UNDERGRADUATE RESEARCH

SOCIAL MOBILITY IN THE UNITED STATES AS A MARKOV PROCESS

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Abstract

Previous research on intergenerational mobility in income, occupation, or social class as a Markov process typically uses regression models to analyze cross-sectional data. In this paper we draw data from the National Longitudinal Survey of Youth (NLSY) to build Markov transition states, producing a set of stylized facts from these longitudinal data. We derive the probabilities that children will repeat the occupational, educational, or child-raising choices of their parents. This gives us insight into how such lifestyle choices are vertically transmitted from parents to children, and the degree of persistence of these choices over the generations.

Introduction

There has been much research on intergenerational mobility. As Gaer, Schokkaert, and Martinez (2001) postulate, we attempt to measure it not only for a description of movement, but also to learn something about economic opportunity and the equality or inequality of life chances and opportunities. For example, if the inheritability of status is so large as to limit equality of opportunity, when and how should government step in to level the playing field (Ahlburg, 1998)? For that matter, what exactly is being inherited? Whereas earlier studies like Blau and Duncan (1967) concentrated more on a person's socio-economic status in and of itself relative to his/her parents, later approaches such as Jenks et al. (1979) began to focus on the determinants of status i.e. the level of investment in a child. Certainly from a government intervention standpoint, it is important to know the component causes of (im)mobility rather than just the end effect.

Background

To interpret data, we must use a set of assumptions that will destroy some trees so as to make the forest visible. The first of these assumptions is the Markov assumption, or more accurately, the assumption that transition probabilities have the Markov property.

In a system with the Markov property, the probability of achieving any given future state is conditioned only on the present state and not on the past states. For example, in dice-driven board games, the probability of adopting any of the set of possible future states, given the present state depends only on how the dice are rolled and not on how the game acquired the present state. This assumption allows us to treat people in the same categories as having the same transition probabilities. Also, it provides a method to estimate future transitions, for which there are no data, using the distribution of status in the present state.

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Hodge (1966) compared actual movement data with a simulation based on the Markov chain. Among his findings was that only 13.4% of grandsons in his data set would need to change occupations to come in line with the "perfect" mobility condition in which every generation is independent of the last. This implies that the cumulative effect of the generations before the parents (the past states) does not matter greatly.

Even so, there are still caveats. Bowles & Gintis (2002) point out two common types of measurement error in income mobility studies: the misreporting of parents' income and transitory influences on children's income that do not necessarily reflect permanent status. These transitory influences exaggerated early estimates of mobility by underestimating a core metric of mobility called the elasticity of earnings.

The elasticity of earnings communicates how quickly the offspring's earnings change with respect to the parent's income. It is measured by finding the average percentage change in the earnings of the population of offspring when the population of parents' earnings changes by one percent. A large elasticity of earnings indicates that the offspring's earnings are strongly affected by the parent's earnings, which is not desirable in an economy that strives to provide equal opportunity for all.

According to Zimmerman (1992), these two errors led early researchers to conclude that the elasticity of earnings was no more than 0.2. His own estimates, which correct for these errors, find elasticities closer to 0.4, indicating much less mobility than was previously thought.

A second assumption that goes hand-in-hand with the Markov assumption is that of homogeneity—that the entire population under study is subject to the same transition probabilities. Homogeneity allows us to treat the relative number of persons making a specific movement, as in a table of actual movement data for example, as probabilities which can be assembled into a Markov transition matrix.

McFarland (1970) notes that separating the population into various classes may achieve a better fit at the cost of more variables and the need for more data. He further cautions that attempts to estimate the n-step transition matrix by raising the one-step matrix to the nth power may overestimate mobility. The assumption violation that he is warns about here, however, is that of stationarity—the assumption that transition probabilities remain constant (stationary) over time. By many accounts, mobility decreases over time. As he puts it, "If the proportion of people moving declines over time, then there is considerable appeal to the notion that, in one way or another, the *probability* of moving declines over time," (McFarland, 1970, p. 466).

Many personal traits can determine a person's economic success, but some matter more than others. Bowles, Gintis, and Groves (2005) argue that the transmission of IQ, even if we can assume that to be a measure of pure intellect, or *cognitive ability*, is not nearly as important economically as the level of schooling completed, which is a function of intellect, motivation, and resources, or *cognitive performance*. Recent findings by Bouchard (2004) indicate that a wide variety of human traits previously thought to be shaped solely by the environment are in fact heritable. He also finds that the effect of genetics on intelligence, political leanings, and religiosity increase with age. Restuccia and Urrutia (2004) assert that economic opportunity is largely influenced by investment in early education and that this explains the relatively high persistence in earnings between generations in the U.S. That is, families which are too poor to afford the resources to invest in their children's early (formative) education are more likely to produce adults who have a relatively lower chance of completing college.

If we assume that this connection between early education and economic opportunity is true, then its effect is bolstered by the relative opportunity cost of having children. That is, a

person who gives up less economic opportunity top bear children, or perceives that s/he gives up less opportunity, is more likely to bear them. Thus, poor persons are more likely to have children in youth while they lack adequate resources to invest in their children's education. Meanwhile, those who have waited a relatively long time to bear children, perhaps by choosing to complete their schooling and obtain a job first, are more likely to be able to afford the resources that would allow their children to maximize their potential.

In the spirit of recent work that seeks to quantify factors other than income, we want to investigate the transmission of lifestyle choices using Markov chains in the same way as they have been used to study intergenerational income in years past.

