)	—
Test score father	—	0.140***	—	0.201***
	—	(0.043)	—	(0.033)
Adjusted R^2	0.034	0.018	0.043	0.037

(Table continues on p. 402.)

Table 16.1 *Continued*

	Adolescent Children		Young Adult Children	
	All	Sons	All	Sons
Agreeableness				
Test score parents	0.163***	—	0.224***	—
	(0.025)	—	(0.017)	—
Test score father	—	0.146***	—	0.206***
	—	(0.041)	—	(0.031)
Adjusted R^2	0.034	0.021	0.070	0.045
Neuroticism				
Test score parents	0.147***	—	0.206***	—
	(0.025)	—	(0.018)	—
Test score father	—	0.162***	—	0.209***
	—	(0.045)	—	(0.034)
Adjusted R^2	0.028	0.022	0.055	0.039
LOC: internal				
Test score parents	0.116***	—	0.214***	—
	(0.023)	—	(0.017)	—
Test score father	—	0.085**	—	0.191***
	—	(0.042)	—	(0.032)
Adjusted R^2	0.021	0.006	0.065	0.036
LOC: external				
Test score parents	0.220***	—	0.265***	—
	(0.022)	—	(0.016)	—
Test score father	—	0.215***	—	0.282***
	—	(0.040)	—	(0.031)
Adjusted R^2	0.075	0.050	0.107	0.085
Number of observations (cognitive skills)	280	90	446	141
Number of observations (noncognitive skills)	1184	518	2228	892

Source: Author's calculations based on data from SOEP version 26, years 2005 to 2008 (SOEP 2010).
Notes: Dependent variables: age-standardized scores of the child's skill measures. The first three dependent variables include cognitive skill measures (fluid intelligence, crystallized intelligence, general intelligence); the other dependent variables comprise noncognitive skill measures (Big Five, locus of control).
"Test score parents" refers to the average of parents' age-standardized test scores when test scores for both parents are available.
Fluid intelligence refers to the coding speed of young adult children and parents (symbol correspondence test) and to the abstract reasoning of adolescent children (matrix test). Crystallized intelligence refers to the word fluency of young adult children and parents (animal-naming task) and to the verbal and numerical skills of adolescent children (word analogies, arithmetic operations). General intelligence combines fluid and crystallized intelligence measures.
Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 16.2 Parental Education and Cognitive Skills of Adolescents and Young Adults

	Fluid Intelligence	Crystallized Intelligence	General Intelligence	Fluid Intelligence	Crystallized Intelligence	General Intelligence
Adolescents						
Medium-educated parents	0.444*	0.628***	0.643***	0.404*	0.563**	0.568**
	(0.227)	(0.223)	(0.227)	(0.227)	(0.222)	(0.226)
Highly educated parents	1.013***	1.198***	1.289***	0.956***	1.069***	1.127***
	(0.233)	(0.229)	(0.233)	(0.234)	(0.232)	(0.235)
Test score parents	—	—	—	0.127**	0.145**	0.191***
	—	—	—	(0.062)	(0.060)	(0.063)
Constant	–0.691***	–0.839***	–0.928***	–0.633***	–0.744***	–0.795***
	(0.216)	(0.212)	(0.216)	(0.216)	(0.212)	(0.216)
Adjusted R^2	0.091	0.109	0.127	0.098	0.122	0.146
Observations	280	280	280	280	280	280
Young adults						
Medium-educated parents	0.137	–0.071	–0.016	–0.094	–0.122	–0.184
	(0.210)	(0.212)	(0.212)	(0.186)	(0.184)	(0.182)
Highly educated parents	0.361*	0.093	0.233	0.003	–0.157	–0.130
	(0.214)	(0.216)	(0.216)	(0.191)	(0.188)	(0.187)
Test score parents	—	—	—	0.517***	0.536***	0.555***
	—	—	—	(0.045)	(0.045)	(0.044)
Constant	–0.175	0.005	–0.059	0.103	0.110	0.171
	(0.200)	(0.203)	(0.203)	(0.178)	(0.176)	(0.174)
Adjusted R^2	0.010	0.002	0.010	0.238	0.243	0.280
Observations	446	446	446	446	446	446

Source: Author's calculations based on SOEP version 26, years 2005 to 2008 (SOEP 2010).
Notes: Dependent variable: age-standardized scores of the child's skill measure.
"Test score parents" refers to the average of parents' age-standardized test scores when test scores for both parents are available.
Reference group: low-educated parents
Fluid intelligence refers to the coding speed of parents and young adult children (symbol correspondence test) and to the abstract reasoning of adolescents (matrix test). Crystallized intelligence refers to the word fluency of parents and young adults (animal-naming task) and to the verbal and numerical skills of adolescents (word analogies, arithmetic operations). General intelligence combines fluid and crystallized intelligence measures.
Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 16.3 Parental Education and Noncognitive Skills of Adolescent Children

	Internal LOC	External LOC	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
A.							
Medium-educated parents	–0.185	–0.0733	–0.049	0.014	–0.203	0.084	0.145
	(0.126)	(0.127)	(0.128)	(0.128)	(0.127)	(0.128)	(0.128)
Highly educated parents	0.007	–0.420***	0.158	–0.048	–0.130	0.082	0.018
	(0.128)	(0.130)	(0.130)	(0.130)	(0.129)	(0.131)	(0.130)
Constant	0.115	0.217*	–0.012	0.023	0.181	–0.078	–0.093
	(0.120)	(0.122)	(0.122)	(0.122)	(0.121)	(0.123)	(0.122)
Adjusted R^2	0.008	0.028	0.008	0.001	0.001	0.001	0.003
B.							
Medium-educated parents	–0.226*	0.060	–0.121	–0.021	–0.238*	0.057	0.151
	(0.124)	(0.123)	(0.126)	(0.126)	(0.125)	(0.126)	(0.126)
Highly educated parents	–0.048	–0.157	0.036	–0.056	–0.164	0.057	0.066
	(0.127)	(0.127)	(0.129)	(0.128)	(0.127)	(0.128)	(0.129)
Test score parents	0.131***	0.217***	0.173***	0.157***	0.168***	0.185***	0.144***
	(0.021)	(0.021)	(0.023)	(0.023)	(0.024)	(0.023)	(0.024)
Constant	0.156	0.025	0.074	0.040	0.207*	–0.075	–0.113
	(0.119)	(0.119)	(0.120)	(0.120)	(0.119)	(0.120)	(0.121)
Adjusted R^2	0.036	0.101	0.048	0.032	0.035	0.044	0.029
Observations	1184	1184	1184	1184	1184	1184	1184

