FAMILIES, ECONOMICS, GENES & INEQUALITY: DECONSTRUCTING SIBLING AND INTERGENERATIONAL CORRELATIONS

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TOPICS

- MEASURING INTERGENERATIONAL & SIBLING CORRELATIONS FOR SCHOOLING & EARNINGS
- INTERGENERATIONAL INEQUALITY
- THEORY: NATURE v NURTURE
- HYPOTHESIS TESTING
- EVIDENCE FROM ISRAEL
- POLICY IMPLICATIONS

3 PAPERS

- DO ABLER PARENTS HAVE FEWER CHILDREN? *OXFORD ECONOMIC PAPERS 2007*
- DECONSTRUCTING THE SIBLING CORRELATION *JOURNAL OF FAMILY & ECONOMIC ISSUES 2008*
- NATURE v NURTURE IN THE INTERGENERATIONAL TRANSMISSION OF INEQUALITY *JOURNAL OF INCOME DISTRIBUTION 2009*

MEASUREMENT

SCHOOLING & EARNINGS

INTERGENERATIONAL CORRELATIONS

	EARNINGS		SCHOOLING
CANADA CORAK & HEISZ 1999	0.2 (0 – 0.4)		
WISCONSIN PLUG 2004			0.39(F) 0.54(M)
SWEDEN BJORKLAND ET AL 2006	0.24		0.24(F) 0.24(M)
US (PSID) CHADWICK & SOLON 2002	0.53(S) 0.43(D)		
US (PSID) SOLON 1999	0.4		

SIBLING CORRELATIONS
EARNINGS

US	0.43	BJÖRKLAND et al 2002
DENMARK	0.23	BJÖRKLAND et al 2002
FINLAND	0.26	BJÖRKLAND et al 2002
NORWAY	0.14	BJÖRKLAND et al 2002
SWEDEN	0.43	BJÖRKLAND et al 2002
US (PSID)	0.45	SOLON & 1991
US (NLS)	0.37	ALTONJI & DUNN 1991

ATTENUATION BIAS

$$Y_c = \beta Y_p + u_c \qquad u_c \approx iid(0, \sigma_u^2)$$

$$Y_c = y_c + e_c \qquad Y_p = y_p + e_p$$

$$y_c = \beta y_p + v_c \qquad v_c = u_c - e_c + \beta e_p$$

$$E(v_c y_p) = E\left[(u_c - e_c + \beta e_p)(Y_p - e_p)\right] = -\beta\sigma_{ep}^2$$

$$\hat{\beta}_{OLS} = \frac{\text{cov}(y_c y_p)}{\text{var}(y_p)}$$

$$p\lim \hat{\beta}_{OLS} = \beta - \frac{\beta\sigma_{ep}^2}{\text{var}(y_p)} < \beta > 0 \qquad (\textit{current correlation attenuation bias})$$

$$p\lim \hat{\beta}_{IV} = \beta \qquad (\textit{permanent correlation})$$

MATCHED CENSUS DATA FOR ISRAEL

- CENSUSES FOR 1983 & 1995 MATCHED
- PART A HOUSEHOLD MEMBERS 100%
- PART B EARNINGS, SCHOOLING ETC 20%
- MATCH ADULT CHILDREN IN 1995 WITH PARENTS IN 1983 (PROB = $0.2^2 = 0.04$)
- MATCH SIBLINGS IN 1995 (PROB = $0.04^2 = 0.0016$)
- MATCH PARENTS AND ADULT CHILDREN IN 1995 (PROB = 0.0016)
- IN 1995 MANY ADULT CHILDREN STILL “AT HOME”
- ATTRITION DUE TO DEATH, EMIGRATION, DATA ERROR
- NO ATTRITION DUE TO TRACING
- LARGE MATCHED SAMPLE