Table 1

Number of respondents	Persons living with at age 14	Category
8570	FATHER-MOTHER	MARCOU
191	FATHER-STEPMOTHER	FATHER
30	FATHER-OTHER WOMAN RELATIVE	FATHER
9	FATHER-OTHER WOMAN	FATHER
146	FATHER-NO WOMAN	FATHER
6	FATHER-MISSING WOMAN	FATHER
841	STEPFATHER-MOTHER	MOTHER
14	STEPFATHER-STEPMOTHER	OTHREL
2	STEPFATHER-WOMAN RELATIVE	OTHREL
2	STEPFATHER-OTHER WOMAN	OTHREL
2	STEPFATHER-NO WOMAN	OTHREL
102	MAN RELATIVE-MOTHER	MOTHER
2	MAN RELATIVE-STEPMOTHER	OTHREL
235	MAN RELATIVE-WOMAN RELATIVE	OTHREL
1	MAN RELATIVE-OTHER WOMAN	OTHREL
17	MAN RELATIVE-NO WOMAN	OTHREL
54	OTHER MAN-MOTHER	MOTHER
1	OTHER MAN-STEPMOTHER	OTHREL
9	OTHER MAN-WOMAN RELATIVE	OTHREL
57	OTHER MAN-OTHER WOMAN	NONREL
6	OTHER MAN-NO WOMAN	NONREL
2124	NO MAN-MOTHER	MOTHER
1	NO MAN-STEPMOTHER	OTHREL
138	NO MAN-WOMAN RELATIVE	OTHREL
18	NO MAN-OTHER WOMAN	NONREL
3	NO MAN-NO WOMAN	NONREL
22	OTHER ARRANGEMENT	NONREL
3	ON MY OWN	NONREL
60	MISSING MAN-MOTHER	MOTHER
1	MISSING MAN-WOMAN RELATIVE	OTHREL

Framework

The various descriptors of social mobility that we collect are intended to give a more balanced picture than what could be obtained from job category alone. Because occupations are continually being created and made obsolete, social mobility cannot be defined solely in terms of

occupation. But the movement from one generation to the next can still be described in terms of education level, prestige level, and family structure.

Family Structure

The NLSY contains several variables that can be used to keep track of respondents from the 1970 census and tie them together. The variable R0001900 records the living arrangements of the respondent when s/he was 14 years old. Of those respondents, the 12,667 that completed the survey were arranged as shown in Table 1.

For subsequent years (1982-1994, 1996, 1998, 2000, 2002, 2004), the NLSY follows those same children with a variable for the usual living arrangement for each child. The 3,104 respondents who had had at least one child produced the categories shown in Table 2.

Table 2

Number of respondents with first child in category for 1982	Living arrangement for child, 1982	Category
2555	IN R'S HOUSEHOLD	R. married: MARCOU; R. unmarried male: FATHER; R. unmarried female:MOTHER
405	WITH OTHER PARENT	R. female: FATHER; R. male: MOTHER
61	WITH OTHER RELATIVES	OTHREL
4	IN FOSTER CARE	NONREL
28	WITH ADOPTIVE PARENTS	NONREL
2	LONG TERM CARE INSTITUTION	NONREL
0	AWAY AT SCHOOL	NONREL
45	DECEASED	
0	LIVES PART-TIME WITH BOTH PARENT	OTHREL
0	LIVES PART-TIME WITH R AND OTHER	OTHREL
4	OTHER	OTHREL
0	CHILD DELETED	

To control for age, only those records for children exactly 14 years old were extracted. Then, in order to make transition matrices from these data, the data were collapsed into five types of living arrangements for each sex: with both biological parents; with father; with mother; with other relatives; and with non-relatives. In order to obtain proportions representative of the entire U.S. population, the weights for the transition matrices reflected those measured for the respondents in 1979 (R0216100).

Occupational Category

The NLSY contains one variable (R0006900) giving the occupation code of the 1970 census for the longest job the respondent's mother held in 1978 and a corresponding variable (R0008300) for the occupation code for the respondent's father. Other variables give the occupation of the respondent in 1994 and 2000. The occupation codes for up to five different jobs are given for each year. In addition, the principal occupation of the respondent's most recent spouse is given (1979-1992, 1995). Together with the sex of the respondent, these data make

possible transition matrices between the occupation of a parent and the occupation of a child or child-in-law.

In order to make transition matrices from the 440 occupation codes from the 1970 census, we first aggregated occupations into several broad classes: Clerical, Craftsmen, Farm Labor, Farmers, Laborers, Managers and Officials and Proprietors, Military, Operatives, Private household workers, Professional and Technical, Sales, and Services. We decided to focus only on the relationship between a parent's occupation and that of same-sex children and children-in-law. We therefore produced four sex-based transition matrices: fathers to sons; fathers to sons-in-law; mothers to daughters; mothers to daughters-in-law. Keeping in mind that these data come from 1978, the two matrices based on the father's occupation are likely to be the most illuminating. We again used the weights for the respondents in 1979 (R0216100), in order to obtain proportions representative of the entire U.S. population. The weights for each respondent were divided by the number of times they appeared in the data.

Occupational Prestige

We also used the occupational prestige scores developed by Stevens and Featherman (1981) for the 1970 census codes. Each record was assigned its occupational prestige, and (using weights) the observations were divided into 11 quantiles. The table below shows the prestige range for each quantile, as well as the number of occupations in each and the percent of all observations in each. The quantiles were calculated for only two transition matrices—fathers to sons and fathers to sons-in-law—and the quantiles are slightly different for each of these since the observations are different for each of these.