Source: Author's calculations based on SOEP version 26, years 2005 to 2008 (SOEP 2010).
Notes: Dependent variable: age-standardized scores of the child's skill measure.
"Test score parents" refers to the average of parents' age-standardized test scores when test scores for both parents are available.
Reference group: low-educated parent.

Table 16.4 Parental Education and Noncognitive Skills of Young Adult Children

	Internal LOC	External LOC	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
A.							
Medium-educated parents	–0.267**	–0.072	0.281**	0.200	0.171	–0.017	–0.036
	(0.129)	(0.128)	(0.132)	(0.132)	(0.134)	(0.133)	(0.132)
Highly educated parents	–0.274**	–0.238*	0.422***	0.084	0.231*	–0.062	–0.048
	(0.130)	(0.129)	(0.133)	(0.133)	(0.134)	(0.133)	(0.133)
Constant	0.263**	0.105	–0.317**	–0.166	–0.189	0.033	0.026
	(0.126)	(0.125)	(0.129)	(0.129)	(0.130)	(0.129)	(0.129)
Adjusted R^2	0.001	0.007	0.007	0.003	0.001	0.001	0.001
B.							
Medium-educated parents	–0.262**	0.051	0.197	0.196	0.180	–0.012	–0.083
	(0.124)	(0.125)	(0.127)	(0.127)	(0.131)	(0.128)	(0.129)
Highly educated parents	–0.279**	–0.050	0.254**	0.122	0.236*	–0.056	–0.054
	(0.124)	(0.126)	(0.128)	(0.128)	(0.132)	(0.129)	(0.129)
Test score parents	0.236***	0.208***	0.233***	0.224***	0.188***	0.220***	0.204***
	(0.017)	(0.017)	(0.018)	(0.018)	(0.019)	(0.017)	(0.018)
Constant	0.257**	–0.043	–0.196	–0.187	–0.209	0.012	0.058
	(0.121)	(0.122)	(0.124)	(0.124)	(0.128)	(0.125)	(0.125)
Adjusted R^2	0.085	0.070	0.080	0.070	0.041	0.067	0.053
Observations	2228	2228	2228	2228	2228	2228	2228

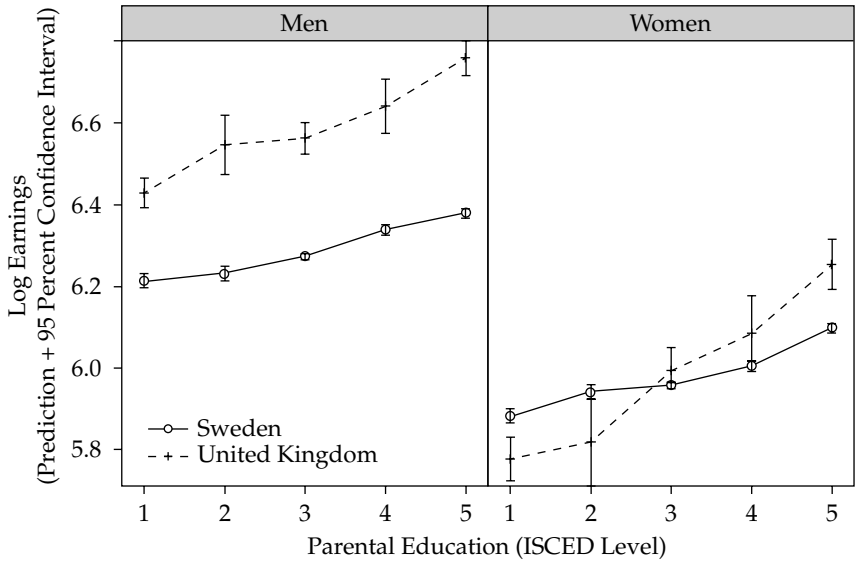
Source: Author's calculations based on SOEP version 26, years 2006 to 2008 (SOEP 2010).
Notes: Dependent variable: age-standardized scores of the child's skill measure.
"Test score parents" refers to the average of parents' age-standardized test scores when test scores for both parents are available.
Reference group: low-educated parents.
Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 16.5 Cross-National Comparison of Intergenerational Skill Transmission, Correlation Coefficients

	Germany		Norway	Sweden	United States	United Kingdom
	Adolescent Children	Young Adult Children	Young Adult Children	Young Adult Children	Young-Adolescent Children	Young-Adolescent Children
General intelligence						
Father-son	0.20	0.42	0.38	0.35	—	—
Parent-child	0.24	—	—	—	0.31	—
Crystallized intelligence						
Mother-daughter	0.19 (0.09)	—	—	—	0.22–0.24	—
Mother-son	0.19 (0.09)	—	—	—	0.15–0.20	—
Parent-child	0.24	—	—	—	—	0.08–0.25
Personality traits						
Mother-daughter	0.14–0.32	—	—	—	0.07–0.10	—
Mother-son	0.13–0.22	—	—	—	insign.	—
Locus of control						
Mother-daughter	0.14 (internal) 0.32 (external)	—	—	—	0.07 (mastery)	—
Mother-son	0.14 (internal) 0.22 (external)	—	—	—	insign.	—