Table 1. Household Transitions 1983-1995

Age of children in 1983	Number	Relationship to head of household in 1995 – percent			
		Child	Self	Spouse	Other
0 – 5 years	16,644	14,890	972	41	741
6 – 10 years	14,955	11,444	1,742	890	879
11 – 15 years	11,868	4,848	3,390	2,816	814
16 – 20 years	9,141	1,400	4,103	3,242	396
21 – 25 years	4,819	613	2,686	1,386	134
26 – 30 years	1,616	300	934	316	66
31 – 35 years	547	170	281	71	25
36 – 40 years	234	74	113	29	18
> 40 years	274	71	154	21	28

INTERGENERATIONAL MATCHES

Match	Total	Not Left Nest by 1995
Parents 1983	60,104 (13,877)	33,816 (5,697)
Parents 1983 and 1995	28,963 (5,689)	24,181 (4,248)

Number of earners in parentheses.

SIBLING MATCHES IN 1995

Number of Siblings	1983 Household	New Household	Total
2	6011	2907	8918
3	2573	936	3509
4	748	335	1083
5	261	181	442
6	97	80	177
7	38	39	77

Intergenerational Correlation Coefficients: Education

(Years of Schooling)

	Sons	Daughters
Heads of household	0.2885	0.3345
22+ years in 1995	0.3235	0.3892
27+ years in 1995	0.3605	0.4036
32+ years in 1995	0.3384	0.3622
37+ years in 1995	0.3160	0.3317
42+ years in 1995	0.2592	0.2929
Fathers	0.2928	0.3479
Mothers	0.2678	0.3427

Years of education of adult children not currently studying in 1995 and parents in 1983.

Intergenerational Correlation Coefficients: Earnings

	Sons			Daughters		
	Raw Data	Age-adjusted	Permanent	Raw Data	Age-adjusted	Permanent
All	0.0458	0.0715	0.2578	0.0359	0.0461	0.1397
Salaried parents & children	0.1022	0.1325	0.3421	0.0709	0.1072	0.2274
Children aged 22+ in 1995	0.0877	0.1566	0.3791	0.0623	0.1242	0.2690
Children aged 27+ in 1995	0.1579	0.1855	0.5069	0.1509	0.1983	0.4162
Children aged 32+ in 1995	0.1843	0.2079	0.5237	0.1379	0.1821	0.4030

Earnings of head of household in 1983 and adult children in 1995.

Sibling Correlation Coefficients

	Schooling[1]		Earnings	
	Correlation	Sample Size	Correlation	Sample Size
Brothers sisters	0.435	6926	0.221	3114
Brothers	0.417	2062	0.304	1025
Sisters	0.561	1408	0.185	604
Brother – Sister	0.416	1905	0.157	825
Sister – Brother	0.351	1551	0.239	668

[1] Excludes those currently studying.

INEQUALITY
GINI COEFFICIENT

	CURRENT EARNINGS	PERMANENT EARNINGS	SCHOOLING
HOUSEHOLD HEADS 1983	0.384	0.215	0.351
MOTHERS 1983	0.377	0.283	0.442
FATHERS 1983	0.380	0.202	0.327
SONS 1995	0.368	0.190	0.139
DAUGHTERS 1995	0.340	0.247	0.144
CHILDREN 1995	0.370	0.236	0.142

SIBSIZE & INEQUALITY

Inequality and Sibsize

		Schooling			Earnings	
	Sibsize	N	Mean	CV(%)	Mean	CV(%)
All	1	1071	13.75	20.13	4779	99.35
	2	2949	13.27	17.29	3499	81.92
	3	3439	13.09	16.48	3372	76.71
	4	2006	12.65	17.06	3297	88.91
Brothers	1	625	13.95	18.22	5832	97.51
	2	1490	13.12	17.93	4252	78.40
	3	1727	12.84	17.00	4084	75.26
	4	1030	12.37	17.80	3955	90.97
Sisters	1	446	13.95	18.23	3304	68.56
	2	1450	13.42	16.57	2724	73.94
	3	1712	13.34	15.75	2655	64.06
	4	976	12.96	15.98	2602	67.25