Table C

Rank	Minimum score	Maximum score	Number of Occupations	Percent
Fathers to Sons				
0	905	1,469	35	9.9
1	1,474	1,725	30	9.3
2	1,740	1,909	21	9.6
3	1,918	2,064	20	9.7
4	2,065	2,604	35	8.8
5	2,620	3,477	42	9.4
6	3,520	4,181	17	7.1
7	4,246	4,934	17	6.2
8	5,023	5,023	1	10.7
9	5,033	7,008	34	9.7
10	7,034	9,166	51	9.6
Fathers to Sons-In-Law				
0	905	1,501	42	9.8
1	1,508	1,746	29	9.9
2	1,750	1,950	24	9.0
3	1,959	2,078	18	9.8
4	2,091	2,604	37	9.4
5	2,620	3,438	39	10.0
6	3,461	4,181	21	7.4
7	4,246	4,964	19	6.5
8	5,023	5,023	1	10.9
9	5,033	7,307	42	9.9
10	7,364	9,166	50	7.6

Highest Grade Completed

The NLSY also contains variables giving the highest grade completed by the respondent's mother (R0006500) and father (R0007900), as of 1979. Other variables give the highest grade

completed by the respondent (1979-1992). We make four sex-based transition matrices for the highest grade completed using the largest of the figures given for the respondent and the 1979 weights (R0216100).

Findings

First, remember a few things about the framework: that the data for the parents' principal occupation are coming from 1978, that the weight of each person is divided by the number of times s/he appears, and that the latest surveys of respondents' spouses occurred in 1979-1992 and 1995, whereas the surveys of the respondents themselves occurred in 1994 and 2000.

From the NLSY data we produce a set of fifteen of transition matrices for the four categories. These are found in the appendix. The transition matrices show the distribution of movement between the statuses of the respondents and their children in various descriptors of social mobility. To help digest this data, we generate the steady state matrices by raising the transition matrices to the 99^{th} power.

Remember the example of the dice-driven board game? When we multiply the transition matrix by itself, we are in effect doing the same thing as rolling the dice in a board game. At any given time in the game, the status of the next round depends on the status of the present round, the present round being the data that forms the transition matrices. The status of each subsequent round in the future, however, depends less and less on the status of the current round and more and more on the probabilities that determine how the game shifts from one round to the next. By the time the game has been run for 99 rounds (this is an arbitrary number chosen by the authors that is intended to be overkill), we assume that the state of the game depends completely on the probabilities of making each kind of transition, and not at all on the state of the game in the beginning. Put differently, it means that the category of occupation of this generation's children, the status of this round of the game, does not at all affect the category of occupation of this generation's children's children's … children's children.

Therefore, the rows of the steady state matrices are all equal, so for each category, we have transposed just one row from each of its matrices into a column of the steady state matrix. For example, the steady state matrix for Family Structure (Table 1) has three columns, one for each transition matrix in that category.

The steady state matrices represent a projection of the trends in the transition matrices. *They are not predictions.* They are instead matrices that project the state that would result if the trends of the present remain steady. Essentially the steady state is the logical extreme of the hypothesis that the percentage of persons who make each transition in the transition matrix represent the probability of making that transition. The steady state also acts as a summary of the transition matrices by collapsing the data of each transition matrix into just one row.

Family Structure

From Table I in the appendix, the reader can see that fewer than half of the male children were raised by couples. Actually, there is a strong trend ($\geq 38\%$) of males being raised by single mothers regardless of the family structure of the parents. Females (Table II) are more likely than males to be raised by couples, although females also show a significant likelihood of being raised by a single mother. Interestingly, the children of males raised by "others" were predominantly raised by relatives as opposed to couples or single mothers. Other than this, the children of both sexes are predominantly raised by couples and single mothers.

The trends in the transition matrices point toward most children being raised by either couples or single mothers. Although once the data is collapsed into Table 3, the almost mirror

image reversal between the sexes of numbers for couples versus single mothers is more pronounced.

Steady State of Family Structure in Percentages,
Rows are Guardians, Columns are Sex

Table 3

Guardian	Male	Female	Total
Couple	36.216	50.321	46.745
Mother	51.295	33.590	38.000
Father	6.036	8.090	7.498
Relative	6.363	4.658	5.174
Other	0.090	3.340	2.583

Occupational Category

Appendix Tables IV through IX show some significant differences between career paths with regard to sex and marital status; however, age is a confounding variable. For example, we cannot tell just by looking whether the increased tendency of wives relative to unmarried daughters to hold clerical jobs is due to marital status or age at the time of this part of the survey. We speculate that the lower unemployment among married children is related more to marital status than age, considering that the married people are actually younger.

Categories of occupation that appear more prevalent in males include those of managers, officials, and proprietors, operatives, craftsman, and laborers. Categories more prevalent in females include clerical, professional, technical, private household worker, and services. While unemployment is lower for married persons of either sex, unmarried males have the highest unemployment while married males have the lowest, as shown in Table 4.

Steady State of Occupational Category of Longest Held Job in Percentages,
Rows are Categories, Columns are Children

Table 4

Occupation	Father Son Matrix	Father Daughter Matrix	Mother Son Matrix	Mothers Daughter Matrix	Father S*-In-Law Matrix	Mother D*-In-Law Matrix
Clerical	5.259	23.939	4.800	23.865	5.115	31.681
Craftsman	18.316	1.576	17.169	2.025	23.024	1.566
Farm Labor	0.425	0.077	0.716	0.191	0.992	0.248
Farmers	0.383	0.030	0.495	0.119	0.411	0.046
Laborers	7.324	1.850	6.637	1.955	7.835	1.300
Man, Off, Prop	16.160	13.579	16.933	13.881	11.676	8.404
Military	0.140	0.004	0.221	0	4.721	0.697
Operatives	12.415	4.531	12.975	3.951	17.158	3.947
Private HHW	0.063	1.956	0.110	1.245	0.030	1.311
Prof, Tech	17.094	24.077	17.680	24.931	14.404	22.110
Sales	4.860	4.794	4.711	4.435	5.393	6.885
Services	8.366	14.982	8.063	14.683	6.529	14.949
Other/None	9.193	8.604	9.489	8.719	2.712	6.857

*Son-In-Law, Daughter-In-Law

Occupational Prestige

Tables X and XI in the appendix show the distribution of occupational prestige for sons and sons-in-law. A quick glance at the distribution of prestige for blood sons shows that they roughly equal their fathers; six of the table's eleven modes fall along the diagonal. Additionally, most of the double-digit percentages correspond to low-to-low or high-to-high transitions.

