INTERGENERATIONAL TRANSMISSION OF EDUCATION AND SOCIO-ECONOMIC STATUS: A LOOK AT IMMIGRANTS, VISIBLE MINORITIES AND ABORIGINALS

March 1997

Fernando Mata, Multiculturalism Branch,

Department of Canadian Heritage

EXECUTIVE SUMMARY

Using the Canadian Longitudinal Survey of Income and Labour Dynamics (SLID 1993), the author examined the patterns of the intergenerational transmission of education and socio-economic status among immigrants, visible minorities and Aboriginal workers. The schooling and socio-economic attainments of sons and daughters were related to that of their father's and mother's educational levels through a path analytic model suggested by social status attainment theory.

The analysis permitted the:

▸ identification of characteristics associated with the transmission of education and socio-economic status

▸ estimation of rates of conversion of schooling into socio-economic attainments

▸ assessment of the magnitude of "blockages" present in the transmission process which affect different groups

Key findings of the analysis:

▸ Children born to highly-educated parents were the most likely to achieve higher schooling and socio-economic attainments.

▸ Intergenerational transmission of education and socio-economic status tends to be ethno-specific.

▸ Parents of similar education tend to marry one another; that is, an educationally-selective mating process takes place.

▸ Although both parents "transmitted" education to their offsprings, the father's education was the most frequent in being transmitted.

▸ By "transmitting" their education and increasing their children's schooling, parents increased their children's chances of favourable economic attainments.

▸ Not all population subgroups are able to convert their higher schooling attainments into occupational achievements and monetary rewards.

▸ Significant blockages are present in the transmission process for Canadian and foreign-born visible minority daughters as well as Aboriginal sons and daughters.

TABLE OF CONTENTS

Page

1.   INTRODUCTION

The question of how the educational and socio-economic status attainment of Canadians of different immigrant and ethnic backgrounds are related to the socialization process is becoming an important issue in social policy. Parents play a paramount role in the development of the child's ambitions, future career plans, desired level of schooling and social status expectations. However, little is known yet about how these parents transmit education and socio-economic status to their children in Canada. Is this process similar or dissimilar for all immigrant or ethnic groups? Will parents of different ethnic backgrounds be equally successful in transmitting their education to their children and, thus, enhancing their chances of upward social mobility? Studying the mechanics of the intergenerational transmission of education and socio-economic status sheds light on the ultimate role of parents in the educational process and the rate of human capital transfer from one generation to the next. It may be useful in assessing the rate at which schooling is converted into higher labour force participation, better occupations and high paying jobs across different social groups.

Children are raised within different family and ethnic milieus, each one characterized by different motives, aspirations, educational ideals and desires. Parental family influences may be important in explaining ethnic differentials in terms of attainment of post-secondary education, occupational and income levels. For instance, the 1991 census figures indicate that, among individuals aged 15+, those of Jewish and Asian ethnic backgrounds were among the most likely to achieve post-secondary educational levels than other groups. Aboriginals, Southern European and some individuals of French ancestry were at the lower end of the educational scale. Past research has also shown that second generation Canadians of different ethnic backgrounds had also the highest rates of

educational, occupational and income mobility which exceeded the achievement of British or French groups (Kalbach et. al. 1984, Richmond, 1986).
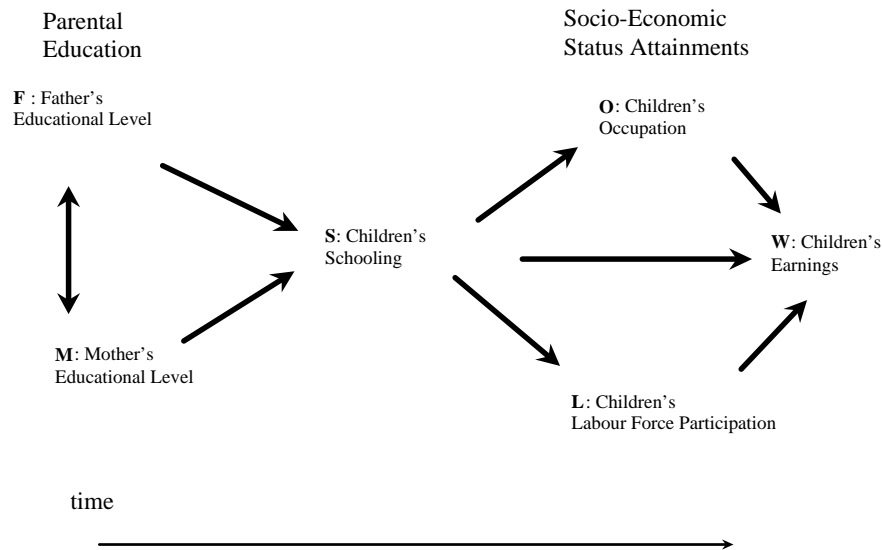
Parents are capable of reproducing in their offspring not only their biological characteristics but also their social and economic ones. One of the most consistent findings cited in the literature of social mobility in North America refers to the intergenerational transmission of education and socio-economic status (Porter et. al. 1979; Conklin and Daily, 1981). Regardless of their social status, race or ethnic backgrounds, high status&educated parents will tend to produce high status&educated offsprings. Parents may transmit their education and social class characteristics to their children in several ways such as, for instance, mobilizing economic and family resources, promoting the values of higher education in the family context or providing their children with a widest possible range of educational options (Coleman and Rainwater, 1978). Parental educational encouragement is also an important vehicle by which parents translate their achievement and mobility values into role expectations which are internalized by their children. The benefits of being socialized by highly educated parents are widely predicated in the literature: *individuals whose parents are well educated, will generally, go farther than those whose parents are less well educated and/or who have lower status jobs* (Hunter, 1981).

The study of how parental family environments may affect the social, occupational and economic status of their children has been an area of primary research concern in the U.S. and Canada. Several theoretical models have been proposed already to account for the phenomenon of intergenerational transmission of education and socio-economic status. Social attainment theory, however, offers the simplest and more powerful explanatory model (Duncan et. al. 1972; Boyd et. al., 1985) The causal logic of the model has a recursive structure, flowing from

ascriptive characteristics of the individual to achievement -related ones. The former factors represent traits acquired at birth (e.g. gender, ethnicity, family types, etc.) while the latter represent those mostly attributed to individual efforts (e.g. schooling, jobs, income levels, etc).

Diagram 1 displays the causal linkages of the social status attainment model. Arrows represent the predicted causal impacts   Succinctly stated, the transmission model suggests that, by making their children attain higher levels of schooling , highly educated parents will indirectly contribute to the children's labour market success. This success will be measured by three positive socio-economic outcomes: higher labour force participation and well paid high status jobs.

Diagram 1: Intergenerational Transmission of Education and SES Model

Parental
Education

Socio-Economic
Status Attainments

F : Father's
Educational Level

O: Children's
Occupation

S: Children's
Schooling

W: Children's
Earnings

M: Mother's
Educational Level

L: Children's
Labour Force Participation

time

The transmission model makes two basic predictions about the educational and socio-economic attainment of children. These are that:

▸   the father and the mother will transmit to their children a level of schooling commensurate with their own educational levels,

▸   the higher schooling of children (received from their parents or attained by their own efforts) will produce three positive labour force outcomes: higher participation in the labour force, higher likelihood of working in high status occupations and higher earnings.

Expressing these predictions in symbols in the diagram:

▸   Via the children's schooling (**S**), parental educational levels (**F** and **M**) will have indirect impacts over time on the children's labour force participation (**L**), their occupational status (**O**) and earnings (**W**).

▸   As an intervening variable, children's schooling (**S**) will have both direct impacts and indirect impacts via their labour force participation (**L**) and their occupational status (**O**) on earnings (**W**).

▸   **F** and **M** should be somewhat correlated.

Social status attainment theory predicts that the transmission process will vary across different population segments and across categories of race, social class, immigration status and ethnicity. Child socialization processes and initial entry into labour markets are likely to be closely related to the specific circumstances surrounding the socio-economic integration process as well as to the complex set

of achievement values which may predominate in each social group. Gender differentiated role expectations is also expected to influence the transmission process and, thus it is suggested that a separate analysis for sons and daughters be carried out (Boyd, 1985).

Immigrants, visible minorities and Aboriginal groups in Canada are experiencing great difficulty in terms of socio-economic integration and may be at a greater risk of economic and social marginalization. They are affected by higher unemployment rates, lower incomes and are more likely to be concentrated in manual jobs than other groups. These groups have paramount importance for present government efforts to redress societal imbalances such as employment equity and multiculturalism policy. Recent research has shown that both men and women of these groups are among the most likely to be disadvantaged in terms of economic attainments and access&participation in Canadian labour markets (Pendakur and Pendakur, 1996). A study of their patterns of intergenerational transmission of education and socio-economic status may be extremely useful in assessing how human capital is passed from one generation to the next and if educational achievement is adequately translated into positive labour force outcomes. Possible "blockages" in the transmission process may alert to the presence of systemic barriers, ethnic&racial discrimination processes and other structural causes which may limit their participation in society.

Using as its analytical tool a transmission model proposed by social status attainment theory and as its data base the Canadian Longitudinal Survey of Income and Labour Dynamics (SLID 1993), the purpose of this paper is to take a brief look at the patterns of the intergenerational transmission of education and socio-economic status across immigrant, visible minority and Aboriginal groups present in the Canadian labour force. Its major foci is on three areas: 1) identifying

patterns and main parental agents of transmission, 2) assessing the rates of conversion of schooling into positive labour force outcomes across groups and 3) determining if there are any blockages present in the transmission process.

The study is, basically, descriptive in nature. Its basic thrust is to pinpoint the main patterns of the intergenerational transmission process across different ethnocultural groups. It does not intend to systematically explain why these groups are economically or socially disadvantaged in the labour market. It attempts to produce valuable information on the parental correlates of educational, occupational and income attainments among immigrant&ethnic groups so that this can be helpful in social policy programming.

2.   DATA AND VARIABLES

Longitudinal surveys have several methodological advantages over cross-sectional surveys. Cross-sectional designs take a one-shot look at phenomena and introduce recall biases when collecting information from respondents. Longitudinal panel designs do not have these problems and provide "fuller" pictures of causal structures. They also allow for a better assessment of the reliability of measuring instruments.

The data for this study is drawn from the individual files of the Survey of Labour and Income Dynamics 1993 (SLID 1993). The SLID 1993 is a longitudinal household survey conducted by Statistics Canada. Its panel design, subset of the regular Canadian Labour Force Survey, allows for the study of the changes in the economic well-being of individuals and families over time as well as their multiple determinants. The survey covers a variety of items related to the Canadian labour force such as employment, job quality, economic mobility, earnings and

educational advancement. The survey contains information on close to 31,000 adults aged 15 years old and over who were interviewed during January 1993 and January and May 1994. The first interview collected information on the demographic and personal history of respondents, while the second and third focused on employment, occupational and income-related aspects. Interviews were completed using computer assisted interviewing.

The sample examined comprised 25,528 members of the labour force aged 15-64. Women ("daughters") numbered 13,226 individuals (52%) of the total while the number of men ("sons") comprised 12,302 (48%). The Canadian born totalled 21,880 (86%) individuals while immigrants totalled 3,648 (14%). The weighted and unweighted counts for each ethnocultural group of the sample are presented in Table 1.

Due to data suppression present in the individual files of the SLID 1993, variable breakdowns were available only at the Canada level. The relatively small counts available for Canadian born visible minorities and Aboriginal groups became a further limitation. Breakdowns by birthplace, visible minority status and Aboriginal status of workers were made broad enough to allow for minimal sample sizes (no less than 60 respondents) which could make the statistical results both reliable and valid. Longitudinal weighting of the observations was applied to take into account design effects of this panel type of survey.

Parental Education Variables

The parent educational level was captured by the following question: What was the highest level of education completed by the respondents' father (mother)? Was it elementary school, some high school, completed high school, trade/vocational

school, post-secondary certificate or diploma or university degree? Although this variable was not of the ideal interval measurement level required, it allowed for the manipulation of its ordinal properties. Educational level scores were constructed for each parent according to the following coding: 1=elementary level, 2=high school level , 3=post-secondary non university level and 4=post-secondary university level.