GINI MOBILITY INDEX

$$S = \frac{G_p(1 - \Gamma_{pc}) + G_c(1 - \Gamma_{cp})}{G_p + G_c}$$

$$\Gamma_{pc} = \frac{\text{cov}(Y_p, R_c)}{\text{cov}(Y_p, R_p)}$$

$S = 0$ *zero mobility*

$S = 1$ *complete mobility*

$S = 2$ *reverse mobility*

INTERGENERATIONAL MOBILITY
GINI MOBILITY INDEX

	CURRENT EARNINGS	PERMANENT EARNINGS	SCHOOLING
HOUSEHOLD HEADS	0.906	0.792	0.585
MEN	0.898	0.758	0.580
WOMEN	0.926	0.892	0.530

THEORY

TOPICS

- BEHAVIORAL GENETICS
- MANSKI DECOMPOSITION
- INEQUALITY WITHIN & BETWEEN GENERATIONS
- BETA & SIGMA CONVERGENCE
- NATURE – NURTURE MODELS
- QUALITY- QUANTITY THEORY OF FERTILITY
- ASSORTATIVE MATING

BEHAVIORAL GENETICS

- Y = G + F + S
- G GENETIC COMPONENT
- F FAMILY COMPONENT
- S IDIOSYNCRATIC COMPONENT
- VAR(Y) = VAR(G) + VAR(F) + VAR(S) + 2COV(G,F)
- g + f + s = 1
- g = var(G)/var(Y) f = var(F)/var(Y) s = var(S)/var(Y)
- Cov(G,F) = 0

MANSKI DECOMPOSITION

$$Y_c = \beta Y_p + \gamma Y_s + \delta B_c + \varepsilon_c$$

$$Y_s = \beta Y_p + \gamma Y_c + \delta B_s + \varepsilon_s$$

$$B_c = B_s$$

β *correlated effect*

γ *endogenous effect*

δ *contextual effect*

$$r_{cs} = \frac{\operatorname{cov}(Y_c Y_s)}{sd(Y_c)sd(Y_s)} = \frac{\beta^2 \operatorname{var}(Y_p) + \delta^2 \operatorname{var}(B) + 2(\beta\gamma \operatorname{cov}(Y_p Y_c) + \beta\delta \operatorname{cov}(Y_p B))}{(1-\gamma^2)\operatorname{var}(Y_c)}$$

$$r_{cs} = 2\frac{\beta\gamma}{1-\gamma^2}\frac{sd(Y_p)}{sd(Y_c)} r_{pc} + \frac{\beta^2 \operatorname{var}(Y_p) + \delta^2 \operatorname{var}(B) + 2\beta\delta \operatorname{cov}(Y_p B)}{(1-\gamma^2)\operatorname{var}(Y_c)}$$

INTERGENERATIONAL INEQUALITY DYNAMICS

- BETA CONVERGENCE: REGRESSION TOWARDS MEAN
- SIGMA CONVERGENCE: FALLING INEQUALITY

$$Y_c = \beta Y_p + u_c \quad 0 < \beta < 1 \quad \textit{beta convergence}$$

$$u_c = \rho u_p + \varepsilon_c \quad 0 < \rho < 1 \quad \textit{inherited ability (Galton)}$$

$$\sigma_c^2 = \beta^2 \sigma_p^2 + \sigma_{uc}^2$$

$$\sigma_{uc}^2 = \rho^2 \sigma_{up}^2 + \sigma_\varepsilon^2 \xrightarrow{a} \frac{\sigma_\varepsilon^2}{1-\rho^2}$$

$$\sigma_Y^2 \xrightarrow{a} \frac{1+2\beta\rho(1+\beta\rho)}{(1-\beta^2)(1-\rho^2)}\sigma_\varepsilon^2 \quad \textit{sigma convergence}$$