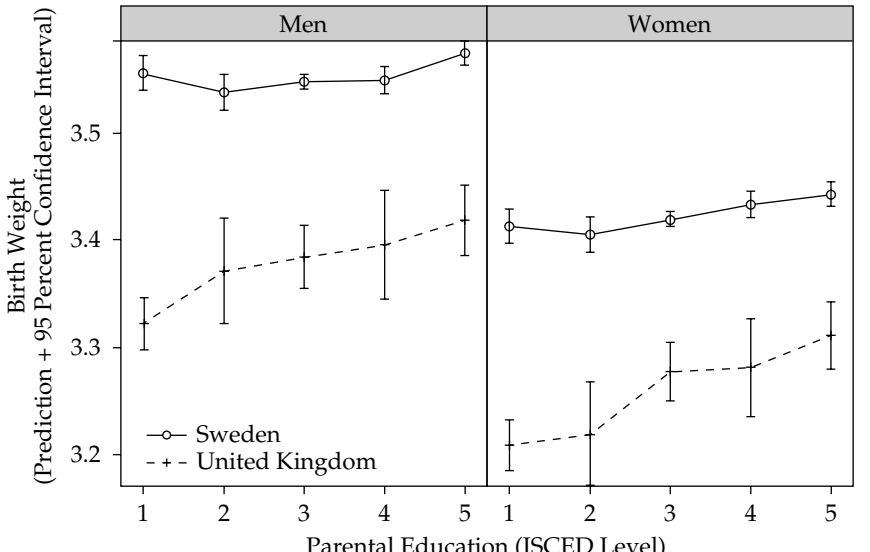
Sources: [Germany] Author's calculations based on data from SOEP (2010); Author's compilation of data from [Norway] Black, Devereux, and Salvanes (2009), [Sweden] Björklund, Eriksson, and Jäntti (2010), [United States] Agee and Crocker (2002), Mayer et al. (2004), Duncan et al. (2005), and [United Kingdom] Brown, McIntosh, and Taylor (2009).

Figure 17.1 Offspring Earnings on Parental Education



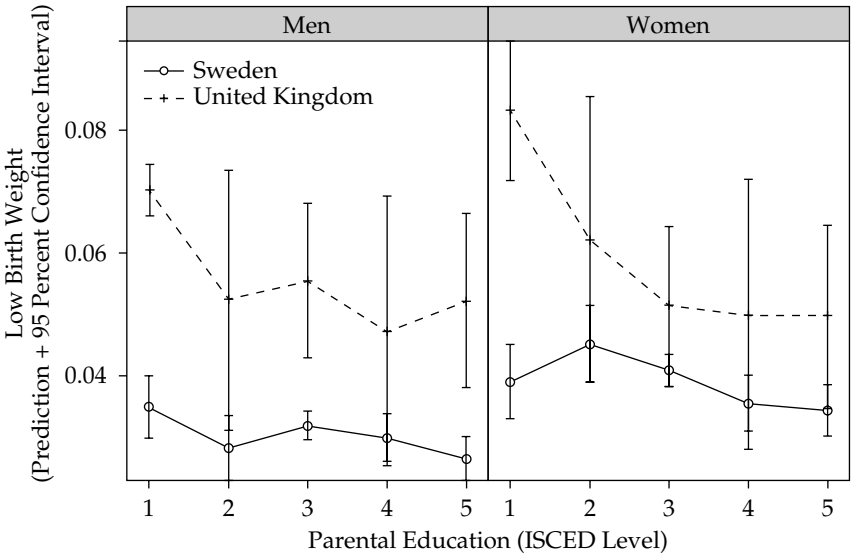
Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Gradient with respect to education level of parent.

Figure 17.2 Birth Weight on Parental Education

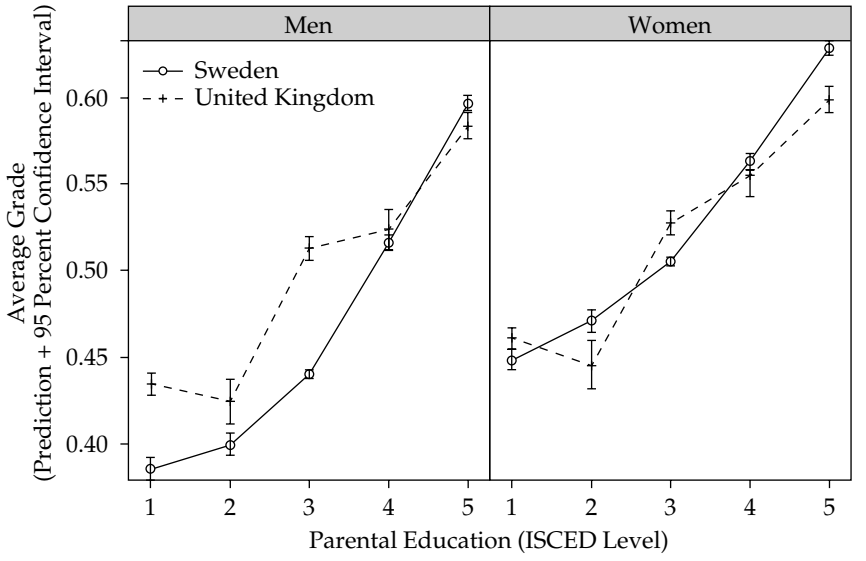


Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Gradient with respect to education level of parent.