Children's Age, Schooling and Socio-Economic Attainment Variables

Age was captured in five-year intervals so age midpoints (19-62) were used as proxies. The children's schooling variable used here refers to the completed years of schooling (0-20+) reported during the January 1993 interview. Three standard socio-economic status attainment measures of the children's socio-economic attainments were used in this analysis. Labour force participation was approximated by the number of weeks employed during all jobs held during 1993-94. Occupational status was measured by a summary index of the type of jobs reported during the year based on a Pineo-Porter occupational classification scale. This classification had six major categories: unskilled workers, semi-skilled workers, skilled workers, supervisors&foremen, semi-professional&technical and professional&managerial jobs. A score of 0-100 in 20-point intervals was assigned to these categories in ascending order. Finally, the earnings measure chosen was the total earnings product of wages&salaries from all jobs held during the year. The latter was based on the wage rates and hours information collected during the labour interview of January 1994.

Immigrant&Ethnic Breakdowns

The definitions of birthplace, visible minority status and aboriginal status followed the standards used in the 1991 Census of Canada. Five major geographical regions of birthplace categories were available: Canada, the U.S., Europe, Asia and Other countries. Visible Minority and Aboriginal Status were available as binary categories (yes/no). Visible minorities were identified using the definition developed by the Interdepartmental Working Group on Employment Equity for the 1991 Census. Aboriginal status was captured by using a question in which the respondent answered if he/she was or was not a Treaty Indian or a registered Indian as defined in the *Indian Act of Canada* (Aboriginal target variable).

Table 1: Ethnocultural Groups of the SLID 1993 Sample

	N Unweighted	N Weighted
Ethnocultural Groups		
All	25528	19028603
Sons	12302	9305603
Daughters	13226	9722999
Birthplace Groups		
Canadian –born sons	10525	7352737
Canadian –born daughters	11355	7634530
U.S.-born sons	109	83488
U.S.-born daughters	168	129102
European-born sons	914	1007853
European-born daughters	1000	1074092
Asian-born sons	217	386506
Asian-born daughters	211	374263
Other Countries-born sons	147	279489
Other Countries-born daughters	158	312112

	N Unweighted	N Weighted
Visible Minority Status Groups		
Canadian- born sons visible minorities	71	91754
Canadian- born daughters visible minorities	68	78190
Foreign-born sons visible minorities	319	595868
Foreign-born daughters visible minorities	341	633490
Canadian-born sons non visible minorities	10476	7281379
Can.- born daughters non visible minorities	11304	7565897
Foreign- born sons non visible minorities	1085	1166852
Foreign-born daughters non visible minorities	1224	1294056
Aboriginal Status Groups		
Non - Aboriginal status sons	12232	9267272
Non - Aboriginal status daughters	13130	9662087
Aboriginal Status sons	70	38331
Aboriginal Status daughters	96	60912

3.   PATH MODEL

Path analysis was chosen as the main multivariate technique of analysis. This statistical technique is useful in examining the causal linkages between variables ordered in a time sequence and in determining their relative importance across different groups. Path models often reveal (unlike conventional regression analysis) factors such as parental education which, although may not be directly influential on other dependent variables, may nevertheless have significant indirect influences.

The path analytic model was fitted to 25 groups of workers ("sons" and "daughters") of different immigrant, visible minority and Aboriginal backgrounds to identify patterns of educational and socio-economic status transmission within each group.

The seven variable path model chosen to analyse the SLID 1993 is displayed in diagram 2. Single-headed arrows represent assumptions of unidirectional causation and the two-headed arrow represents a correlation not interpreted in causal terms. The association between the father's and mother's education and the direct impacts of parental education on other variables are displayed as dashed arrows, while other impacts are represented by full arrows. Residual paths or the unmeasured error terms (thicker arrows) represent all other possible influences which may account for the variation of the endogenous variables. It should be noted that the children's age at the time of the survey, being an important variable correlated with the status attainment process of the children, was treated here as an independent variable and added to the model.

Diagram 2: Path Model Used to Analyse the SLID 1993 data

F: Father's
Educational Level
Jan 1993

RPs

RPo

RPw

Pwf

Psf

Pof

Pws

S: Children's
Schooling
Jan 1993

Pos

O: Children's
Occupational
Status
1993-94

Pwo

W: Children's
Total Earnings
1993-94

Psm

Psa

Pom

Pwa

Pwl

Pwm

M: Mother's
Educational Level
 Jan 1993

Poa

A: Children's
Reported Age
Jan 1993

Pls

Pla

L: Children's
Working Weeks
1993-94

Plm

Plf

RPl
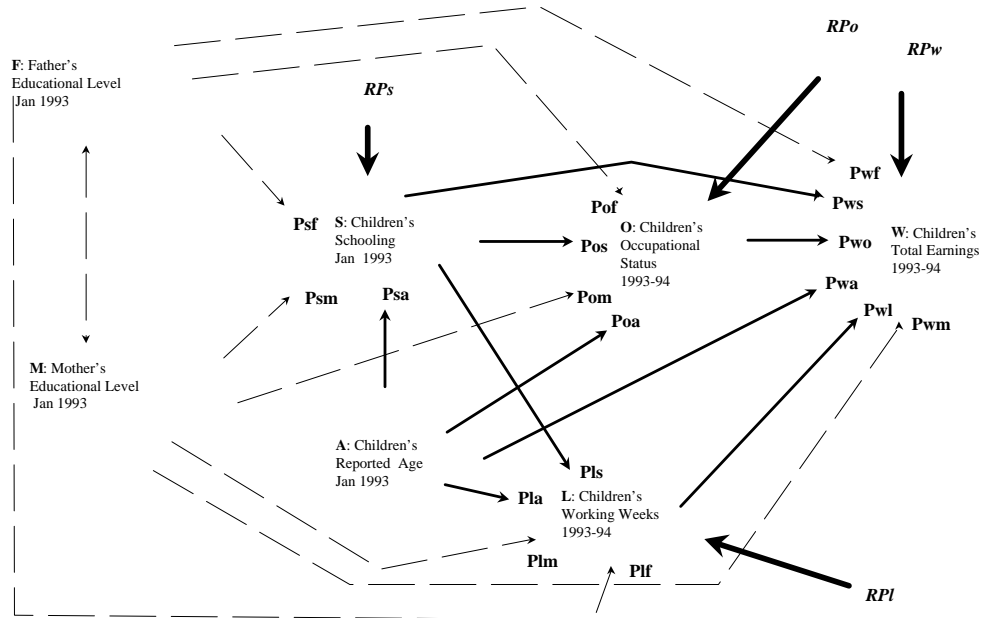
In path analytic terms, the arrow diagram of figure 2 represents one correlation
($r_{f,m}$) and four structural equations (one for each of the outcome variables S, L, O
and W) reflecting the causal structure of the transmission process. In symbols,
these structural equations are:

$$S = P_{sf}(F) + P_{sm}(M) + P_{sa}(A) + RP_s$$

$$L = P_{lf}(F) + P_{lm}(M) + P_{la}(A) + P_{ls}(S) + RP_l$$

$$O = P0_{of}(F) + P_{om}(M) + P_{oa}(A) + P_{os}(S) + RP_o$$

$$W = P_{wf}(F) + P_{wm}(M) + P_{wa}(A) + P_{ws}(S) + P_{wl}(L) + P_{wo}(O) + RP_w$$

The P_{ij}'s represent parameters called "path" coefficients[1]. These measure the relative impact of variables on each other in a sequential fashion. The four structural equations of the transmission model are linear in the P_{ij}'s and do not have a constant term because they are standardized (i.e. they have a mean of zero and a standard deviation of 1). The recursive nature of the model is confirmed by the absence of feedback loops or reciprocal linkages between the endogenous variables or outcomes.

---

[1] * Path coefficients are the beta coefficients of multiple regression analysis. In contrast to metric coefficients, they measure impacts in standard deviation units of the dependent variable. Given that every path coefficient is a standardized measure of impact, it can be interpreted as the expected percentage change (in standard deviation units) in the dependent variable for every 100% change in the independent variable controlling for other influential variables. The adjustment formula for the beta coefficient is:

x = (Sx / Sy) Bx

where: **x** is the beta coefficient associated with predictor **x**, **Bx** is the metric regression coefficient associated with predictor **x**, **Sx** is the standard deviation of predictor **x** and **Sy** is the standard deviation of the dependent variable **y**.

Based on past knowledge about the status attainment process, the following theoretical expectations were anticipated for the path coefficients of the model:

Parents Educational Level (F,M)	Occupational Status (O)
$r_{f,m} > 0$	$P_{om} \approx 0$
	$P_{of} \approx 0$
Children's Schooling (S)	$P_{os} > 0$
$P_{sf} > 0$	$P_{oa} \neq 0$
$P_{sm} > 0$	
$P_{sa} > 0$	
	Earnings (W)
Children's Working Weeks (L)	$P_{wf} \approx 0$
$P_{lf} \approx 0$	$P_{wm} \approx 0$
$P_{lm} \approx 0$	$P_{wa} \neq 0$
$P_{la} \neq 0$	$P_{ws} > 0$
$P_{ls} > 0$	$P_{wl} > 0$
	$P_{wo} > 0$

The transmission model has imbedded in its formal structure several aspects of interest related to the study of the intergenerational transmission process. The parameters of the model provide valuable information on the:

▸   educational similarities among the parents within each group;

▸   strength of the father's or mother's educational transmission within the group;

▸   rate of conversion of the higher schooling acquired by children into higher labour force participation, occupational achievements and earnings;

▸   blockages which may be present in the transmission process.

Due to the recursive nature of the model and the restrictions imposed on the number of parameters in the model , the path coefficients were estimated using ordinary least squares (OLS) one equation at a time. It should be noted that the path model tested here has made rather stringent assumptions about measurement errors and the required interval levels of measurement for the variables of the model , and as a consequence of this decision , only the basic standard path analytical technique developed by Simon&Blalock was used to analyse the SLID 1993 data. The transmission model, however, could be refined introducing structural and measurement specifications and handled through more advanced structural equation modelling techniques such as LISREL.

4.   FINDINGS

Confirming the general prediction of the transmission model, as the parents' educational level increased so did the means of the children's schooling (see Chart 1). This monotonic increase in schooling ranged from an average 10.8 completed years to 14.8 for the father's level and from 10.7 years to 14.4 years for the mother's level. The greatest increase in schooling occurred between the elementary and high school education of the parents. Similar patterns of increase in schooling were observed for both sons and daughters (see chart 2).}

Chart 3 displays the mean occupational scores of children with respect to the educational level of the parents. The close association between education and occupational status is shown in the "steepness" of the slope made by consecutive bars which compare the mean Pineo-Porter occupational scores of children to their own education. Individuals with university levels of education had the highest occupational scores, reflecting the predominance of professional&managerial types of jobs. When the occupational scores were compared to the parents' levels

of education there was also an increase of mean scores but it was less dramatic. Sons and daughters whose parents had university education had the highest occupational status scores (53.2 and 52.9 respectively).

The height and sequence of the bars displayed in Chart 4 reveal the presence of a less predictable association between the children's earnings, their schooling and parental educational levels, although there were clear differences between the mean earnings of sons and daughters. For sons, although there was a rise in earnings with an increase in their educational level, individuals with high school education were comparatively disadvantaged with respect to individuals of other levels. Among daughters, there was a more even increase in earnings as their educational levels rose up. In contrast, the mean earnings of children did not necessarily increase or decrease with a change in the educational level of the parents. In fact, there was a slight earnings advantage for both sons and daughters whose parents had only achieved high school educational levels.