RELATION BETWEEN BETA & SIGMA CONVERGENCE

- SIGMA CONVERGENCE IMPLIES BETA CONVERGENCE
- BETA CONVERGENCE DOES NOT IMPLY SIGMA CONVERGENCE
- SIGMA DIVERGENCE DOES NOT IMPLY BETA DIVERGENCE
- BETA DIVERGENCE DOES NOT IMPLY SIGMA DIVERGENCE

$$\hat{\beta} = \frac{\sigma_{CP}}{\sigma_P^2} = \frac{r_{CP}\sigma_C\sigma_P}{\sigma_P^2} = r_{CP}\frac{\sigma_C}{\sigma_P}$$

$$\sigma_C < \sigma_P \quad \textit{sigma convergencœ}$$

ASSORTATIVE MATING

- COUPLES DO NOT MATE RANDOMLY
- ABLER MEN MATE WITH ABLER WOMEN
- SEXUAL REPRODUCTION INDUCES INEQUALITY
- ASSORTATIVE MATING INCREASES INEQUALITY

$$u_c = \rho u_p + \varepsilon_c$$

$$u_p = \tfrac{1}{2}(u_m + u_f)$$

$$\text{var}(u_p) = \tfrac{1}{4}\left[\text{var}(u_m) + \text{var}(u_f) + 2\,\text{cov}(u_m u_f)\right]$$

$$\text{cov}(u_m u_f) = r_{mf}\, sd(u_m)\, sd(u_f) > 0$$

SIBLING INTERACTION INCREASES INEQUALITY

$$u_1 = \rho u_p + \lambda u_2 + \varepsilon_1 \qquad u_2 = \rho u_p + \lambda u_1 + \varepsilon_2$$

$$u_1 = \frac{\rho(1+\lambda)u_p + \varepsilon_1 + \lambda\varepsilon_2}{1-\lambda^2} \qquad u_2 = \frac{\rho(1+\lambda)u_p + \varepsilon_2 + \lambda\varepsilon_1}{1-\lambda^2}$$

$$u_c = \tfrac{1}{2}(u_1 + u_2)$$

$$\text{var}(u_c) = \tfrac{1}{4}\left[\text{var}(u_1) + \text{var}(u_2) + 2\,\text{cov}(u_1 u_2)\right] = \tfrac{1}{2}\left[\text{var}(u) + \text{cov}(u_1 u_2)\right]$$

$$\text{var}(u) = \frac{\rho^2(1+\lambda)^2\,\text{var}(u_p) + 2(1+\lambda^2)\,\text{var}(\varepsilon)}{(1-\lambda^2)^2}$$

$$\text{cov}(u_1 u_2) = \frac{\rho^2(1+\lambda)^2\,\text{var}(u_p) + 2\lambda\,\text{var}(\varepsilon)}{(1-\lambda^2)^2}$$

$$\text{var}(u_c) = \frac{\rho^2(1+\lambda)^2\,\text{var}(u_p) + \left[1+\lambda^2+\lambda\right]\text{var}(\varepsilon)}{(1-\lambda^2)^2}$$

QUALITY – QUANTITY THEORY

- PARENTS WANT MORE CHILDREN, BUT ALSO WANT TO EDUCATE THEM
- IF EDUCATION BECOMES MORE EXPENSIVE THEY CHOOSE TO HAVE FEWER CHILDREN: LESS QUANTITY MORE QUALITY
- SAME APPLIES IF RETURN TO SCHOOLING INCREASES
- ABLER PARENTS WANT FEWER CHILDREN BECAUSE THEY THINK THAT THEIR CHILDREN ARE ABLER THAN AVERAGE
- IF THE CAPITAL MARKET IS IMPERFECT SCHOOLING CANNOT BE FINANCED BY CREDIT
- BETTER-OFF PARENTS CAN AFFORD TO BUY MORE SCHOOLING FOR THEIR KIDS

BASIC MODEL

$Y_c = \alpha_0 + \alpha_1 E_c + \alpha_2 X_c + u_c$ *"Mincer Model"*

$E_c = \beta_o + \beta_1 Y_p + \beta_2 E_p + \beta_3 Z_c + v_c$ *Schooling Model*