Figure 17.3 Low Birth Weight on Parental Education

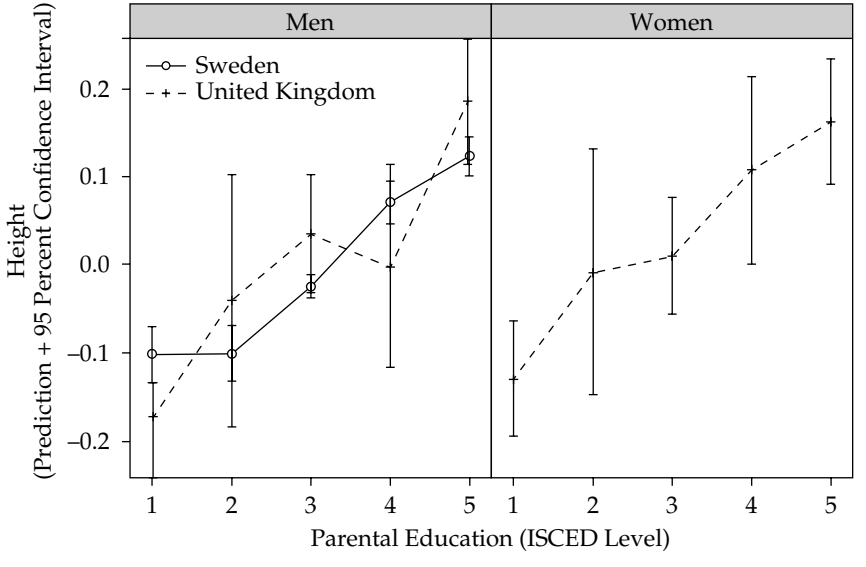


Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Gradient with respect to education level of parent.



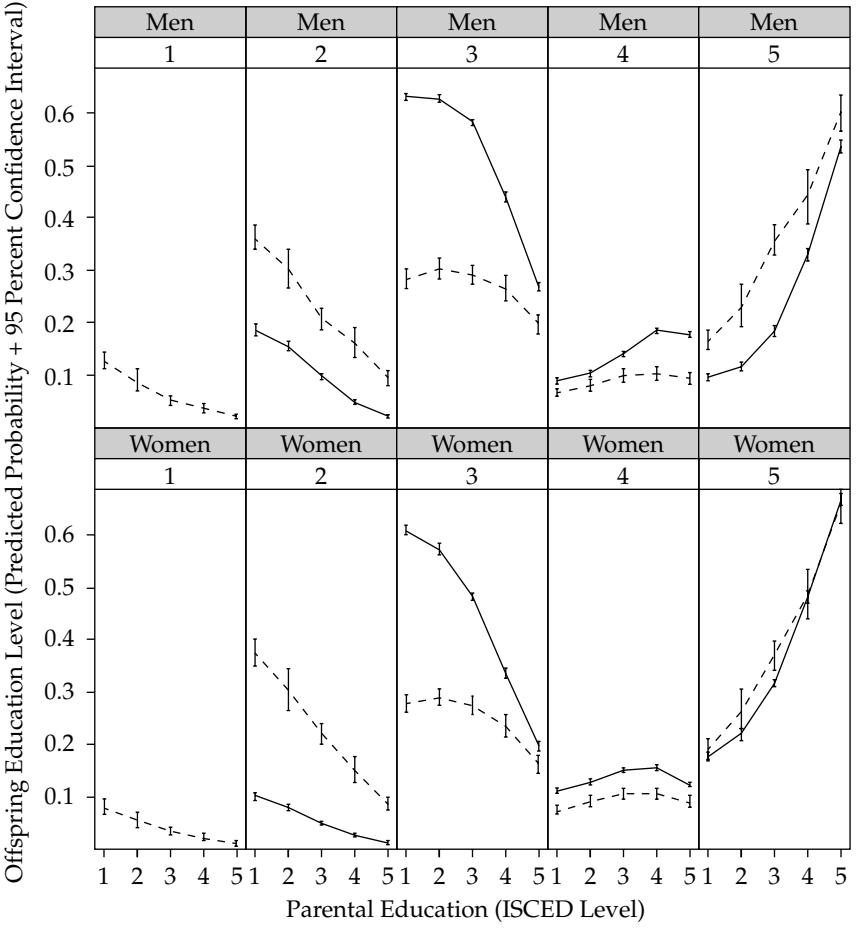
Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Gradient with respect to education level of parent.

Figure 17.5 Height on Parental Education



Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Gradient with respect to education level of parent (height is standardized to mean 0, standard deviation 1).

Figure 17.6 Child Education on Parental Education



Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Gradient of probability of different child education outcomes with respect to education level of parent.

Table 17.1 Parental Education, Age, and All Intervening Variables, with Height

		Men-Sweden	Men-United Kingdom	Women-United Kingdom
(Intercept)		4.770	6.198	3.584
		(0.204)	(0.618)	(0.858)
avggrade		0.503	0.570	1.026
		(0.015)	(0.136)	(0.191)
avgparage		0.024	–0.020	0.067
		(0.006)	(0.029)	(0.039)
birthweight		0.000	0.000	–0.000
		(0.000)	(0.000)	(0.000)
avgparage^2/10		–0.003	0.002	–0.008
		(0.001)	(0.003)	(0.005)
ISCEDkid (omitted: 1)	2	0.681	0.224	0.262
		(0.166)	(0.087)	(0.172)
	3	0.785	0.291	0.428
		(0.166)	(0.086)	(0.172)
	4	0.761	0.378	0.548
		(0.166)	(0.096)	(0.180)
	5	0.793	0.515	0.853
		(0.166)	(0.087)	(0.172)
ISCEDpar (omitted: 1)	2	–0.002	0.177	0.117
		(0.012)	(0.071)	(0.099)
	3	0.007	0.011	–0.030
		(0.009)	(0.042)	(0.059)
	4	0.028	0.033	–0.072
		(0.011)	(0.056)	(0.079)
	5	0.032	0.109	0.000
		(0.011)	(0.047)	(0.065)
lowbw		–0.031	–0.027	0.021
		(0.017)	(0.079)	(0.115)
zheight		0.024	0.035	0.065
		(0.003)	(0.017)	(0.022)
N		43620	1255	1371
k		15	15	15
σ		0.524	0.536	0.782
Adjusted R^2		0.0558	0.135	0.161