From an intergenerational perspective, previous research (also using the SLID 1993 data) showed that two out of three Canadians exceeded the educational level of their parents, particularly between non post secondary and post secondary levels (Fournier, Butlin and Giles, 1994). The likelihood of reaching post-secondary educational levels was greater if one of the parents also had post secondary education. The gains in post secondary educational of sons and daughters were evident across all the groups examined. Table 2 shows that U.S.-born sons and daughters, Asian- born sons and foreign born visible minority sons topped the list of those who made the largest gains.

Chart1/ Mean of Child's Schooling by Educational Level of Parents: All Sample

Mean of Children's Schooling
(Completed Years)

SONS&DAUGHTERS

	Father's Education				Mother's Education			
	Elementary	High School	P.S. Non University	P.S University	Elementary	High School	P.S Non University	P.S University
Value	10.8	13.1	13.4	14.8	10.7	13.2	13.7	14.4
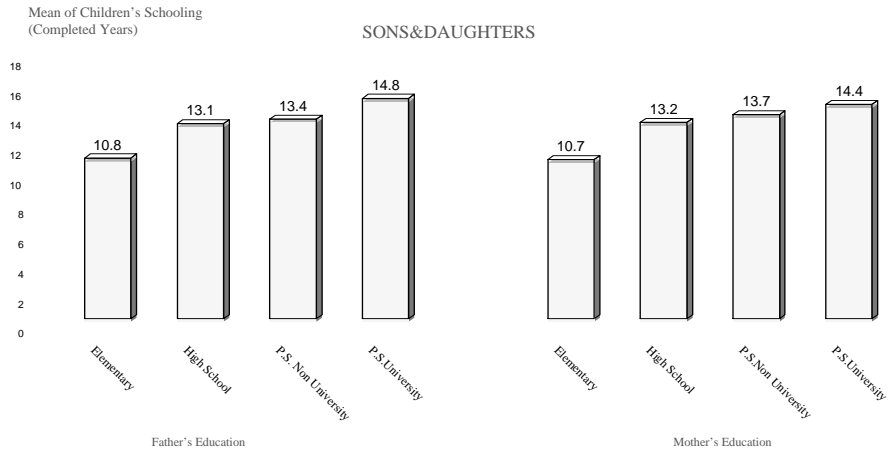
Chart 2 / Mean of Children's Schooling by Educational Levels of Parents: Sons
and Daughters

Mean of Children's Schooling
(Completed Years)

SONS   DAUGHTERS

10.9	13.3	13.4	14.9	11	13.3	13.7	14.5	10.8	13	13.5	14.6	10.7	13.1	13.8	14.2

Father's Educationl   Mother's Education   Fathers's Education   Mother's Education
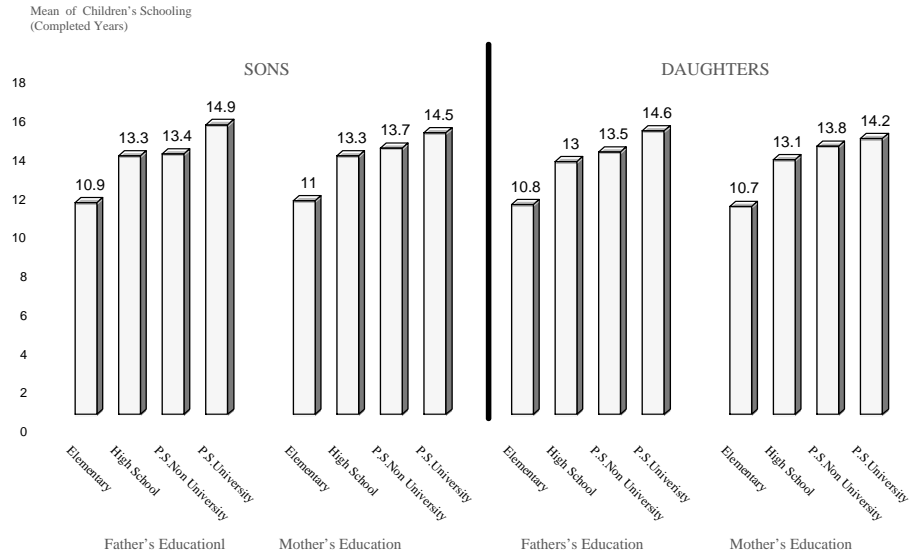
Chart 3 / Means of Occupational Status of Children by their Schooling and

Parents' Educational Levels

Mean of Pineo Porter Scale of
Occupational Status (0-100)

SONS   DAUGHTERS

Father's Education: Elementary 38.8, High School 46.9, P.S. Non University 47.4, P.S. University 55.4

Mother's Education: Elementary 39.7, High School 46.8, P.S. Non University 45.6, P.S. University 53.2

Own s Education: Elementary 24.2, High School 30.9, P.S. Non University 43.9, P.S. University 68.8

Father's Education (Daughters): Elementary 36.8, High School 44.4, P.S. Non University 44.7, P.S. University 53

Mother's Education (Daughters): Elementary 37, High School 44.3, P.S. Non University 45.1, P.S. University 52.9

Own's Education (Daughters): Elementary 15.8, High School 28.7, P.S. Non University 41.1, P.S. University 67.2

Chart 4: Means of Children's Earnings by their Schooling and their Parents'
Educational Levels

Mean Earnings 1993-94
(Wages&Salaries)

	SONS	DAUGHTERS

Thousands

Father's Education (Sons): Elementary 29.722, High School 30.651, P.S Non University 26.602, P.S University 29.398

Mother's Education (Sons): Elementary 29.705, High School 31.265, P.S. Non University 26.787, P.S University 25.017

Own's Education (Sons): Elementary 26.852, High School 23.987, P.S Non University 30.554, P.S. University 35.506

Father's Education (Daughters): Elementary 19.297, High School 19.672, P.S Non University 18.295, P.S University 19.389

Mother's Education (Daughters): Elementary 19.8, High School 19.811, P.S Non University 17.749, P.S University 16.607

Own's Education (Daughters): Elementary 12.602, High School 14.568, P.S Non University 19.242, P.S University 25.112

The means of parental educational scores, children's schooling and socio-economic
measures for each of the groups examined are presented in Table 2. There were
wide differences among the groups. U.S.-born sons and daughters, Asian-born
sons as well as Canadian-born visible minority sons came from the most educated
family backgrounds while those of Aboriginal ethnic backgrounds from the least.
The former groups displayed higher schooling levels than the rest of the groups.

Foreign-born daughters of European ancestry as well as Aboriginals had the lowest levels of schooling. The means of the occupational scores revealed also that the most typical "white collar" workers were the Canadian born-visible minority and foreign-born non visible minority sons. "Blue collar" types of occupations were predominant among foreign-born visible minority daughters including Asian born-daughters. The highest income earners were U.S.-born and European-born sons while those who ranked the lowest were Canadian-born visible minority daughters and individuals of Aboriginal ancestry.

Table 2: Post-secondary Education Gains (*) made by Ethnocultural Groups

Ethnocultural Groups	Post secondary education level (%)			% gain over father	% gain over mother
	Father	Mother	Children		
All Sample	14%	12%	49%	35%	38%
Sons	14%	11%	50%	36%	38%
Daughters	15%	12%	49%	34%	37%
Birthplace Groups					
Asian-born sons	23%	10%	57%	34%	47%
U.S.- born sons	39%	29%	73%	34%	44%
U.S-born daughters	30%	13%	56%	26%	43%
European-born sons	18%	10%	47%	29%	37%
Asian-born daughters	19%	15%	52%	33%	37%
Canadian-born daughters	17%	16%	50%	33%	34%
Other Countries-born sons	19%	16%	50%	31%	34%
Canadian –born sons	17%	16%	49%	32%	33%

Ethnocultural Groups	Post secondary education level (%)			% gain over father	% gain over mother
	Father	Mother	Children		
Other Countries-born daughters	18%	11%	43%	25%	32%
European-born daughters	18%	11%	41%	23%	30%
Visible Minority Status Groups					
FB vismin sons	18%	8%	54%	36%	46%
FB non vismin sons	21%	13%	49%	28%	36%
FB vismin daughters	16%	11%	46%	30%	35%
CB non vismin daughters	16%	15%	50%	34%	35%
CB non vismin sons	17%	15%	49%	32%	34%
FB non vismin daughters	20%	12%	43%	23%	31%
CB vismin daughters	40%	32%	60%	20%	28%
CB vismin sons	32%	37%	59%	27%	22%
Aboriginal Status Groups					
Non-Aboriginal sons	22%	17%	50%	28%	33%
Non-Aboriginal daughters	19%	13%	45%	26%	32%
Aboriginal status sons	8%	18%	48%	40%	30%
Aboriginal status daughters	9%	14%	37%	28%	23%

Symbols:CB=Canadian Born, FB=Foreign Born
*-Includes post secondary university and non-university education. Groups are ranked according to their post secondary gains in descending order.

Table 3:   Mean Parental Education Scores, Schooling and Socio-Economic

Status of Children

Ethnocultural Groups	Father's Education	Mother's Education	Child's Age	Child's Schooling	Child's Weeks Worked 1993-94	Child's Occup. Status Score	Child's Earnings
	Score 1-4	Score 1-4	Years	Completed Years	# of Weeks	PP Score 1-100	$
All Sample	1.65	1.59	43.9	12.1	35.1	43.2	24777
Sons	1.68	1.54	44.5	12.3	38.8	44.2	29666
Daughters	1.63	1.60	43.5	12.0	31.4	41.9	19353
Birthplaces							
CB Sons	1.64	1.61	45.2	12.2	38.9	43.9	29400
FB U.S.-born sons	2.41	2.09	44.2	13.9	43.2	58.2	33382
FB European-born sons	1.59	1.44	38.7	11.6	39.9	48.7	35539
FB Asian-born sons	1.86	1.39	48.2	13.4	35.7	39.8	25418
FB Other countries-born sons	1.52	1.47	45.7	12.4	36.3	41.3	27059
CB daughters	1.62	1.61	43.9	12.1	31.8	42.0	18839
FB U.S.-born daughters	1.96	1.64	41.2	13.5	37.3	49.1	19294
FB European-born daughters	1.65	1.48	38.0	11.3	28.9	46.1	23602
FB Asian-born daughters	1.74	1.56	47.2	12.3	30.6	33.0	18088
FB Other countries-born daughters	1.77	1.61	49.3	11.9	27.9	36.0	20689
Visible Minority Status							
CB vismins sons	1.76	2.09	48.4	13.7	37.4	57.5	29839
FB vismins sons	1.65	1.36	47.8	12.9	35.8	40.1	24971
CB non vismins sons	1.64	1.61	45.2	12.3	39.0	43.7	29388
FB non vismins sons	1.65	1.5	38.9	11.8	39.8	48.9	35612

Ethnocultural Groups	Father's Education	Mother's Education	Child's Age	Child's Schooling	Child's Weeks Worked 1993-94	Child's Occup. Status Score	Child's Earnings
	Score 1-4	Score 1-4	Years	Completed Years	# of Weeks	PP Score 1-100	$
CB vismins daughters	1.61	1.46	46.5	13.1	37.1	44.8	15346
FB vismins daughters	1.68	1.51	48.0	12.0	28.7	32.1	19131
CB non vismins daughters	1.62	1.61	43.9	12.1	31.7	42.0	19021
FB non vismins daughters	1.71	1.5	38.6	11.6	29.7	46.4	22913
Aboriginal Status							
Non –Aboriginal sons	1.80	1.69	48.4	12.6	42.6	46.8	31696
Non –Aboriginal daughters	1.64	1.60	45.9	11.7	32.1	40.2	18908
Aboriginal status sons	1.30	1.29	51.6	10.9	34.0	34.9	19581
Aboriginal status daughters	1.31	1.32	49.3	10.7	38.9	46.2	14749

Symbols:
CB=Canadian Born, FB=Foreign Born
vismin=visible minorities, non vismin-non visible minorities

The zero order correlations between the seven variables in the parental educational model are presented in table T-2 of the Appendix. The variables showed the associations anticipated by the theoretical expectations of the model. The strong association found between the father's and mother's educational level scores (.63) suggests the presence of selective educational mating among the parents of children: highly educated fathers tend to marry highly educated mothers. As predicted by the model, the parents' educational level was moderately associated with schooling and had negligible or low associations with the number of weeks worked, occupational status scores and annual wages. Children's schooling, the

major intervening variable of the model, had moderate or high positive correlations with all the rest. More educated children who had been raised by more educated parents, had worked more during the year and had worked in well paid high status jobs. The correlation matrices for sons and daughters were similar in their basic structures with the only exception, perhaps, that those who worked more weeks among daughters were older individuals while among sons age did not seem to be correlated with more working weeks during the year.