$u_c = \rho u_p + \varepsilon_c$ *Earning Ability*

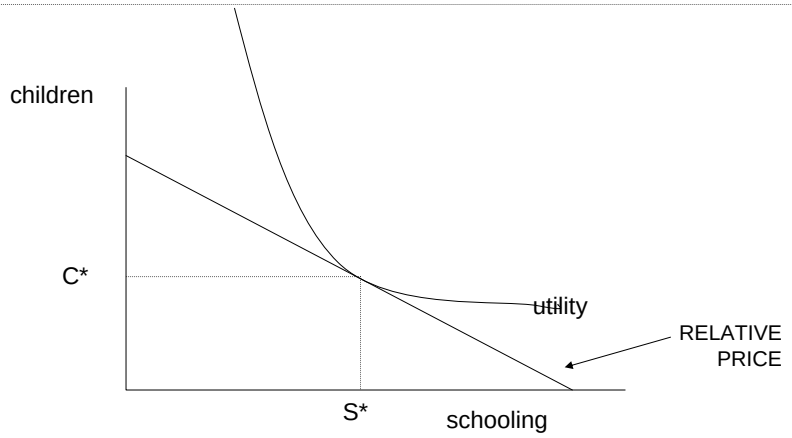
$v_c = \theta v_p + e_c$ *Learning Ability*

genetic (nature) effects: $\rho,\ \theta$

nurture effects: $\beta_1,\ \beta_2$

contextual effects if X_c *and* Z_c *correlated with* X_p *and* Z_p

QUANTITY v QUALITY THEORY OF FERTILITY



HYPOTHESIS TESTING

EMPIRICAL ANALYSIS

PROBLEMS

- NO DATA FOR ABILITY
- ABILITY MEDIATED THRU OBSERVABLES
- CAUSAL EFFECTS OF NURTURE NOT IDENTIFIED
- NAÏVE ESTIMATES CONFOUND NATURE AND NURTURE
- AND CONTEXTUAL EFFECTS TOO

SOLUTIONS

- 1. QUASI EXPERIMENTS:
- COMPARE ADOPTED AND BIOLOGICAL CHILDREN
- COMPARE CHILDREN OF MZ TWIN MOTHERS
- 2. NATURAL EXPERIMENTS:
- PARENTS & CHILDREN FACE DIFFERENT ENVIRONMENTS
- 3. PROXYING ABILITY:
- IQ
- “MINCER RESIDUALS”

SCHOOLING CORRELATIONS & FAMILY

- TWINS BORN BETWEEN 1917-27 n = 4000
- BEHRMAN & TAUBMAN (1989)

IDENTICAL TWINS	0.75
FRATERNAL TWINS	0.55
SIBLING	0.34
FATHER	0.34
FIRST COUSIN	0.13
SPOUSE	0.54

BEHRMAN & ROSENZWEIG (2002)
CORRELATIONS FOR SCHOOLING

- DAUGHTERS & MOTHERS 0.332
- SONS & FATHERS 0.446
- DAUGHTERS & MZ TWIN MOTHERS -0.245 (not significant)
- SONS OF MZ MOTHERS AND FATHERS 0.356

PLUG (2004)

PARTIAL CORRELATIONS FOR SCHOOLING

- BIOLOGICAL CHILDREN AND MOTHERS 0.538
- ADOPTED CHILDREN AND MOTHERS 0.276
- BIOLOGICAL CHILDREN AND FATHERS 0.389
- ADOPTED CHILDREN AND FATHERS 0.267

BJÖRKLAND, LINDAHL & PLUG (2006)

SWEDEN : PARTIAL CORRELATIONS

	SCHOOLING	EARNINGS
BIO KIDS -BIO FATHER	0.24	0.235
ADOPTEES - FATHER	0.114	0.098
ADOPTEES- BIO FATHER	0.113	0.047
BIO KIDS- BIO MOTHER	0.243	
ADOPTEES- MOTHER	0.074	
ADOPTEES- BIO MOTHER	0.132	

SACERDOTE (2007)