It is interesting to note that low-to-low-and high-to-high transitions are also common in the prestige distribution of sons-in-law. This is despite the fact that the sons-in-law had not had as long to build their careers before being surveyed as had the blood sons. Singling out the double-digit percentages will more visibly show that the middle class disproportionately transitions to low prestige levels in these data.

Although Table 5 shows the bimodal distribution of prestige for blood sons, the prevalence of high-to-high transitions for sons-in-law is relatively muted compared to Table XI.

Steady State of Occupational Prestige in Percentages,
Rows are Prestige Level, Columns are Sons

Table 5

Prestige	Blood	In-Law
0	10.162	13.373
1	9.362	13.023
2	10.169	11.026
3	7.507	7.543
4	7.708	9.490
5	6.374	7.825
6	6.300	6.030
7	8.704	8.717
8	12.389	7.672
9	10.982	8.887
10	10.343	6.414

Highest Grade Completed

Tables XII through XV in the appendix show the distribution of highest grade completed for parent and child, male and female. There are some interesting trends in education in these data that are similar for all of the tables. The reader will notice a very prevalent triangle of zeros in each table that indicates the very low probability that any respondent would have attained less education than his/her parent. Also there is an area of low probability in the upper right corner of every table that corresponds to the low probability of uneducated parents to produce extremely educated children. The most common educational attainments for these data are a high school degree or a Bachelor's degree. The reader can see that virtually every mode corresponds to children achieving either a high school diploma or a Bachelor's degree. As a group, daughters conform more strictly to this tendency. Further, the mode for daughters switches from diploma to Baccalaureate earlier than it does for sons.

Given the descriptions above, the summary that Table 6 provides should not be surprising. The authors suggest that the reader look at the appendix directly, especially for this category, because of the large loss of detail between the transition matrices and the steady states.

Steady State of Highest Grade Completed in Percentages,
Rows are Highest Grade Completed, Columns are Children

Table 6

Grade	Father Son Matrix	Father Daughter Matrix	Mother Son Matrix	Mother Daughter Matrix
Null	0	0	0	0
0th	0	0	0	0
1st	0	0	0	0
2nd	0	0.000	0	0.000
3rd	0.000	0.000	0	0.000
4th	0.001	0	0.002	0
5th	0.010	0.008	0.012	0.009
6th	0.006	0.004	0.006	0.004
7th	0.184	0.200	0.209	0.071
8th	0.692	0.626	0.678	0.319
9th	1.764	0.994	1.672	0.675
10th	3.104	2.507	2.991	2.038
11th	4.770	3.329	3.999	1.870
12th	32.088	28.611	27.199	18.813
13th	9.172	8.863	7.089	9.463
14th	9.641	11.052	8.174	11.533
15th	4.898	6.873	6.192	7.314
16th	19.212	21.786	20.929	28.599
17th	4.335	6.973	5.727	7.217
18th	4.507	4.585	6.502	6.531
19th	2.553	2.017	3.367	2.832
20th	3.063	1.569	5.254	2.711

Conclusions

The family structure of male respondents is further from the societal ideal of a nuclear family than that of female respondents, with more males raised by mothers than by couples.

There are significant differences in occupational categories between married and unmarried children, although we cannot say whether occupation drives marriage or vice versa. The earlier survey of the spouses is a confounding factor, but certainly it would be surprising to find that having less time to develop one's career improves the chances of holding a job.

The unmarried children in the data tend to maintain approximately the same job prestige as their parents. The children's spouses, who were surveyed earlier, tend to hold less prestige than the parents, especially when the parents have a medium level of prestige.

The one-step matrices for education display several interesting patterns. Children tend to slightly exceed the educational attainments of their parents. There is a pronounced pattern of children exactly attaining high school degrees until their parents have completed some college. The pattern is more consistent with females regardless of the parent. It tends to take more highly educated parents to produce a son with a Baccalaureate compared to a daughter. Even once the parents have enough education to make a Bachelor's degree the most likely outcome, a son will be less likely to get one than a daughter. This may tie in with the lower probability that sons are raised by couples.

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Appendix

Family Structure, Rows are Guardians, Columns are Children
Measured in Percentages, with Mode Bolded for Readability

Sex: Male

Table I

Guardian	Couple	Mother	Father	Relative	Other
Couple	**46.532**	43.067	6.732	3.420	0.249
Mother	32.445	**52.516**	7.010	8.030	0
Father	35.484	**64.516**	0	0	0
Relative	9.111	**75.918**	0	14.971	0
Other	0	38.753	2.149	**59.098**	0

Sex: Female

Table II

Guardian	Couple	Mother	Father	Relative	Other
Couple	**59.719**	27.062	8.823	2.001	2.395
Mother	41.414	**42.941**	6.501	5.501	3.642
Father	**40.236**	26.075	14.377	14.313	4.999
Relative	34.193	**52.503**	4.655	4.128	4.522
Other	**45.234**	29.739	2.582	13.569	8.876