Path analysis findings are presented in diagram form throughout the document (diagrams 3 to 19). **Readers not familiar with path analysis diagrams are suggested to refer to section A1 of the Appendix.** Path coefficients measure the percentage changes in the standard deviations of the variables allowing to compare effects simultaneously for all variables across different groups. To simplify the presentation of results non significant paths, which are assumed to be equal to 0 (p>.05), have been omitted from all diagrams. Results are presented in a comparative fashion , that is, groups are contrasted by a significant trait of interest in the analysis (i.e. gender, birthplace and visible minority status).

Diagram 3 presents results for the overall sample. These confirmed the theoretical expectations of the transmission model. The educational level of the parents, via the children's schooling, had indirect impacts on the labour force outcomes participation of children, their occupational status of their earning levels of the children. Every 100% raise in the level of the fathers' education raised the children's schooling by 24% while that of the mother did so by 16%. The father's education was more strongly transmitted than that of the mother. The children's schooling, itself, increased the number of weeks worked during the year by 34%, occupational scores by 58% and earnings by 19%. The path coefficients revealed also that the number of weeks worked was the most important predictor of

earnings compared to occupational status or schooling. The indirect effect [2] of the father's educational level on the children's earnings was the following: 4% via schooling, 6% via weeks worked and 4% via occupational status. The indirect effect of the mother's education on earnings was: 3% via schooling, 4% via weeks worked and 2% via occupational status.

Separate path model results for sons and daughters are presented in diagrams 4 and 5. The structure of causal impacts between variables appeared fairly similar for both groups. Fathers, again, were the dominant transmitters of schooling to their children. Older daughters were more likely to have higher schooling than younger ones while this was barely the case for sons. However, the rates at which daughters converted their schooling and occupational status into earnings (holding constant other variables) were slightly larger than that of sons (27% to 18% and 30% to 25%). The latter suggests that schooling and occupational status are for women more critical income generating variables and that any decline in the amount of these have more negative effects for women than for men. Women, thus, were not only affected adversely by their relative lower levels of mean earnings compared to men ($29,666 to $19,553) but also in terms of their sensitivity to possible drastic changes in parental educational backgrounds, schooling levels and occupational status.

---

[2] Indirect effects are calculated by the product of the paths along a line of causation according to the Simon-Blalock rule (see Appendix)

Diagram 3: Model Results for the Overall Sample (Average Earnings=$24,777)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F:Father's
Educational Level

RPs

+.90

+.81

+.24

+.84

+.19

+.63

S:Children's
Schooling

+.58   O: Children's
Occupational
Status

+.27   W: Children's
Earnings

+.16   +.15

-.36

-.27

+.72

M: Mother's
Educational Level

A: Children's
Age

+.34

+.14   L: Children's
Working Weeks

+.93

RPl
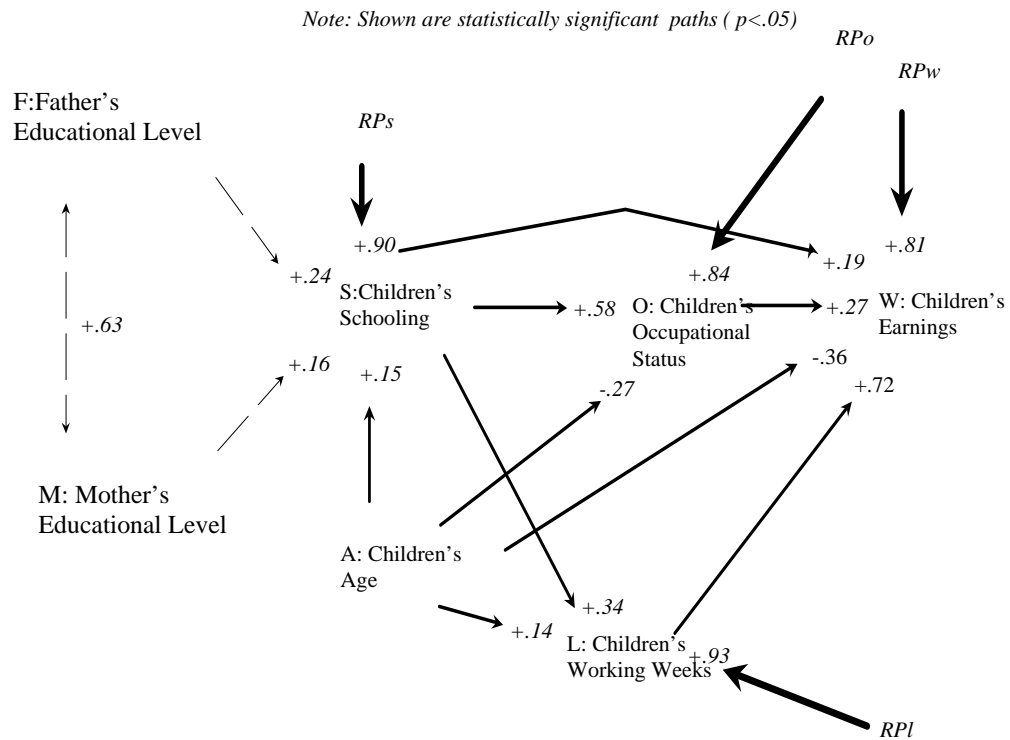
Diagram 4: Model Results for Sons (Average Earnings=$29,666)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.94

+.26

+.81

+.18

+.79

S: Children's
Schooling

+.57

+.25

W: Children's
Earnings

O: Children's
Occupational
Status

+.64

+.15

-.41

-.33

+.73

M: Mother's
Educational Level

+.09

A: Children's
Age

+.34

+.07

L: Children's
Working Weeks

+.94

RPl
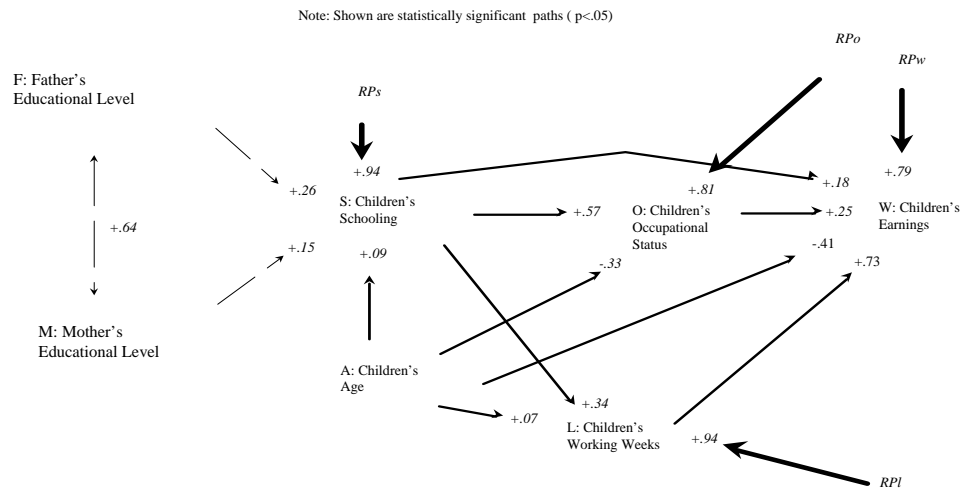
Diagram 5: Model Results for Daughters (Average Earnings=$ 19,553)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.23

+.79

+.89

+.86   +.27

+.62

S: Children's
Schooling   +.60   O: Children's
Occupational
Status   +.30   W: Children's
Earnings

+.17

+.18   -.30

+.18   -.18   +.74

M: Mother's
Educational Level

A: Children's
Age

+.35

+.18   L: Children's
Working Weeks   +.92

RPl
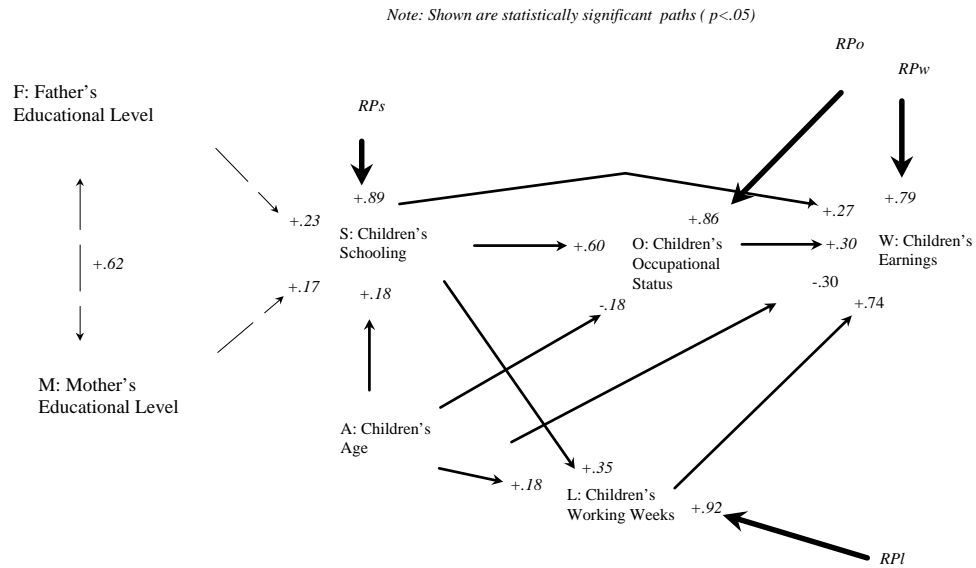
Birthplace Groups

Table T-2 in the Appendix shows results for all birthplace groups examined.
Selected results are presented in diagrams 6 to 9. At the birthplace level, parents of
Asian-born sons were found to be the most educationally similar ($r_{f,m}$=.83) among
all the birthplace groups examined. The father's education was strongly transmitted

across most immigrant groups with the exceptions of U.S.-born sons and European-born daughters. In the former group, the mother's education was the main parental educational influence while in the latter one both parents had transmitted their educational levels to their children. Of the birthplace groups examined, Asian-born women experienced the most serious blockages in the transmission process. In addition to the lower average earnings predominant among members of this group ($18,088) occupational status was found uncorrelated with earnings (P_{wo}=0). Additional schooling did not produce additional earnings either (P_{ws}=0).

Canadian-born Sons and Foreign-born Sons (Diagrams 6 and 7)

Foreign-born sons had higher average earnings compared to the Canadian-born ($31,247 to $29,400). There were more parental educational similarities present among the foreign born than among the Canadian born ($r_{f,m}$ =.72 and .63 respectively). The father's education had a larger impact on the children's schooling than that of the mother. The rates of conversion of schooling into higher productivity and occupational status were also similar for both groups. However, although foreign born sons, on average, earned more than Canadian born sons ($31,247 to $ 29,400), most of their earnings could be attributed to their higher occupational status rather than by their schooling levels or the number of weeks they worked during the year. In other words, the foreign-born could not convert any additional higher schooling into additional earnings (P_{ws} =0). Also, working more weeks during the year did not bring similar earning returns to those of Canadian-born sons (68% to 74%).

Canadian-born Daughters and Foreign-born Daughters (Diagrams 8 and 9)

Foreign-born daughters had also higher average earnings than their Canadian-born counterparts ($21,248 to $18,839). Fundamental differences in the parental transmission process, however, were evident between these groups. Among immigrant daughters, the father's education had a direct impact on the daughter's earnings controlling for schooling, the number of weeks worked during the year, occupational status and age. In other words, they received earning "bonuses" just because they were raised by a highly educated father. Foreign born daughters also had higher rates of conversion of schooling into earnings (41% to 24%) than the Canadian-born. A higher occupational status brought a slightly higher rate in earning returns compared to that of the Canadian- born (28% to 22%).