KOREAN ADOPTEES IN US: CORRELATIONS WITH PARENTS

	BIO KIDS	ADOPTEES
SCHOOLING	0.338	0.135
INCOME	0.277	0.11

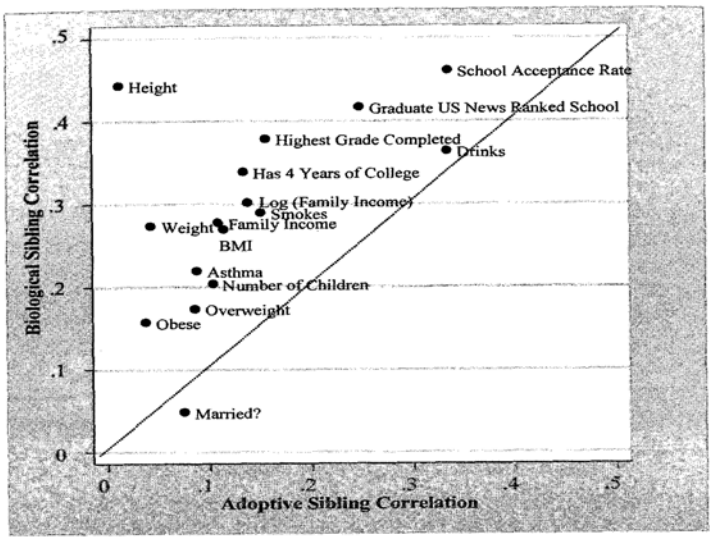


FIGURE IV

Comparison of Adoptive and Nonadoptive Sibling Correlations for Various Outcomes

This graph displays the results in Table IV.

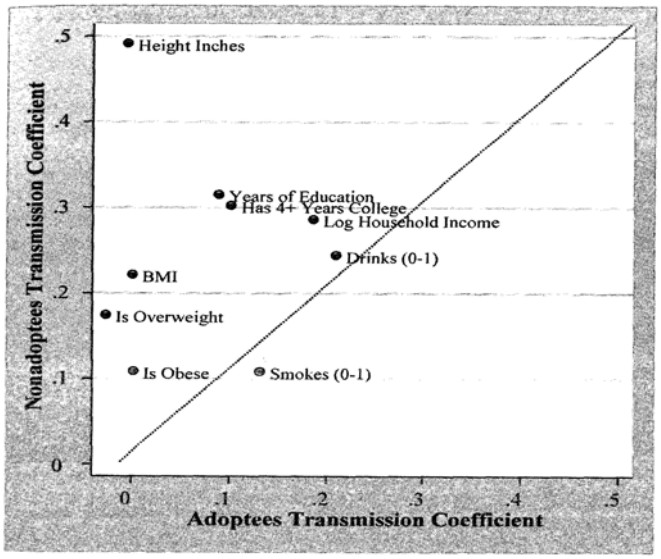


FIGURE V
Comparison of Coefficient of Transmission from Parent to Child
Graph shows coefficient from a regression of child's outcome on mother's outcome for adoptees and nonadoptees in the sample.

QUESTIONS

- ARE ADOPTEES RANDOMLY ASSIGNED TO FAMILIES?
- DO ADOPTED PARENTS TREAT ADOPTEES DIFFERENTLY?
- DO ADOPTEES SHARE THE SAME ENVIRONMENT?
- ARE MZ TWINS AFFECTED BY EPIGENETIC DRIFT?
- WHAT IS THE COUNTERFACTUAL FOR THE CHILD?

DECOMPOSING NATURE & NURTURE

- UNOBSERVED ABILITY CONFOUNDS THE CAUSAL EFFECT OF NURTURE

$$Y_c = \alpha + \beta Y_p + u_c$$

$$u_c = \rho u_p + \varepsilon_p$$

$$E(Y_p u_c) = E\left[(\alpha + \beta Y_g + u_p)(\rho u_p + \varepsilon_c)\right] = \rho\sigma_{up}^2 + \beta\rho^2\sigma_{ug}^2 > 0$$