Sex: Total

Table III

Guardian	Couple	Mother	Father	Relative	Other
Couple	**56.591**	30.859	8.327	2.338	1.886
Mother	39.218	**45.286**	6.626	6.120	2.750
Father	**39.085**	35.388	10.894	10.846	3.788
Relative	30.684	**55.778**	4.004	5.645	3.889
Other	**33.723**	32.033	2.472	25.155	6.617

Occupational Category, Rows are Fathers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table IV

Occupation	Cleric	Craft	Farm L.	Farm	Labor	Man	Milit	Oprtv	House	Prof, T	Sales	Servc	Null
Clerical	6.945	15.344	0	0	5.167	13.810	0	11.281	0	**18.398**	6.308	12.035	10.714
Craftsman	5.748	**23.990**	0.309	0.531	8.268	14.362	0.020	14.549	0	12.041	3.581	7.072	9.529
Farm Labor	2.183	20.915	7.141	2.329	12.451	7.508	0	**24.847**	0.210	4.702	2.954	5.301	9.458
Farmer	2.506	**17.045**	5.075	16.439	5.709	10.240	0.642	14.408	0	11.515	4.003	5.620	6.798
Laborer	4.475	**23.663**	0.144	0.655	15.446	8.121	0.165	19.517	0.129	5.686	3.716	9.170	9.113
Man, O, P*	3.371	15.552	0.620	0.116	4.923	22.656	0.143	9.128	0.165	**23.070**	8.492	4.823	6.940
Military	2.474	**23.307**	1.016	0	5.892	15.859	0	15.568	0	14.608	3.728	10.335	7.213
Operatives	4.577	**21.667**	0.481	0.107	8.588	13.288	0.244	16.419	0	10.078	2.981	12.598	8.972
Household*	0	**25.135**	0	0	12.560	0	0	**25.135**	0	0	12.560	24.612	0
Prof, T*	4.331	11.374	0.460	0.572	3.843	21.730	0.079	4.323	0.138	**33.154**	5.039	5.821	9.137
Sales	10.485	18.443	0	0	3.336	**19.962**	0.095	8.798	0	17.878	8.436	4.018	8.549
Services	7.708	**16.962**	0.060	0.080	9.484	11.460	0.479	16.012	0	11.161	3.529	14.111	8.955
Null*	5.258	**18.671**	0.684	0.310	9.155	12.627	0.113	16.417	0.028	10.560	2.718	10.640	12.819

*Managers, Officials, and Proprietors; Private Household Workers; Professional and Technical; Unemployed/Data Not Available

Occupational Category, Rows are Fathers, Columns are Daughters
Measured in Percentages, with Mode Bolded for Readability

Table V

Occupation	Cleric	Craft	Farm L.	Farm	Labor	Man	Milit	Oprtv	House	Prof, T	Sales	Servc	Null
Clerical	**29.317**	1.859	0	0	1.914	14.712	0	5.199	2.064	16.539	5.761	18.052	4.582
Craftsman	**28.656**	2.829	0.510	0.282	1.708	11.510	0	6.911	1.386	15.237	4.200	16.315	10.457
Farm Labor	**29.249**	1.354	3.723	0	3.535	7.668	0	12.188	1.771	7.474	5.562	17.758	9.717
Farmer	21.128	2.184	0	1.704	1.696	12.804	0	1.900	0.845	**31.193**	1.109	14.059	11.377
Laborer	**29.301**	2.148	0	1.058	3.730	9.913	0.137	10.118	1.611	11.026	2.472	20.294	8.192
Man, O, P*	21.995	1.952	0.116	0	0.770	18.151	0	2.240	0.761	**29.082**	4.600	10.372	9.960
Military	21.061	0	0	0	0.882	16.627	2.124	3.671	0.528	**28.275**	3.651	19.541	3.638
Operatives	**23.810**	3.560	0.402	0.127	2.598	9.571	0	8.082	1.230	17.176	3.880	21.072	8.491
Household*	21.945	0	0	0	0	0	0	0	**35.968**	0	10.524	31.563	0
Prof, T*	16.832	0.608	0	0	1.572	14.479	0	1.626	1.371	**39.031**	5.163	8.441	10.877
Sales	23.802	0.531	0	0	1.721	12.164	0	2.078	1.692	**28.406**	6.368	16.106	7.133
Services	**27.161**	1.580	0.094	0	2.975	11.945	0	7.777	0.090	19.428	2.585	16.693	9.674
Null*	**24.869**	2.442	0.209	0	1.903	10.739	0.012	7.598	1.415	14.648	4.137	20.027	12.001

*Managers, Officials, and Proprietors; Private Household Workers; Professional and Technical; Unemployed/Data Not Available

Occupational Category, Rows are Mothers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table VI

Occupation	Cleric	Craft	Farm L.	Farm	Labor	Man	Milit	Oprtv	House	Prof, T	Sales	Servc	Null
Clerical	5.566	**20.246**	0.370	0.452	6.429	16.612	0	9.914	0.089	19.502	5.021	7.569	8.231
Craftsman	5.686	**17.798**	0	0	7.269	14.851	0.310	14.073	0	11.541	5.694	12.240	10.540
Farm Labor	5.370	21.171	8.471	5.335	12.210	5.085	0	**24.170**	0.310	1.683	1.927	6.813	7.455
Farmer	0	15.172	3.623	0	16.084	11.865	11.865	**27.189**	0	0	0	0	14.202
Laborer	4.868	17.429	3.869	0	12.676	10.526	0	**29.892**	0	14.651	0	2.201	3.887
Man, O, P*	3.467	15.082	1.243	0.406	3.666	**24.192**	0	5.637	0.597	23.758	4.068	6.735	11.148
Military	0	0	0	0	0	0	0	0	0	**50.000**	**50.000**	0	0
Operatives	5.149	**24.108**	0.208	1.247	9.372	11.941	0	17.462	0	11.307	2.977	5.916	10.312
Household*	4.934	**23.619**	0.169	0	14.931	7.794	0	18.488	0.159	7.445	1.498	15.475	5.489
Prof, T*	4.351	10.734	0	0.381	2.619	20.794	0.343	8.352	0	**28.961**	7.724	7.285	8.457
Sales	6.006	16.394	0.414	0.264	5.622	**21.244**	0.566	9.466	0	18.005	5.328	8.409	8.282
Services	4.777	**19.804**	0.334	0.748	9.518	12.340	0.105	16.048	0	11.582	3.099	11.891	9.754
Null*	5.236	**18.793**	0.832	0.685	7.625	15.446	0.138	14.059	0.025	13.355	4.475	8.803	10.527