Visible Minority Status Groups

Canadian-born Non-Visible Minority Sons and Canadian-born Visible Minority Sons (Diagrams 10 and 11)

Both groups had comparable earning levels. However, among visible minority sons, the mother was the main transmitter of schooling (each change in the level of education brought about a 43% change in the schooling of the children) compared to non-visible minority sons where both parents transmitted their educational levels to their children. The mother's education, however, had a direct impact on the children's earnings. They received an earnings "bonus" just because they were raised by a post-secondary educated mother. Although visible minority sons converted schooling into occupational status at a higher rate than non-visible minority sons, they couldn't capitalize any additional schooling into higher earnings ($P_{ws}=0$) and their rates of conversion of occupational status into earnings were lower when compared to non-visible minority sons (13% to 22%) .

Foreign-born Non Visible Minority Sons and Foreign-born Visible Minority Sons (Diagrams 12 and 13)

Foreign-born visible minority sons had lower average earnings compared to foreign-born non-visible minority sons ($24,971 to $ 35,612). For both groups, parental education had not only direct impacts on their schooling but also on their labour force participation and earning levels. Individuals of both groups received "bonuses" for being raised by highly educated parents. Visible minority sons, however, had lower occupational status returns for their higher schooling compared to non-visible minority sons (49% to 63%). They also couldn't get the same earning returns by working more weeks during the year as non-visible minorities (61% to 72%).

Canadian-born Non-Visible Minority Daughters and Canadian-born Visible Minority Daughters (Diagrams 14 and 15)

Canadian-born visible minority daughters had lower average earnings that their non-visible minority counterparts ($15,346 to $19,021). Parents of Canadian born visible minority daughters were fairly similar in their educational attainments (r $_{f,m}$=.80). Non visible minorities followed the bimodal transmission process while for visible minorities only the transmission of the father's educational level was observed. Canadian born visible minority daughters experienced a fundamental "blockage" in the transmission process: high status jobs did not bring any monetary rewards (P_{wo}=0). Additional schooling produced some monetary returns, but these were only at a slightly higher rate than non visible minority daughters (31% to 24%). The path model for Canadian Born visible minority daughters also showed that younger visible minority daughters were as well schooled as older ones (P_{sa}=0)

Foreign-born Non-Visible Minority Daughters and Foreign-born Visible

Minority Daughters (Diagrams 16 and 17)

Foreign-born visible minority daughters, again, had lower average earnings than non-visible minority daughters ($19,131 to $22,913). Among non-visible minorities both parents transmitted their education while among visible minorities only the father's education was transmitted. Both groups, however, received earnings "bonuses" for being raised by a highly educated father (higher for non visible minorities than for visible minorities: 29% to 19%). Visible minority daughters converted their education into occupational status at a higher rate than non-visible minorities (70% to 64%), but because occupational status was found unrelated to earnings ($P_{wo}=0$), no monetary gains were made. Visible minorities couldn't compensate this latter disadvantage by higher earning returns due to additional schooling either. Their rate of 16 % was "dwarfed" by a substantive one of 50% made by non-visible minority daughters.

Aboriginal Status Groups

Table T-3 of the Appendix shows path model results for aboriginal status groups. Results for non-aboriginal status sons and daughters resembled very closely patterns for the overall sample. In contrast, the transmission patterns found across Aboriginal sons and daughters, all Canadian-born, were clearly different with respect to all other groups in the SLID 1993 sample. Diagrams 18 and 19 presents the results for the transmission patterns within these groups.

Aboriginal sons was the group most afflicted by different types of transmission blockages. Their annual earnings averaged only $19,581 and it was the lowest of the male groups examined. The few highly educated parents of this group could

not pass this education to their offspring at all (P_{sf} and P_{sm} =0). For those who achieved higher schooling, although this was transformed at a 88% rate into occupational status, the latter did not bring any monetary returns (P_{wo}=0). Additional schooling did not bring any additional earnings either (P_{ws}=0). Working more weeks during the year was the only way that Aboriginal sons could make more money.

Aboriginal daughters had the lowest average earnings of all the ethnocultural groups examined ($14,749). Their parents were the most educationally dissimilar ($r_{f,m}$=.44). Like the males, no intergenerational transfer of education was observed. Their rate of conversion of schooling into occupational status was somewhat lower than that of males but this status could be converted into earnings at a 49% rate. Aboriginal daughters did not receive any earnings "bonuses" for additional schooling (P_{ws}=0) and could make more money only if they worked more weeks during the year.

Diagram 6: Model Results for Canadian-born Sons (Average Earnings = $29,400)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.25

+.63

+.16

+.94

+.82

+.20

+.80

S: Children's
Schooling

+.58

O: Children's
Occupational
Status

+.22

W: Children's
Earnings

M: Mother's
Educational Level

-.32

-.43

+.74

A: Children's
Age

+.34

+.06

L: Children's
Working Weeks

+.94

RPl
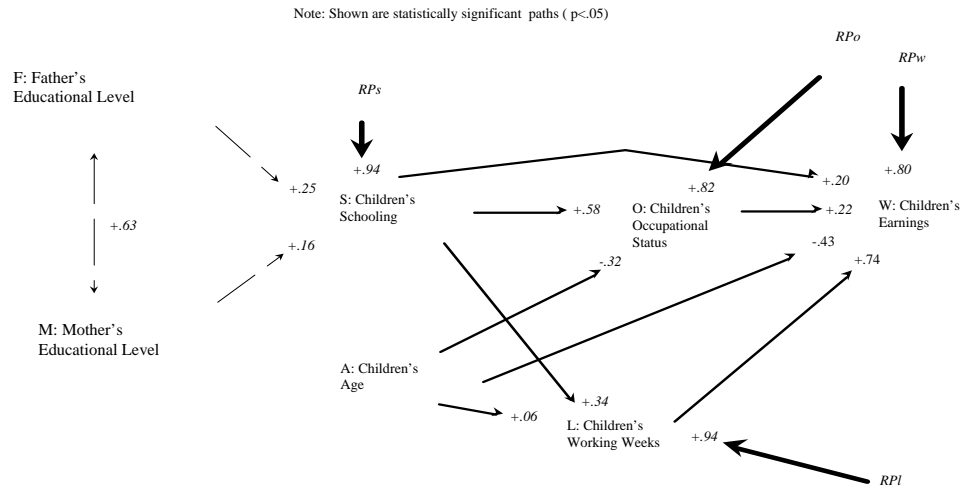
Diagram 7 : Model Results for Foreign-born Sons (Average Earnings = $31,247)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.83

+.75

+.2 8

+.89

+.56   O: Children's
Occupational
Status

+.37   W: Children's
Earnings

S: Children's
Schooling

+.72

+.12

-.29

-.31

+.68

+.19

M: Mother's
Educational Level

A: Children's
Age

+.33

+.09   L: Children's
Working Weeks

+.94

RPl
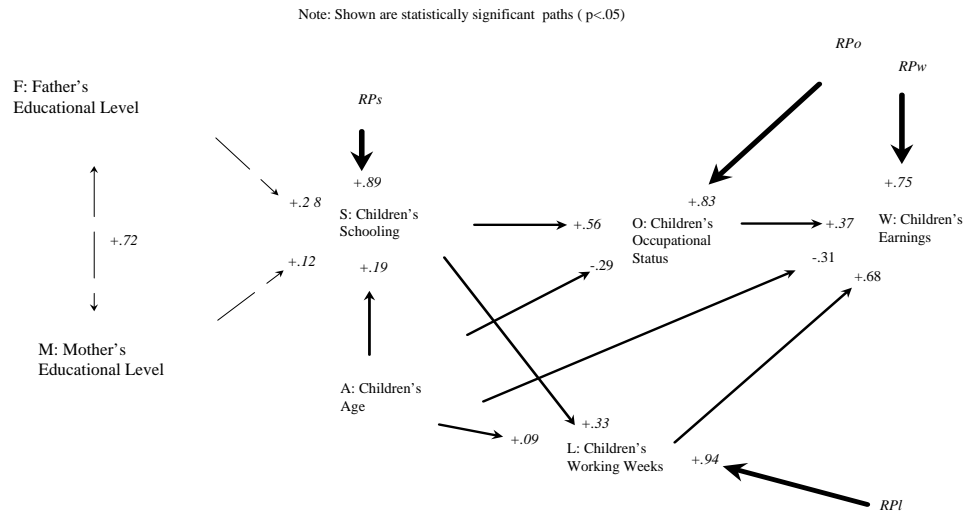
Diagram 8: Model Results for Canadian-born Daughters (Average Earnings =$18,839)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.90

+.21

S: Children's
Schooling

+.86

+.24

+.80

W: Children's
Earnings

+.61

+.19

+.59

O: Children's
Occupational
Status

+.22

-.19

-.29

+.76

M: Mother's
Educational Level

A: Children's
Age

+.19

+.36

L: Children's
Working Weeks

+.92

RPl
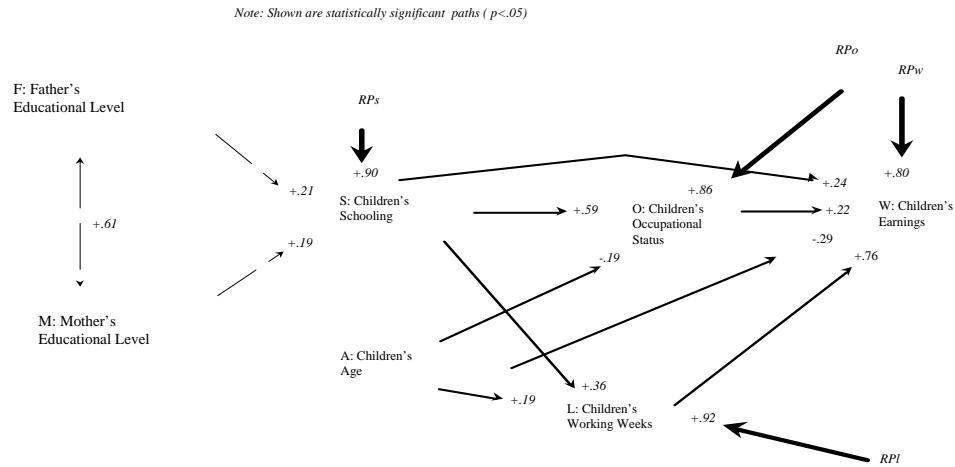
Diagram 9: Model Results for Foreign-born Daughters (Average
Earnings=$21,248)

Note: Shown are statistically significant paths (p<.05)

F: Father's
Educational Level

RPs

RPo

RPw

+.18

+.85

+.29

+.41

+.75

+.81

+.66

S: Children's
Schooling

+.62

O: Children's
Occupational
Status

+.28

W: Children's
Earnings

+.12

+.27

-.38

+.74

M: Mother's
Educational Level

A: Children's
Age

+.32

+.12

L: Childrens'
Working Weeks

+.93

RPl
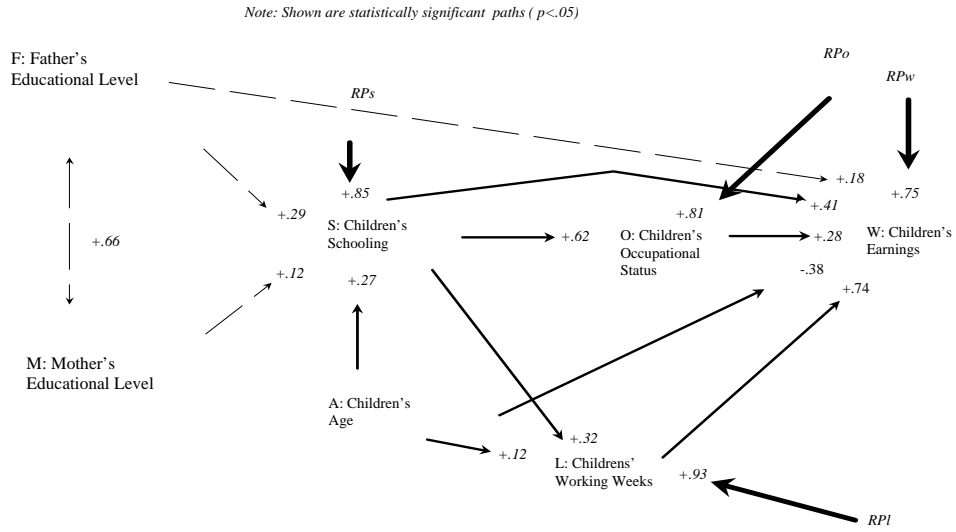
Diagram 10: Model Results for Canadian-born Non-Visible Minority Sons