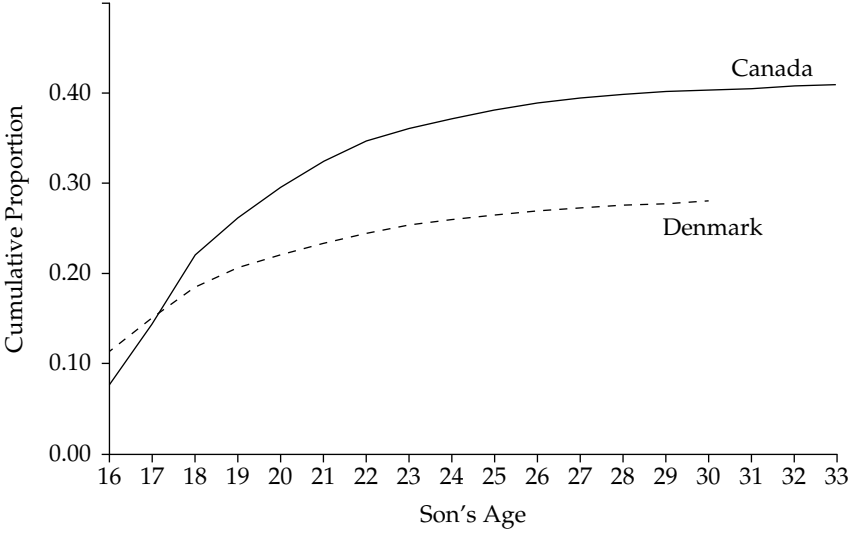
Source: Authors' calculations based on data from the 1970 British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Standard errors in parentheses.

Table 17.2 Parental Education, Age and All Intervening Variables, Without Height

		Men-Sweden	Men-United Kingdom	Women-Sweden	Women-United Kingdom
(Intercept)		4.666	6.206	4.466	4.488
		(0.179)	(0.468)	(0.272)	(0.633)
avggrade		0.514	0.506	0.452	0.839
		(0.014)	(0.107)	(0.013)	(0.140)
avgparage		0.030	–0.017	0.031	0.019
		(0.006)	(0.023)	(0.005)	(0.030)
birthweight		0.015	0.049	0.007	0.011
		(0.005)	(0.026)	(0.005)	(0.038)
avgparage^2/10		–0.004	0.002	–0.003	–0.002
		(0.001)	(0.003)	(0.001)	(0.004)
ISCEDkid (omitted: 1)	2	0.575	0.206	0.407	0.215
		(0.137)	(0.060)	(0.246)	(0.112)
	3	0.694	0.289	0.539	0.424
		(0.137)	(0.060)	(0.246)	(0.112)
	4	0.673	0.393	0.480	0.576
		(0.137)	(0.069)	(0.246)	(0.120)
	5	0.708	0.515	0.585	0.853
		(0.137)	(0.061)	(0.246)	(0.112)
ISCEDpar (omitted: 1)	2	0.003	0.116	0.047	0.089
		(0.012)	(0.051)	(0.012)	(0.073)
	3	0.016	0.002	0.040	0.047
		(0.009)	(0.033)	(0.009)	(0.043)
	4	0.034	0.049	0.058	0.007
		(0.011)	(0.044)	(0.010)	(0.059)
	5	0.033	0.102	0.109	0.100
		(0.011)	(0.037)	(0.010)	(0.049)
lowbw		–0.028	0.038	–0.012	–0.003
		(0.016)	(0.064)	(0.014)	(0.084)
N		46925	2226	42938	2365
k		14	14	14	14
σ		0.53	0.56	0.491	0.778
Adjusted R^2		0.0566	0.12	0.0657	0.165

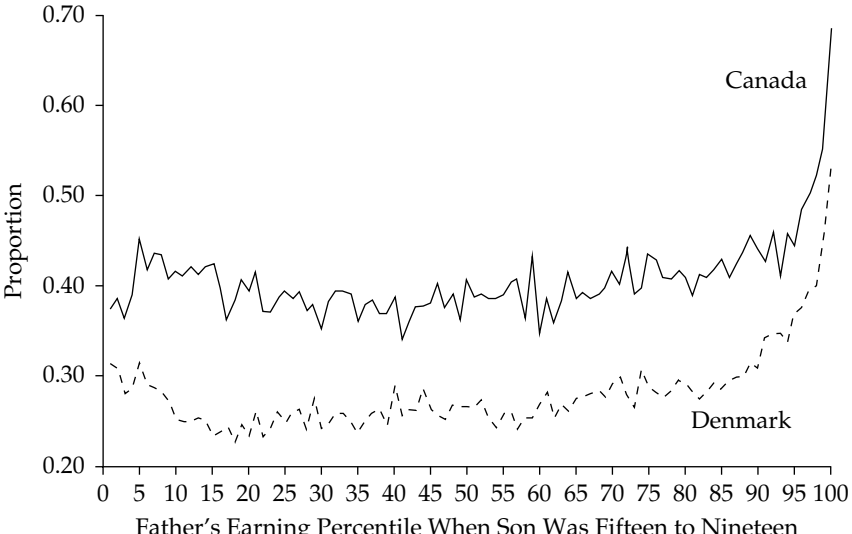
Source: Authors' calculations based on data from the 1970s British Cohort Study (Centre for Longitudinal Studies, various years) and Statistics Sweden (2010).
Note: Standard error in parentheses.