*Managers, Officials, and Proprietors; Private Household Workers; Professional and Technical; Unemployed/Data Not Available

Occupational Category, Rows are Mothers, Columns are Daughters
Measured in Percentages, with Mode Bolded for Readability

Table VII

Occupation	Cleric	Craft	Farm L.	Farm	Labor	Man	Milit	Oprtv	House	Prof, T	Sales	Servc	Null
Clerical	**29.071**	1.513	0.170	0.255	1.013	13.441	0	3.412	1.786	22.297	4.145	14.208	8.690
Craftsman	**27.646**	2.104	0	2.014	1.056	14.952	0	4.320	3.257	17.400	2.841	12.963	11.447
Farm Labor	18.605	1.130	4.922	0	1.873	3.593	0	14.218	0	19.472	0	**21.930**	14.258
Farmer	0	0	0	0	0	0	0	**37.428**	0	10.848	0	**37.428**	14.296
Laborer	17.163	8.281	0	0	6.874	16.787	0.402	0.912	0	**22.471**	9.987	12.007	5.117
Man, O, P*	22.028	2.095	0	0	4.113	16.908	0	2.766	1.623	**23.080**	4.682	14.832	7.874
Military	0	0	0	0	0	0	0	0	0	0	0	0	0
Operatives	**26.024**	3.497	0	0	2.220	10.947	0	12.510	1.713	14.599	3.239	15.839	9.413
Household*	24.817	3.087	0	0	3.428	6.708	0	10.363	1.635	13.079	3.010	**25.288**	8.585
Prof, T*	18.235	1.770	0.142	0	1.084	14.694	0.068	1.294	0.641	**38.945**	4.921	10.385	7.819
Sales	**22.024**	1.732	0.082	0	1.419	16.804	0.480	1.633	2.692	19.988	4.867	19.474	8.804
Services	**27.579**	1.845	0.508	0	2.346	11.990	0	6.860	0.428	17.222	3.590	18.545	9.086
Null*	**23.168**	2.284	0.311	0.200	1.995	11.425	0	6.303	1.113	19.351	4.645	17.512	11.693

*Managers, Officials, and Proprietors; Private Household Workers; Professional and Technical; Unemployed/Data Not Available

Occupational Category, Rows are Fathers, Columns are Sons-In-Law
Measured in Percentages, with Mode Bolded for Readability

Table VIII

Occupation	Cleric	Craft	Farm L.	Farm	Labor	Man	Milit	Oprtv	House	Prof, T	Sales	Servc	Null
Clerical	4.815	**23.422**	0	0	6.627	16.011	3.440	15.175	0	13.318	3.494	11.506	2.193
Craftsman	5.679	**25.302**	0.916	0.455	8.063	10.935	3.718	19.348	0.019	11.433	5.149	6.439	2.544
Farm Labor	2.353	**25.502**	10.812	0.459	16.275	1.716	1.686	23.216	0	7.304	1.590	6.273	2.815
Farmer	3.573	**23.868**	7.410	5.400	5.351	6.940	0.946	15.100	0	11.133	6.827	10.579	2.874
Laborer	5.751	**23.659**	1.135	0.134	11.257	7.464	3.740	22.923	0.060	11.613	2.845	6.104	3.315
Man, O, P*	4.068	**21.163**	0.524	0.439	7.144	14.376	4.235	11.118	0.045	18.329	9.599	6.097	2.863
Military	1.858	**24.393**	0	0	7.660	13.910	18.086	7.483	0	16.924	4.926	3.261	1.498
Operatives	5.448	**28.425**	1.608	0.499	8.704	7.885	5.198	23.223	0.085	7.281	1.897	7.276	2.473
Household*	0	19.717	0	0	7.158	14.311	6.282	**39.433**	0	0	0	6.282	6.817
Prof, T*	5.306	15.202	0.870	0.806	4.996	15.021	3.253	12.313	0	**25.622**	8.006	5.367	3.238
Sales	4.562	16.896	0.489	0.101	6.852	17.444	2.843	12.785	0.024	**20.132**	9.325	5.753	2.794
Services	6.734	**24.678**	0.450	0.059	8.857	9.066	5.720	17.931	0	12.443	4.594	6.993	2.476
Null*	4.629	**21.299**	1.325	0.261	7.938	11.796	5.097	20.545	0	10.526	4.705	8.037	3.843

*Managers, Officials, and Proprietors; Private Household Workers; Professional and Technical; Unemployed/Data Not Available

Occupational Category, Rows are Mothers, Columns are Daughters-In-Law
Measured in Percentages, with Mode Bolded for Readability