(Average Earnings=$29,388)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.91

+.80

+.25

+.81

+.19

S: Children's
Schooling

+.57

+.22

O: Children's
Occupational
Status

W: Children's
Earnings

+.62

+.16

+.08

-.34

-.43

+.74

M: Mother's
Educational Level

A: Children's
Age

+.34

L: Children's
Working Weeks

+.94

RPl
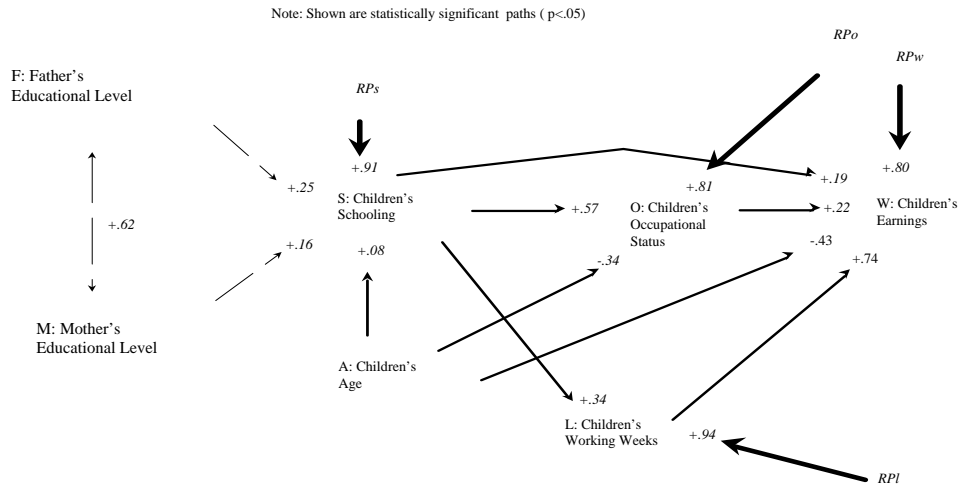
Diagram 11: Model Results for Canadian-born Visible Minority Sons (Average Earnings =$29,839)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's Educational Level

RPs

+.78

+.52

+.43

S: Children's Schooling

+.69

+.62

+.81

O: Children's Occupational Status

+.13

W: Children's Earnings

-.31

+.24

+.76

M: Mother's Educational Level

A: Children's Age

+.38

L: Children's Working Weeks

+.84

RPl
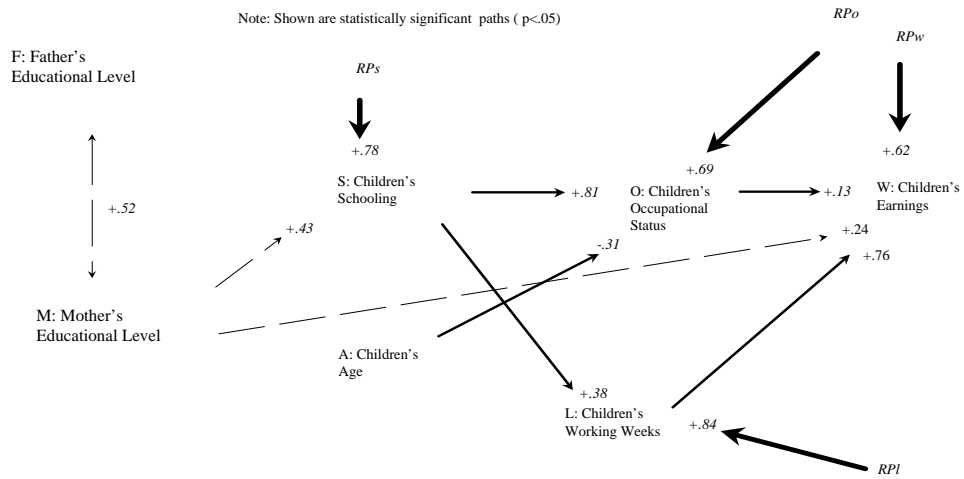
Diagram 12: Model Results for Foreign-born Non-Visible Minority Sons (Average Earnings=$35,612)

Note: Shown are statistically significant paths (p<.05)

F: Father's
Educational Level

RPs

RPo

RPw

+.28

+.88

+.80

+.11   +.76

+.77

S: Children's
Schooling

+.63

O: Children's
Occupational
Status

+.33   W: Children's
Earnings

+.13

+.19

-.22

-.23

+.72

M: Mother's
Educational Level

A: Children's
Age

+.32

+.32

L: Children's
Working Weeks

+.91

+.10

RPl
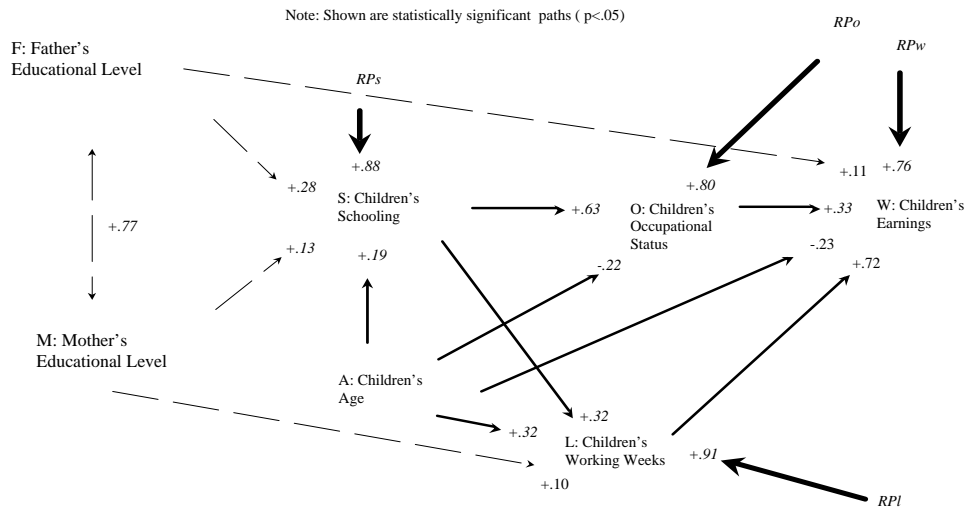
Diagram 13: Model Results for Foreign-born Visible Minority Sons (Average Earnings=$24,971)

Note: Shown are statistically significant paths (p<.05)

F: Father's
Educational Level

RPo

RPw

RPs

+.92

+.30

+.20

+.76

+.62

S: Children's
Schooling

+.49

O: Children's
Occupational
Status

+.86

+.37

W: Children's
Earnings

-.15

-34

+.61

M: Mother's
Educational Level

A: Children's
Age

+.34

L: Children's
Working Weeks

+.94

RPl

Diagram 14: Model Results for Canadian-born Non Visible Minority Daughters
(Average Earnings=$19,021)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.89

+.20

+.61

+.20

+.15

+.86

+.24

+.80

S: Children's
Schooling

+.59

O: Children's
Occupational
Status

+.32

W: Children's
Earnings

M: Mother's
Educational Level

-.19

-.29

+.77

A: Children's
Age

+.35

+.20

L: Children's'
Working Weeks

+.91

RPl
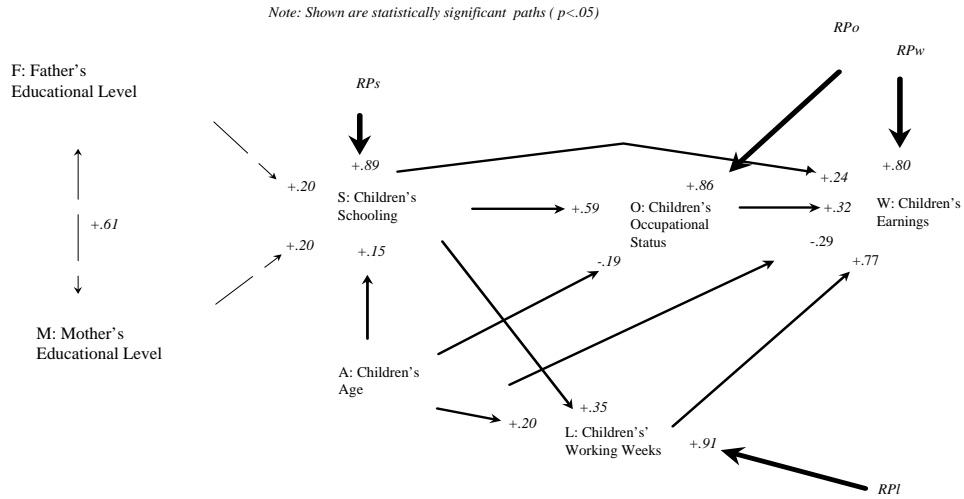
Diagram 15: Model Results for Canadian-Born Visible Minority Daughters
(Average Earnings=$15,346)

Note: Shown are statistically significant paths (p<.05)

RPo

RPw

F: Father's
Educational Level

RPs

+.95

+.67

+.31

+.67

+.24

+.80

S: Children's
Schooling

+.50

O: Children's
Occupational
Status

W: Children's
Earnings

-53

-.18

+.75

M: Mother's
Educational Level

A: Children's
Age

+.47

+.29

L: Children's'
Working Weeks

+.75

RPl

Diagram 16: Model Results for Foreign-born Non-Visible Minority Daughters
(Average Earnings=$22,913)

Note: Shown are statistically significant paths (p<.05)

F: Father's
Educational Level

RPo

RPw

RPs

+.29

+.28

+.93

+.81

+.50

+.76

+.66

S: Children's
Schooling

+.64

O: Children's
Occupational
Status

+.23

W: Children's
Earnings

+.15

+.27

-.33

+.81

M: Mother's
Educational Level

A: Children's
Age

+.22

L: Children's
Working Weeks

+.91

RPl
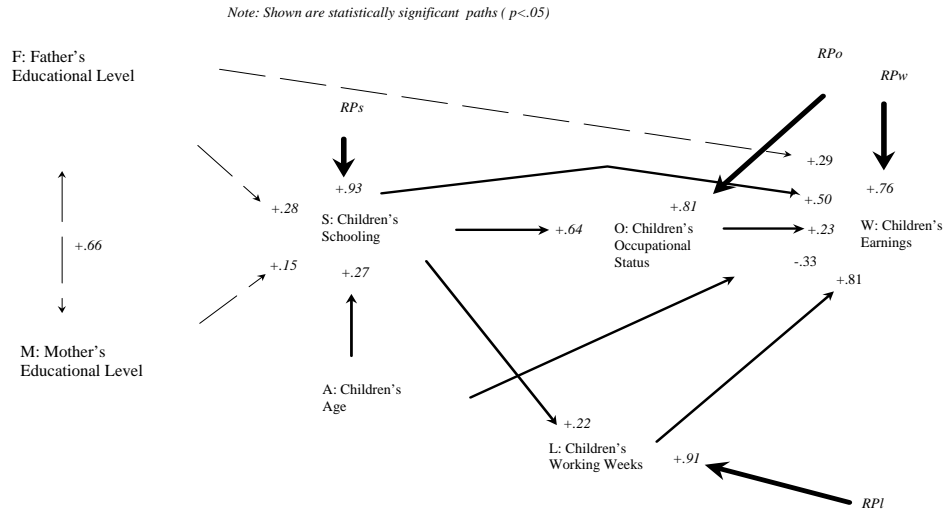
Diagram 17: Model Results for Foreign-Born Visible Minority Daughters
(Average Earnings=$19,131)