$$\Rightarrow \rho(1+\beta\rho)\sigma_u^2$$

$$p\lim\hat{\beta} \Rightarrow \beta + \rho(1+\beta\rho)\frac{\sigma_u^2}{\sigma_{Yp}^2} > \beta$$

$$Y_c = \alpha + \beta Y_p + \rho u_p + \varepsilon_c$$

RESULTS FOR ISRAEL

1.CAUSAL EFFECT OF NURTURE BY PARENTS ON SCHOOLING OF CHILDREN

2. GENETIC EFFECT OF PARENT ABILITY ON CHILDRENS' SCHOOLING & EARNINGS.

3. SIBLING INTERACTIONS IN SCHOOLING & EARNINGS

4. DO ABLER PARENTS HAVE LOWER FERTILITY?

5. MEASURING UNOBSERVED ABILITY

MEASURING ABILITY

MINCER RESIDUALS FOR PARENTS

CORRELATION BETWEEN EARNING & LEARNING ABILITY 0.19

$$LogY_{pi} = \alpha + \sum_{k=1}^{K} \pi_k X_{kpi} + u_{pi}$$

$$E(X_k u_p) \neq 0 \ ?$$

Estimated Residuals for Parents: Summary Statistics for Fitness

Year	Variable	Observations	R^2	Standard deviation	Skewness	Kurtosis	Jarque-Bera
1983	Earnings	126,970	0.3511	0.6492	-0.8106	3.3633	14,599
1995	Earnings	286,450	0.3823	0.6366	-0.8850	2.7034	38,437
1983	Schooling	224,087	0.2157	0.3547	-0.9185	4.0136	41,100

Source: Beenstock (2007).

SCHOOLING OF CHILDREN

Education of Children in 1995

Variable	Parameter estimate		t-statistic	
Intercept	1.4950	*1.4759*	44.29	*28.2*
Non-Jew	-0.0588	*-0.0669*	-10.04	*-8.55*
Age	0.0252	*0.0215*	21.44	*16.65*
Age^2	-0.0003	*-0.0003*	-15.49	*-12.85*
Male	-0.0438	*-0.0434*	-13.70	*-13.59*
Only child	0.0177	*0.0172*	2.79	*2.58*
Eldest of two	0.0172	*0.0196*	3.80	*4.27*
Eldest of three	0.0194	*0.0227*	4.51	*5.26*
Youngest of four	-0.0465	*-0.0570*	-1.09	*-1.33*
Years since immigration	-0.0024	*-0.0021*	-6.22	*-4.92*
$\ln W_p$	0.0596	*0.0448*	7.95	*4.53*
$\ln E_p$	0.0805	*0.2017*	3.63	*4.56*
Parent ability (RESE)	0.0219	*-0.0935*	1.02	*-2.13*
Parent ability (RESW)	-0.0321	*-0.0191*	-4.39	*-1.90*
N			12,173	
R^2 adjusted	0.2535	*0.2563*		
Standard error of estimate	0.1710	*0.1707*		

Dependent variable: Logarithm of years of completed schooling by children. Controls for continent of origin if not born in Israel and continent of origin of father if not born in Israel. Reference group: 3rd generation Jewish woman born in Israel. Data excludes those who were studying in 1995. Consistency-corrected estimates in italics.

CHILDREN'S EARNINGS

Children's Earnings in 1995

Variable	Coefficient estimate		t-statistic	
Intercept	4.3081	*3.8870*	43.65	*8.11*
Age	0.1107	*0.0993*	19.30	*13.51*
Age^2	-0.0012	*-0.0011*	-14.35	*-10.69*
Male	0.3639	*0.3978*	24.62	*22.69*
Education	0.1146	*0.1683*	9.15	*7.99*
Parent ability (RESE)	-0.1243		-4.41	
Parent ability (RESW)	0.0057	*0.5765*	0.58	*5.26*
N			12,173	
R^2 adjusted	0.3506	*0.3531*		
Standard error of estimate	0.6215	*0.6203*		

Dependent variable is logarithm of childrens' earnings. Method of estimation: NLIV. Consistency-corrected estimate in italics. Controls used for 9 occupations, 14 economic branches, continents of origin for fathers and children as in Table 8. Base: 3rd generation Jewish women born in Israel.