Table IX

Occupation	Cleric	Craft	Farm L.	Farm	Labor	Man	Milit	Oprtv	House	Prof, T	Sales	Servc	Null
Clerical	**37.914**	1.138	0.268	0.083	1.396	7.926	0.266	2.885	1.315	21.463	5.530	12.956	6.859
Craftsman	**25.741**	3.878	0	0.551	1.258	10.905	0.212	7.548	0.228	19.306	6.681	17.292	6.399
Farm Labor	17.484	4.340	1.314	0	1.041	1.120	0	13.534	3.039	6.697	2.837	**41.336**	7.259
Farmer	**33.069**	0	0	0	0	3.313	0	8.494	9.063	8.494	0	26.051	11.515
Laborer	20.871	1.535	0	0	4.274	8.100	3.495	9.910	2.434	3.256	12.013	**28.523**	5.590
Man, O, P*	**29.170**	2.576	0	0	0.719	11.659	0.272	1.617	1.804	21.002	7.504	17.843	5.833
Military	0	0	0	0	0	0	0	0	0	0	**100.000**	0	0
Operatives	**32.064**	2.732	0.600	0	1.521	4.614	1.293	12.466	1.740	13.382	4.052	19.308	6.227
Household*	**36.868**	0.457	0.419	0.071	1.590	6.924	0.248	7.196	2.180	8.286	7.200	18.485	10.077
Prof, T*	23.787	1.133	0.073	0	1.077	10.638	1.152	1.140	0.967	**34.581**	6.806	11.807	6.839
Sales	**41.114**	1.228	0	0	1.849	7.636	0.492	3.563	0.291	18.256	6.897	11.705	6.969
Services	**30.498**	2.220	0.516	0	1.062	6.635	0.962	6.775	1.643	16.516	6.150	20.190	6.835
Null*	**30.434**	1.708	0.544	0.148	1.665	7.149	0.792	7.528	1.738	17.082	5.603	16.776	8.833

*Managers, Officials, and Proprietors; Private Household Workers; Professional and Technical; Unemployed/Data Not Available

Occupational Prestige, Rows are Fathers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table X

Prestige	0	1	2	3	4	5	6	7	8	9	10
0	**21.660**	16.192	16.495	8.677	5.914	5.255	5.164	6.068	6.429	5.477	2.670
1	15.026	**17.108**	10.650	7.517	9.664	5.862	6.065	6.210	9.770	6.078	6.049
2	12.237	**12.925**	12.796	8.484	9.547	8.151	9.298	7.398	9.694	6.083	3.386
3	13.660	9.573	12.553	**15.589**	9.484	4.670	4.934	5.885	8.669	8.541	6.441
4	**12.192**	8.865	11.698	7.849	11.569	5.868	9.221	9.480	8.337	8.401	6.521
5	10.011	6.684	9.573	8.194	9.781	12.007	5.833	9.016	**12.950**	9.933	6.018
6	6.738	9.146	10.957	8.631	5.888	7.555	7.130	10.096	12.061	**14.126**	7.671
7	5.203	7.518	10.243	6.845	9.386	4.653	5.730	9.547	**15.624**	11.806	13.444
8	4.950	6.252	8.833	5.607	4.983	6.353	5.809	10.403	**19.950**	12.141	14.721
9	7.067	4.596	4.584	4.365	5.550	5.488	4.859	10.888	15.828	**20.476**	16.301
10	4.253	4.474	5.426	4.327	5.700	6.028	5.874	10.196	13.409	15.914	**24.399**

Occupational Prestige, Rows are Fathers, Columns are Sons-In-Law
Measured in Percentages, with Mode Bolded for Readability

Table XI

Prestige	0	1	2	3	4	5	6	7	8	9	10
0	**21.916**	13.682	14.551	7.450	10.950	5.939	6.277	6.201	4.205	5.673	3.155
1	17.472	**18.363**	11.751	5.588	11.296	9.218	6.363	5.810	6.145	5.429	2.565
2	15.466	**20.221**	14.350	8.332	10.451	9.066	4.256	4.684	6.553	4.005	2.616
3	**12.808**	10.100	10.241	12.460	11.920	7.005	8.083	8.013	5.676	9.017	4.676
4	10.190	**14.205**	12.640	8.319	11.219	7.761	5.856	7.901	9.138	8.088	4.683
5	9.835	**12.032**	11.377	8.758	10.711	8.725	5.397	8.518	7.815	10.407	6.426
6	13.411	**13.673**	10.745	5.871	8.307	8.533	5.081	10.847	8.532	9.644	5.356
7	9.982	6.630	8.526	8.354	6.122	7.148	8.198	**13.754**	8.497	10.669	12.120
8	**11.879**	10.996	9.743	7.943	6.545	8.957	5.441	10.463	9.200	10.674	8.158
9	8.990	8.544	6.343	6.299	6.923	6.993	4.987	11.331	12.668	**13.808**	13.116
10	5.771	8.038	6.286	3.650	6.989	6.801	6.597	14.526	9.238	**18.091**	14.013

Highest Grade Completed, Rows are Fathers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table XII