Note: Shown are statistically significant paths (p<.05)

F: Father's
Educational Level

RPo

RPw

RPs

+.19

+.90

+.31

+.79   +.16

+.66

+.67

S: Children's
Schooling

+.70   O: Children's
Occupational
Status

W: Children's
Earnings

-.49

+.73

+.20

M: Mother's
Educational Level

A: Children's
Age

+.42

L: Children's'
Working Weeks   +.91

RPl
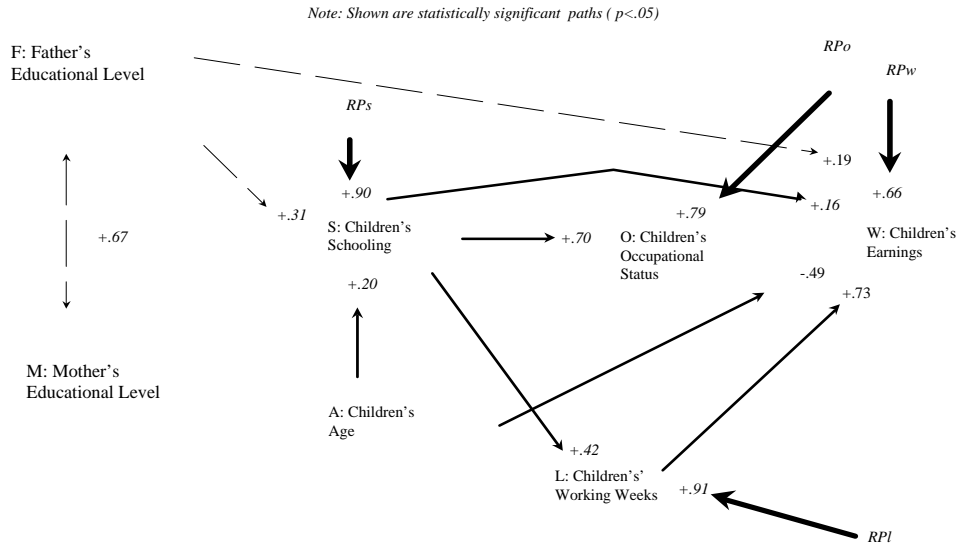
Diagram 18: Model Results for Aboriginal Sons (Average Earnings=$19,581)

Note: Shown are statistically significant paths (p<.05)

F: Father's
Educational Level

RPo

RPw

RPS

+.84

+.74

S: Children's
Schooling

+.88

O: Children's
Occupational
Status

+.59

+.63

W: Children's
Earnings

+.29

-.53

+.86

M: Mother's
Educational Level

A: Children's
Age

+.38

L: Children's
Working Weeks

+.88

RPl
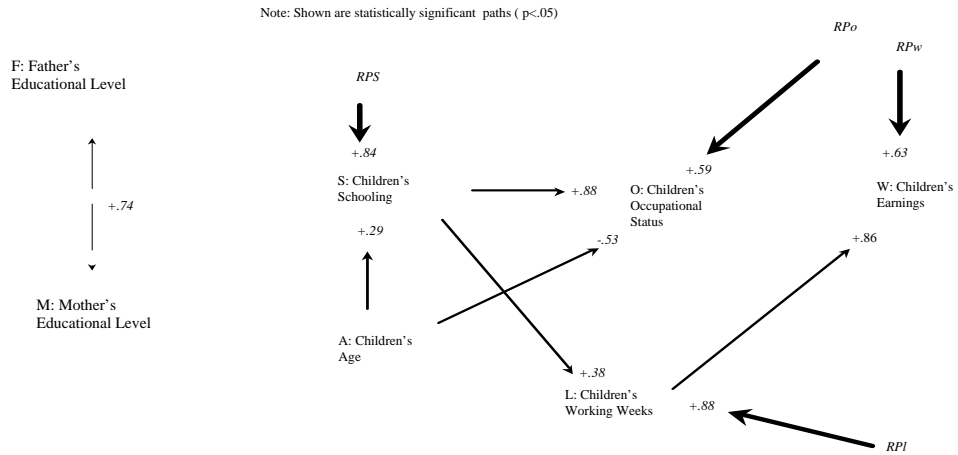
Diagram 19: Path Model Results for Aboriginal Daughters (Average
Earnings=$14,749)

Note: Shown are statistically significant paths (p<.05)
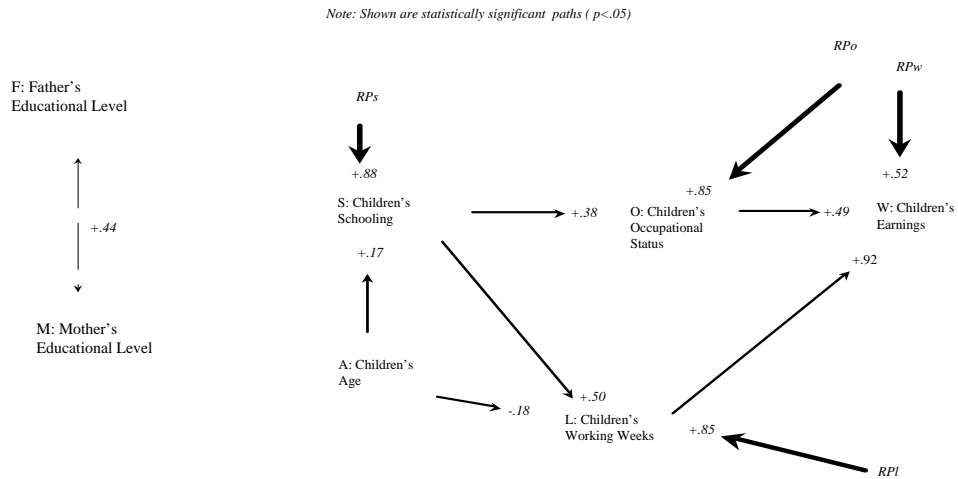
Blockages in the Transmission Process

Table 6 presents a summary of major blockages in the transmission process which
were found among the ethnocultural groups in the SLID 1993 data. These
blockages reflect a situation of generalized lower earnings in the group coupled
with an absence of parental educational transmission and/or "weak or "null"
occupational or economic returns. According to their degree of severity the
transmission blockages were identified as Type 1,2 and 3. Each blockage was

identified by the presence or absence of important causal linkage in the path
analytic model tested.

Table 6 /   Blockages in the Transmission Process*

Ethnocultural Groups	Average Earnings ($) 1993-94	Transmission Blockage Type:
Foreign –born Sons		
Non -visible minorities	35612	3
European- born	35539	3
U.S.- born	33382	-
Other countries-born	27059	3
Asian-born	25418	3
Visible minorities	24971	3
Canadian-born Sons		
Visible minorities	29839	3
Canadian-born	29400	-
Non -visible minorities	29388	-
Aboriginal s	19581	1, 2, 3
Foreign- born Daughters		
European-born	23602	-
Non –visible minorities	22913	-
Other countries born	20689	-
U.S.-born	19294	3
Visible minorities	19131	2
Asian-born	18088	2,3
Canadian Born Daughters		
Non -visible minorities	19021	-
Canadian -born	18839	-
Visible minorities	15346	2
Aboriginals	14749	1,3

1.   - Groups are ranked by their average earnings in descending order
Transmission Blockages Types:
1. No Parental Educational Transmission ($P_{sf}=0$, $P_{sm}=0$)
2. No additional earnings product of additional schooling ($P_{ws}= 0$).
3. No higher earnings product of higher occupational status ($P_{wo} = 0$)

Table 6 shows that, the lower the earnings of the groups, the higher the likelihoods of finding transmission blockages. Type 1 blockages, the most serious ones, suggest the absence of any form of intergenerational transmission of education from parents to offsprings. This problem fundamentally affected Aboriginal sons and daughters: their parents were unable to transmit to them a schooling level commensurate with their educational levels. These groups, thus, were severely handicapped in terms of their educational and socio-economic attainments. Type 2 blockages refer to the inability that children had in converting a higher occupational status (e.g. professional&managerial jobs) into higher earnings. In cases such as Canadian born visible minority daughters and some foreign visible minority daughters (i.e Asian born daughters), higher schooling lead to work in "white" collar occupations, but the latter outcome did not bring any significant monetary rewards. Type 3 blockages refer to the fact that additional schooling (transmitted by their parents or not) did not bring earnings "bonuses" for the children of some groups. This meant that, among individuals occupying similar occupational niches, those with higher schooling did not receive earning bonuses for their "extra" schooling. Type 3 blockages were more noticeable among immigrants than the Canadian born groups examined. No noticeable transmission blockages were found among U.S. born sons, Canadian born sons, European born daughters and other non visible minority daughters.

5.   CONCLUSIONS

In reading the findings of the study, the reader should be reminded that the nature of the SLID 1993 data has imposed several definitional and sample size constraints to the analysis. Variable breakdowns were not fine enough to pinpoint transmission patterns in specific groups (e.g. nationality groups). Also, findings apply to Canada as a whole and could not be generalized to particular geographical coordinates of

the country. Individuals residing in specific provinces and cities may be subject to different patterns of intergenerational transmission and opportunities to pursue post-secondary education and training. The small counts available for visible minority Canadian born and Aboriginals groups pose the risk of larger sampling error for the estimates of the transmission model parameters obtained for ethnocultural groups.

Notwithstanding definitional and data related constraints, the multivariate analysis of the transmission model has produced the following central findings:

▸ the children born to highly educated parents in each group were the most likely to achieve higher schooling and socio-economic attainments;

▸ the intergenerational transmission of education and socio-economic status process tends to be ethno-specific;

▸ parents of similar education tended to marry one another, that is, an educationally selective mating process took place within the groups;

▸ although both parents transmitted education to their offsprings, the father's education was the most frequent in being transmitted;

▸ by transmitting their education and increasing the child's schooling, parents increased their chances of favourable socio-economic attainments;

▸ not all groups were able to convert their higher schooling attainments into occupational achievements and monetary rewards,

▸ there were significant blockages present in the transmission process for Canadian and foreign born visible minority daughters as well as Aboriginal sons and daughters.

The father's education was the main source of educational transmission within the groups examined. Paternal educational "inheritance" was more pronounced among

immigrant than Canadian born groups. Many members of these groups received earnings "bonuses" due solely to the fact that they were raised by a highly educated father. Although paternal educational "inheritance" was dominant, among Canadian born visible minority and U.S. born sons the mother's transmission was found to be the dominant one. Many of these children were raised by mothers with university and/or college education.

Who were the "winners" and "losers" in the transmission process? Although the answer to this question cannot be fathomed in the simple analysis undertaken here, it is possible to say that the transmission process was less "smoother" for some groups than for others. Women, some immigrant groups (Asian born), visible minorities (both Canadian and foreign born) as well as Aboriginals did not obtained fair economic and occupational returns from their educational attainments. Serious transmission blockages afflicted these workers. Either parents could not pass human capital to their offspring or this human capital was not adequately transformed into occupational achievements or monetary rewards.

The imbalances in the social status attainment process for Aboriginal groups and foreign born visible minority women in the Canadian labour markets is already well documented in different studies. However, the transmission blockages observed for Canadian born visible minority women is of some concern. The limited number of observations available for this group could not be used as an statistical excuse to dismiss the extent of the difficulties in the transmission process experienced by them. Canadian born visible minority daughters earned substantially less than other Canadian and immigrant born groups and were unable to convert occupational status into commensurate earnings levels. Lower education in the parental family or limited schooling do not adequately explain the meagre earnings returns

observed for this group. Further research has to be undertaken on the type of factors which may produce these adverse outcomes.

The way in which parents transmit their education and socio-economic status to their children and produce favourable or unfavourable outcomes in the attainment process is a complex and multifaceted phenomenon. Sociological frames of analysis cannot capture the multidimensionality of the socialization process in diverse family and ethnic settings. However, the fact that the transmission process appears to be less beneficial for some groups than for others , suggests that there are different types of societal barriers affecting the groups' chances in terms of upward social mobility. It is not coincidence that the groups found to be more disadvantaged in the transmission process were also those who have reported more frequently being subject to unfair practices in the school system, discrimination in labour markets and racial prejudice&discrimination.