Figure 18.1 **Sons Employed at Some Point with Employer Fathers Worked for, by Son's Age**



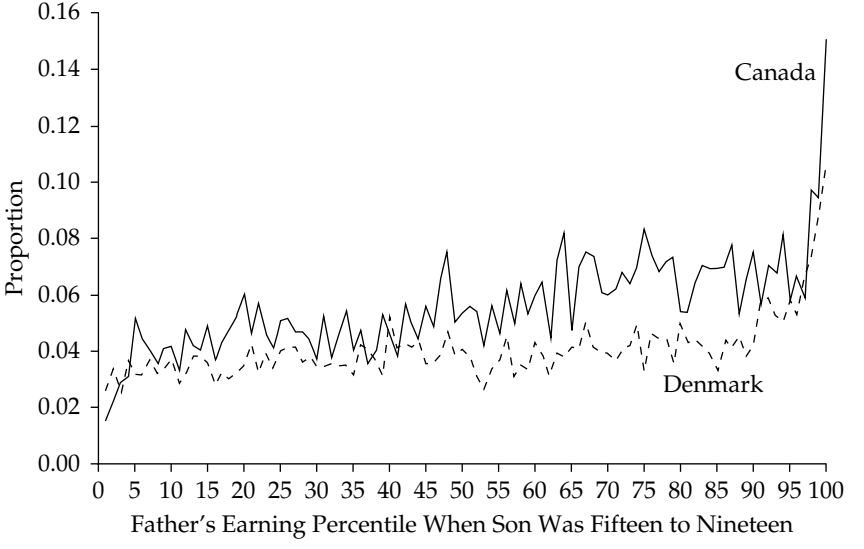
Source: Authors' calculations using Danish administrative data (documented in Statistics Denmark 2011 and described in Leth-Sørenson 1993) and Canadian administrative data (Corak and Piraino 2011, figure 1).

Figure 18.2 **Sons Employed at Some Point with Employer Fathers Worked for, by Fathers' Earnings**



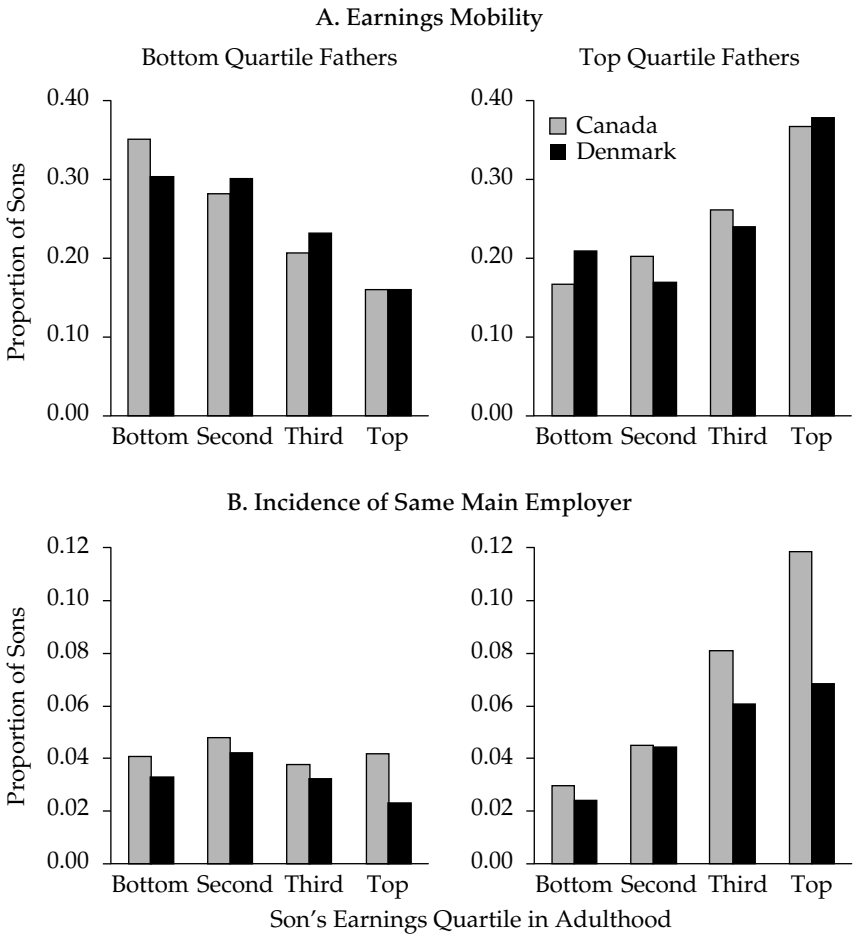
Source: Authors' calculations using Danish administrative data (documented in Statistics Denmark 2011 and described in Leth-Sørenson 1993) and Canadian administrative data (Corak and Piraino 2011, figure 2).

Figure 18.3 **Sons Employed as Young Adults with Same Main Employer as Fathers, by Fathers' Earnings**



Source: Authors' calculations using Danish administrative data (documented in Statistics Denmark 2011 and described in Leth-Sørenson 1993) and Canadian administrative data (Corak and Piraino 2010, figure 1).

Figure 18.4 **Earnings Mobility and Transmission of Employers for Sons Raised in Bottom- and Top-Earnings Quartiles**



Source: Authors' calculations using Danish administrative data (documented in Statistics Denmark 2011 and described in Leth-Sørenson 1993) and Canadian administrative data (described in Corak and Piraino 2010).

Table 18.1 Linear Probability Models of Correlates of Sons Having Same Employer as Fathers

	Canada	Denmark
1. Sons ever having same employer as father		
Natural logarithm of father's permanent earnings	−0.486	−0.718
Natural logarithm of father's permanent earnings squared	0.0431	0.070
Indicator father having self-employment income	0.0476	0.338
2. Sons having same main employer as father		
Natural logarithm of father's permanent earnings	−0.242	−0.359
Natural logarithm of father's permanent earnings squared	0.0175	0.0220
Indicator father having self-employment income	0.0054	0.0370

Source: Authors' calculations using Danish administrative data (documented in Statistics Denmark 2011 and described in Leth-Sørensen 1993) and Canadian administrative data (Corak and Piraino 2011, tables 4 and 5).

Notes: Panel 1 reports results from a linear probability model with the dependent variable being a 0–1 indicator of whether the son at any point between the ages of fifteen and thirty worked for an employer for which his father had previously worked. The overall incidence of this occurring is presented as the last data point in figure 18.1, approximately 0.40 in Canada and 0.28 in Denmark.