ABILITY & SIBSIZE

Inequality in Ability and Sibsize

	Sibsize	Learning Ability		Earning Ability
		N	Standard deviation	Standard deviation
All	**1**	1071	0.2141	0.6719
	2	2940	0.1527	0.6608
	3	3439	0.1452	0.6107
	4	2006	0.1581	0.6242
Brothers	**1**	625	0.2413	0.6859
	2	1490	0.1602	0.6885
	3	1727	0.1502	0.6276
	4	1030	0.1647	0.6275
Sisters	**1**	446	0.1689	0.6505
	2	1450	0.1442	0.6302
	3	1712	0.1402	0.5935
	4	976	0.1508	0.6209

SIBLING CORRELATIONS FOR ABILITY

Sibling Correlations for Estimated Residuals

	Schooling	Earnings	Number of Pairs
All siblings	0.3049 0.3079	0.1030	1342 2102
Brothers	0.3725 0.4193	0.1750	385 616
Sisters	0.3504 0.2933	0.0657	309 461
Brother 1 Sister 2	0.2285 0.2247	0.0657	386 605
Sister 1 Brother 2	0.2086 0.1968	0.0953	262 420
Married siblings	0.2194 0.1928	0.1493	327 470
Single siblings	0.3680 0.3498	0.1299	671 1094
Sibling 1 Sibling 3	0.3304 0.2399	0.0738*	305 616
Sibling 1 Sibling 4	0.3617 0.4443	0.1705*	64 114
Age gap 1-3 years	0.3412	0.1222	726
Age gap 3-4 years	0.2234	0.0771*	310
Age gap 6+ years	0.3235	0.0748*	306

ASSORTATIVE MATING CORRELATIONS

- SCHOOLING 0.56
- EARNINGS
- ABILITY 0.4

Fertility: Poisson Regression Estimates of Equation (6)

	1983		1995	
	Model 1 Household Heads	**Model 2** Couples	**Model 3** Household Heads	**Model 4** Couples
Intercept	-1.1711	-1.1308	-1.7521	-1.6967
	(16.54)	(11.92)	(32.0)	(29.63)
Ability: head of	-0.2531	-0.0137	-0.0082	-0.0087
Household	(4.42)	(1.97)	(1.95)	(1.92)
Ability: spouse		-0.0417		0.0004
		(4.79)		(0.06)
Income: head	-1.6800	0.204	-8.8100	-6.2200
of household	(8.02)	(0.70)	(8.41)	(3.64)
School: Head	-0.0187	-0.0041	-0.0133	-0.0086
of household	(21.40)	(3.52)	(17.41)	(9.37)
Schooling:		-0.0337		-0.0108
spouse		(25.69)		(10.09)
Age: head of	-0.0231	-0.0195	-0.0111	-0.0109
household	(30.18)	(22.96)	(16.73)	(16.18)
Censor	6.0577	6.2673	6.6017	6.6193
	(32.50)	(25.16)	(46.37)	(44.81)
$Censor^2$	-3.4674	-3.6588	-4.4421	-4.4237
	(25.44)	(20.64)	(42.83)	(41.17)
Years married	0.0356	0.0297	0.0917	0.0906
	(41.64)	(30.74)	(60.20)	(57.76)
Years $married^2$			-0.0013	-0.0013
			(43.57)	(42.24)
Non Jew	0.5052	0.5296	0.2332	0.2241
	(27.11)	(24.05)	(19.54)	(18.15)
Non Jew			-0.1817	-0.1955
Immigrant			(6.74)	(6.95)
Observations	33,849	23,614	68,069	64,653
Pseudo R^2	0.1078	0.1224	0.1155	0.1158

The dependent variable is the number of children born to the mother in the household. Absolute t statistics are reported in parentheses. Country of origin controls in use. Censor = Θ in equation (7) with f = 2.0189, g = 0.2079, and A_0 = 17.