Despite the impressive rates of educational mobility and new opportunities opened in the educational system for all groups in Canada, there are still structural imbalances which are producing unfavourable schooling and labour force outcomes for members of immigrant, visible minority and aboriginal groups. Accessibility to higher education, recognition of educational credentials and adequate access to labour markets become relevant social policy issues. A favourable family environment or being socialized by highly educated parents creates good school habits in the children but these may be inconsequential for them if educational and occupational opportunities are scarce and unreachable. Higher schooling has to be adequately transformed into positive socio-economic attainments if current efforts to reach educational equality in Canada are to be successful.

6.   REFERENCES

Boyd, M.

*"*Immigration and Occupational Attainment in Canada", in *Ascription and Achievement* (Boyd, M., Goyder, J., Jones, F., McRoberts, H. , Pineo.P and Porter,J. Editors) , Ottawa: Carleton: University Press, 1985

Coleman,R.P and Rainwater,L.

Social Standing in America: New Dimensions of Class, New York: Basic Books Inc., 1978

Conklin, M.E. and Dailey, A.R.

"Does Consistency of Parental Educational Encouragment Matter for Secondary Students?" in *Sociology of Education* (54):254-262, 1981

Duncan,O.D., Featherman,D.L. and Duncan,B.

Socio-Economic Background and Achievement, New York:Academic Press, 1972

Dwyer,J.H.

Statistical Models for the Social and Behavioural Sciences, New York: Oxford University Press, 1983

Fournier,E., Butlin.G and Giles,P.

"Intergenerational Change in the Education of Canadians" in *Dynamics of Labour and Income:1994 Report*, Statistics Canada: Catalogue 75-201, 1994, pp.24-30

Hunter, A.

Class Tells: On Social Inequality in Canada, Toronto: Butterworths, 1981

Kalbach,W.E., Lanphier,C.M., Richmond A.H. and Rhyne,D.

Ethnogenerational Factors in Socio-Economic Achievement in Toronto, Toronto:
Institute for Behavioural Research Monograph, York University, 1984

Pendakur,K. and Pendakur,R.

Earnings Differentials Among Ethnic Groups in Canada, Department of Canadian
Heritage: Strategic Research and Analysis Monograph, SRA -34b, 1996

Porter,J.P.

"The Societal Context of Occupational Allocation" in *Ascription and*
Achievement (Boyd et. al. Editors), 1985, pp.29-65.

Richmond, A.H.

"Ethnogenerational Variation in Educational Achievement" in *Canadian Ethnic*
Studies, Vol III (3):74-89, 1986

APPENDIX: READING PATH ANALYSIS DIAGRAMS

1. When reading path analysis diagrams of the document, attention should be paid
to the following data features:

a) the level of earnings of the group;

b) the transmission of education from parents to children;

c) the rate of conversion of children's higher schooling into higher participation in
the labour force, occupational status and higher earnings;

d) "blockages" present in the transmission process (i.e. "weak" or missing paths).

2. In the path diagrams, lines with double arrowheads represent correlations
between pre-determined (exogenous) variables. Path analysis is a multivariate
technique which partitions the correlations between variables into direct and
indirect effects [3]. The correlation coefficient is a standardized measure of the
association present between two variables and ranges between -1 and +1. The
square of the correlation coefficient reveals the % of common variance shared by
the variables. Example: if a correlation between father's education and mother's
education is .65, this means that the variables are positively related and have a 42%
or $(.65)^2$ of common variance.

---

[3] This partition is done according to the formula:

$$r_{(x,y)} = \sum_{i=1}^{z} p_{xz}\, r_{yz}$$

where **z** is an index referencing those variables that have a direct impact on **y** and the subscript **x** references the independent variable
of the pair. This formula is also called the Simon-Blalock rule in path analysis.

3. Lines with an arrowhead at one end suggest that the variable at the head of the arrow depends directly on the variable at the tail of the arrow. Their degree of dependence is measured by the path coefficients.

4. Dashed arrows represent direct influences of parental education on schooling, number of weeks worked, occupational status scores and earning levels.

5. Thicker arrows are residual paths representing all possible variables outside the system which influence the outcomes but are not included in the model.

6. Numbers at the head of the arrows are path coefficients which in standard regression analysis are called beta coefficients. They represent the observed change in the standard deviation of the dependent variable for a unit change in the independent variable net from other influences. For instance, a +.25 coefficient impact of father's education on children's schooling indicates that a 100% move in the standard deviation of the father's educational is accompanied by a corresponding 25% move in the same direction by the standard deviation of children's schooling.

7. Pre-determined variables and prior outcomes may have direct or indirect impacts on later outcomes. If one is to assess, for instance, the impact on mother's education (M) on the children's earnings (W), one should read the paths backwards from W to M; then forward to W, forming the paths along the traverse including correlation coefficients. The direct effect of M on W is simply the path coefficient leading from M to W. Indirect effects of M on W are the product of the paths along different "routes" of impact (e.g. via schooling, via weeks worked or occupational status).

Table T-1/ Correlation Coefficients between Variables of   the Transmission Model

Sons & Daughters (N=25528)	F	M	A	S	L	O	W
F	1.00	0.63	0.33	0.37	0.08	0.15	-0.02
M		1.00	0.39	0.34	0.11	0.11	-0.05
A			1.00	0.28	0.16	-0.13	-0.33
S				1.00	0.34	0.50	0.31
L					1.00	0.12	0.48
O						1.00	0.42
W							1.00
Mean	1.7	1.8	43.9	12.1	35.1	43.2	24777
s.d.	.82	.93	14.1	3.5	23.0	33.5	18545

Sons (N=12302)	F	M	A	S	L	O	W
F	1.00	0.64	0.35	0.36	0.05	0.15	-0.02
M		1.00	0.40	0.32	0.07	0.10	-0.05
A			1.00	0.24	0.08	-0.18	-0.39
S				1.00	0.32	0.52	0.32
L					1.00	0.12	0.52
O						1.00	0.43
W							1.00
Mean	1.7	1.8	44.5	12.2	38.8	44.2	29666
s.d.	.82	.93	13.7	3.7	21.1	33.3	20057

Daughters (N=13226)	F	M	A	S	L	O	W
F	1.00	0.62	0.31	0.37	0.11	0.14	-0.01
M		1.00	0.38	0.36	0.14	0.12	-0.05
A			1.00	0.32	0.23	-0.07	-0.28
S				1.00	0.36	0.49	0.36
L					1.00	0.11	0.48
O						1.00	0.46
W							1.00
Mean	1.7	1.8	43.5	12.0	31.4	42.0	19353
s.d.	.81	.93	14.4	3.4	24.3	33.7	14942

Symbols:

F= Father's Educational level score (1=Elementary, 2=High School,3=post-secondary non university and 4=post-secondary university).

M= Mother's Educational level score (1=Elementary, 2=High School,3=post-secondary non university and 4=post-secondary university).

A= Children's age in years

S= Children's schooling in completed years

L= Children's number of weeks worked during 1993-94

O= Children's Pineo-Porter Occupational Status Score (0-100 points) for main occupation 1993-94

W= Children's Total Earnings 1993-94 comprised by non zero wages and salaries

Table T-2/ Path Model Results: Birthplace Groups

Path Coefficients	Sons						Daughters					
	CB All	FB All	FB U.S.	FB Eur.	FB Asia	FB Other	CB All	FB All	FB U.S.	FB Eur.	FB Asia	FB Other
Rfm	0.63	0.72	0.74	0.73	0.83	0.62	0.61	0.66	0.62	0.66	0.69	0.67
Psf	0.25	0.28	n .22	.28	0.14	0.19	0.21	0.29	0.48	0.29	0.32	0.33
Psm	0.16	0.12	0.37	n .10	n .26	n .20	0.19	0.12	n .23	0.14	n .09	n .21
Psa	n .08	0.19	n .27	0.20	n .06	n .13	n.16	0.27	0.26	0.27	0.31	n .08
RPs	0.94	0.89	0.77	0.90	0.92	0.89	0.9	0.85	0.84	0.82	0.71	0.88
Plf	n .06	n .15	n .33	n .08	n .16	n .07	n .07	n .07	n .18	n .09	n .10	n .15
Plm	n .04	n .07	n .40	n .07	n .25	n .03	n .03	n .11	n .19	n .06	n .25	n .21
Pla	0.06	0.09	0.26	0.37	n.-.13	n .19	0.19	0.12	n .28	0.31	n .01	-0.25
Pls	0.34	0.33	0.52	0.28	0.44	0.38	0.36	0.32	0.26	0.24	0.40	0.35
RPl	0.94	0.94	0.81	0.89	0.87	0.91	0.92	0.93	0.93	0.85	0.91	0.90
Pof	n .04	n .02	n .26	n .17	n .28	n .04	n .04	n .06	n .17	n .18	n .12	n .17
Pom	n .02	n .07	n .27	n .21	n .23	n .03	n .02	0.16	n .04	.24	n .15	n .17
Poa	-0.32	-0.29	-0.38	-0.19	n.-.43	n.-.17	-0.19	n.-.09	n.-.26	n.-.07	n.-.17	n.-.24
Pos	0.58	0.56	0.69	0.65	0.39	0.64	0.59	0.62	0.46	0.65	0.63	0.42
Rpo	0.82	0.83	0.66	0.78	0.82	0.86	0.86	0.81	0.82	0.8	0.81	0.81
Pwf	n .05	n .10	n .37	n .09	0.37	n .02	n .02	0.18	n .30	0.25	n .12	n .24
Pwm	n .07	n .11	n .41	n .09	n .40	n .05	n .05	n .03	n .20	n .10	n .11	n .15
Pwa	-0.43	-0.31	-0.60	-0.21	-0.33	-0.22	-0.29	-0.38	-0.52	-0.28	-0.48	-0.46
Pws	0.20	n .09	.67	n .17	n.-.01	n .22	0.24	0.41	n .19	0.54	n .07	n.15
Pwl	0.74	0.68	0.70	0.72	0.84	0.59	0.76	0.74	0.9	0.75	0.56	0.81
Pwo	0.22	0.37	0.21	0.33	0.46	0.27	0.22	0.28	0.38	0.24	n.13	0.34
RPw	0.80	0.75	0.62	0.77	0.57	0.80	0.80	0.75	0.76	0.74	0.66	0.59

Symbols:
CB=Canadian Born
FB=Foreign Born
n =non statistically significant path coefficient (p>.05)

Table T-3 / Path Model Results: Aboriginal Status Groups

Path Coefficients	Sons		Daughters	
	Non Aboriginal	Aboriginal	Non Aboriginal	Aboriginal
Rfm	0.6	0.74	0.59	0.44
Psf	0.35	n.37	0.32	n.20
Psm	0.18	n.12	0.21	n.27
Psa	n-.07	0.29	0.12	0.17
RPs	0.90	0.84	0.86	0.88
Plf	n.07	n.27	n.13	n.10
Plm	n.03	n.22	n.07	n.11
Pla	n-.03	n-.16	0.1	-0.18
Pls	0.30	0.38	0.36	0.5
RPl	0.94	0.88	0.92	0.85
Pof	n.08	n.15	n.20	n.17
Pom	n.10	n.24	n.12	n.42
Poa	-0.13	-0.53	-0.27	n-.39
Pos	0.62	0.88	0.52	0.38
Rpo	0.77	0.59	0.84	0.85
Pwf	n.19	n.28	n.12	n.57
Pwm	n.11	n.36	n.11	n.41
Pwa	-0.42	n-.20	-0.41	n-.28
Pws	0.17	n.21	0.14	n.04
Pwl	0.66	0.86	0.9	0.92
Pwo	0.27	n.36	0.28	0.49
RPw	0.77	0.63	0.8	0.52

Symbols:
n =non statistically significant path coefficient (p>.05)