Panel 2 reports results from a similar model, but with the dependent variable being a 0–1 indicator of whether the son's main employer in adulthood, the employer accounting for the majority of earnings, was the same main employer of the father when the son was a teenager. The overall incidence of this occurring is 0.056 in Canada and 0.041 in Denmark.

Other controls in both models include: indicators for presence of farming, fishing, and professional income; indicators for firm death and firm size; industry employment growth rate; average years of schooling in two-digit industry; urban indicator, province-region indicators; two-digit industry indicators; interactions between earnings, schooling, and self-employment income.

All results are statistically significant at the 95 percent level of confidence.

Table 18.2 Intergenerational Earnings Elasticity and Impact of Same Main Firm Employment

	No Interactions		Fully Interacted Model			
	lnY	Constant	*lnY*	*lnY* × *SameFirm*	*SameFirm*	Constant
1. Canada						
10th percentile	0.328	5.86	0.309	*0.128*	*–0.938*	5.99
25th percentile	0.308	6.71	0.291	0.158	–1.43	6.83
50th percentile	0.253	7.48	0.238	0.177	–1.74	7.61
75th percentile	0.205	8.45	0.190	0.196	–2.01	8.59
90th percentile	0.170	9.05	0.158	0.190	–1.98	9.15
2. Denmark						
10th percentile	0.051	8.93	0.036	0.180	–1.84	9.29
25th percentile	0.132	9.65	0.123	0.135	–1.58	9.77
50th percentile	0.178	9.47	0.169	0.133	–1.62	9.56
75th percentile	0.195	9.49	0.188	0.138	–1.72	9.56
90th percentile	0.197	9.70	0.191	0.132	–1.67	9.77

Source: Authors' calculations using Danish administrative data (documented in Statistics Denmark 2011 and described in Leth-Sørensen 1993) and Canadian administrative data (described in Corak and Piraino 2010).

Notes: For the fully interacted model the reported coefficients are quantile regression estimates of the following model:

$$ln\ Y_{i,t} = \alpha + \beta\ lnY_{i,t-1} + \beta_1\ lnY_{i,t-1} \times SameFirm_i + \gamma_1 SameFirm_i$$

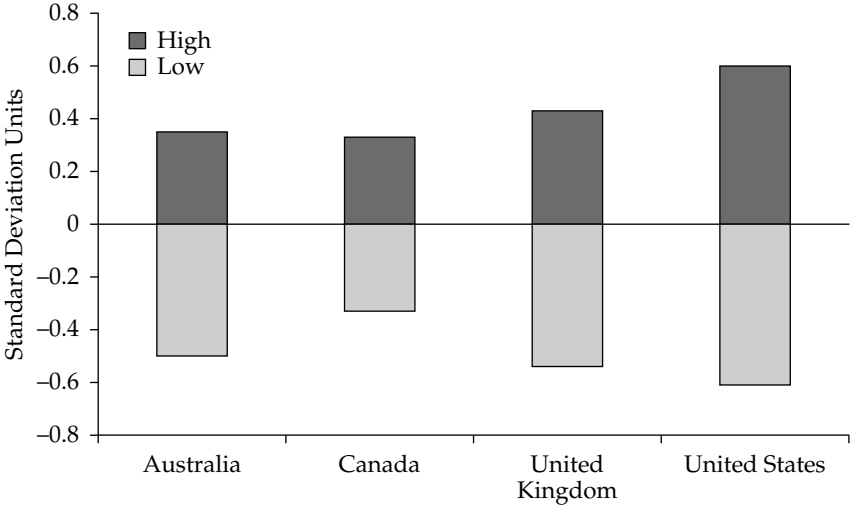
where t indexes the son's permanent earnings and t–1 the fathers. *SameFirm* is a binary indicator of whether the son was employed by the same employer as the father. The model also includes controls for the father's age and age-squared.

The no interactions model only has $lnY_{i,t-1}$ as a regressor.

All coefficients have margin significance levels of 0.000, except those italicized, which have a marginal significance level greater than 0.05.

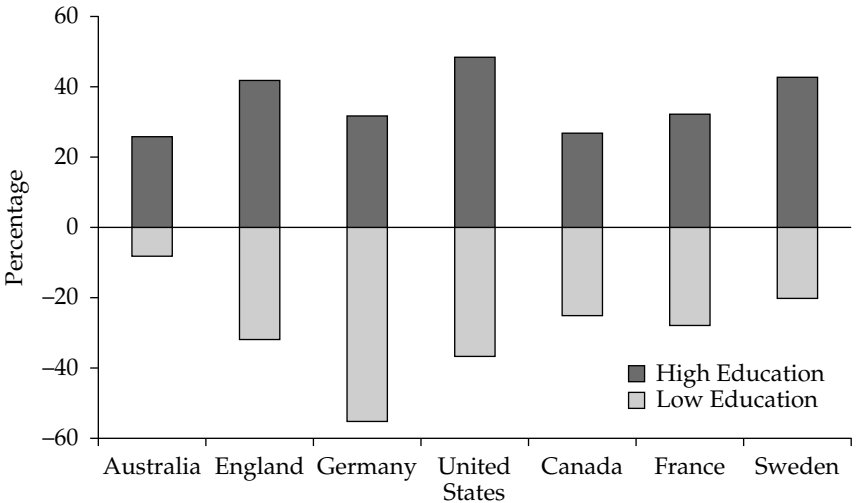
For Canada, the sample size is 71,215; for Denmark it is 191,471.

Figure 19.1 Differences in Vocabulary Scores, by Parents' Education



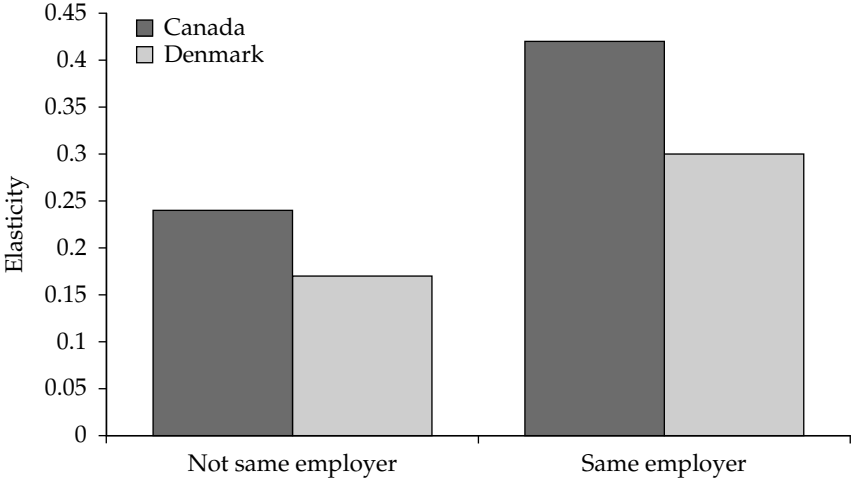
Source: Authors' calculations based on data from chapter 4, this volume.
Note: Differences presented in standard deviation units between average scores versus middle education.

Figure 19.2 **Differences in Top and Bottom Quartiles of Test Scores, by Parents' Education**



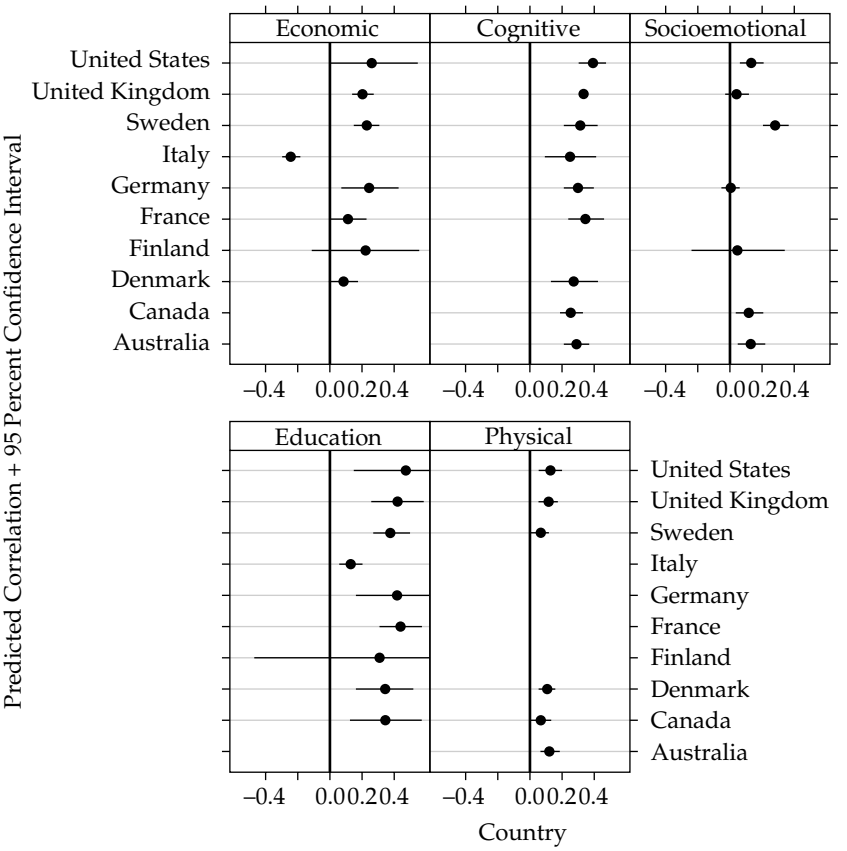
Source: Authors' calculations based on their own data.
Note: Australia and Canada observe the child at about age 15; England, about 14; Germany, about 17; United States, 13 to 16; France, about 11. Weighted data with exception of France. See chapter 12 for more detail.

Figure 19.3 Elasticity of Median Son's Earnings to Father's Earnings



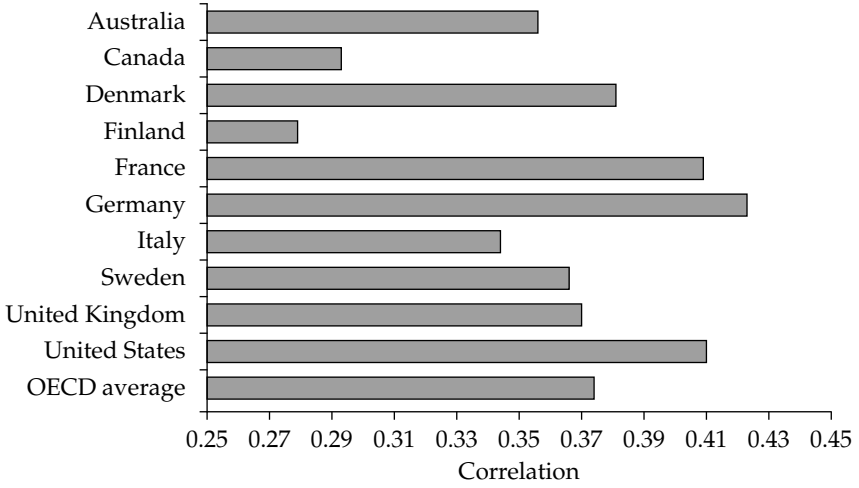
Source: Authors' calculations based on data from chapter 18, this volume, table 18.2.

Figure 19.4 **Estimated Socioeconomic Gradients Across Countries, Fitted Correlations Against Country**



Source: Authors' calculations based on their own data.
Note: Countries with values to the right of the vertical line have lower mobility than those to the left of the line. The further to the right the dot is, the greater the parental SES effect on child outcomes.

Figure 19.5 **OECD SES Background Measure and PISA Reading Test Score, 2009**



Source: Authors' calculations based on data from OECD (2010).