Grade	Null	0th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Null	0	0	0.103	0	0.048	0.059	0.480	0.405	1.237	5.268	7.200
0th	0	0	0	0	0.767	3.945	0	2.048	0	5.014	10.297
1st	0	0	0	0	0	0	0	0	7.915	**21.427**	0
2nd	0	0	0	0	1.076	5.743	0	6.851	2.022	9.308	6.339
3rd	0	0	0	0	0	0	1.403	2.312	4.057	11.417	7.913
4th	0	0	0	0	0.883	0.483	0.799	0.850	4.995	6.777	13.187
5th	0	0	0	0	0	0	0	0	0.997	5.328	13.316
6th	0	0	0	0	0	0	0	1.017	2.518	8.317	8.390
7th	0	0	0	0	0	0	0	0	0.845	2.538	7.535
8th	0	0	0	0	0	0.080	0.063	0	0.850	6.326	5.546
9th	0	0	0	0	0	0	0	0.111	1.793	2.144	5.065
10th	0	0	0	0	0	0	0	0.141	1.105	4.618	4.939
11th	0	0	0	0	0	0	0.073	0	0.441	0.697	2.849
12th	0	0	0	0	0	0	0.019	0	0.244	0.792	2.194
13th	0	0	0	0	0	0	0	0	0	0.266	2.303
14th	0	0	0	0	0	0	0	0	0.110	0.273	1.814
15th	0	0	0	0	0	0	0	0	0	2.520	0.328
16th	0	0	0	0	0	0	0	0	0	0	0.963
17th	0	0	0	0	0	0	0	0	0	0	0
18th	0	0	0	0	0	0	0	0	0	0	0
19th	0	0	0	0	0	0	0	0	0	0	0
20th	0	0	0	0	0	0	0	0	0	0	1.298

Highest Grade Completed, Rows are Fathers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table XIII (cont.)

Grade	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
Null	11.284	13.565	**36.336**	7.844	5.639	2.484	4.489	0.864	1.068	0.718	0.909
0th	5.338	10.968	**36.107**	9.445	5.525	5.248	2.246	2.490	0	0.564	0
1st	5.077	20.254	14.579	20.050	10.698	0	0	0	0	0	0
2nd	21.496	4.187	**30.637**	3.591	2.399	4.742	1.609	0	0	0	0
3rd	9.595	10.144	**35.193**	8.440	1.365	3.834	2.365	0	0.882	0	1.080
4th	8.481	15.480	**28.528**	2.768	5.396	0.676	7.919	1.304	0	1.473	0
5th	14.864	6.961	**39.906**	3.423	5.737	4.090	1.560	2.427	0	0.561	0.829
6th	7.686	11.267	**33.909**	3.310	5.439	1.107	8.906	0.200	1.928	2.712	3.295
7th	14.040	18.022	**40.248**	3.849	4.037	1.060	4.316	1.719	0	0	1.791
8th	7.145	9.892	**42.103**	6.227	5.803	4.329	7.016	2.296	1.152	0.170	1.002
9th	7.389	12.760	**49.798**	6.894	6.258	2.589	3.731	0.565	0.904	0	0
10th	6.444	13.828	**39.897**	8.787	7.408	4.641	4.405	0.525	0.862	0.724	1.675
11th	7.034	8.921	**50.023**	9.104	6.428	2.103	10.478	0.974	0	0	0.875
12th	4.545	6.607	**46.939**	10.097	8.094	3.199	11.464	2.136	1.845	1.074	0.751
13th	4.108	3.738	**27.590**	12.250	11.396	6.795	17.466	3.035	6.461	2.198	2.392
14th	2.773	3.280	**26.935**	10.041	11.181	5.633	24.302	3.791	4.950	2.744	2.173
15th	0.433	4.315	**24.326**	14.988	16.611	6.140	18.410	8.501	2.921	0	0.507
16th	0.923	2.222	18.890	8.937	12.432	5.148	**30.583**	6.649	5.261	5.953	2.040
17th	0	1.749	19.416	4.686	8.877	7.923	**21.314**	12.355	14.607	4.292	4.782
18th	1.322	1.109	10.891	1.763	7.228	7.240	**36.474**	5.335	12.165	5.757	10.715
19th	0	0	25.575	0.609	0.651	5.586	19.514	6.200	7.470	1.090	**33.306**
20th	0	1.450	7.124	6.914	9.652	9.170	**32.175**	9.312	8.767	3.323	10.816

Highest Grade Completed, Rows are Fathers, Columns are Daughters
Measured in Percentages, with Mode Bolded for Readability

Table XIV

Grade	Null	0th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Null	0	0	0.144	0	0.061	0.310	0.363	0.444	2.958	3.385	6.265
0th	0	0	0	0	3.568	2.104	0	6.362	3.350	5.941	9.581
1st	0	0	0	0	0	4.769	0	3.149	0	3.868	4.915
2nd	0	0	0	0	3.051	0	0	3.167	2.210	9.543	0.955
3rd	0	0	0	0	0.465	0	0.917	1.848	0.464	5.131	12.315
4th	0	0	0	0	1.449	0	0	0.655	8.836	5.030	4.763
5th	0	0	0	0	0	0	1.059	1.359	1.785	1.361	4.588
6th	0	0	0	0.301	0.208	0	0.726	0.452	0.620	4.892	7.492
7th	0	0	0	0	0	0	0	0.466	0	6.129	3.256
8th	0	0	0	0	0	0	0	0.093	0.615	2.374	5.619
9th	0	0	0	0	0	0	0	0	1.148	1.587	6.373
10th	0	0	0	0	0	0	0	0	1.123	2.030	4.127
11th	0	0	0	0	0	0	0	0.073	0.406	1.880	3.419
12th	0	0	0	0	0	0	0	0	0.498	0.509	1.542
13th	0	0	0	0	0	0	0	0	0	1.502	0.680
14th	0	0	0	0	0	0	0	0	0	0.783	0.253
15th	0	0	0	0	0	0	0	0	0	0.222	0.548
16th	0	0	0	0	0	0	0	0	0	0	0.463
17th	0	0	0	0	0	0	0	0	0	1.280	0
18th	0	0	0	0	0	0	0.180	0	0	0	0
19th	0	0	0	0	0	0	0	0	0	0	0
20th	0	0	0	0	0	0	0	0	0	0	0.213

Highest Grade Completed, Rows are Fathers, Columns are Daughters
Measured in Percentages, with Mode Bolded for Readability

Table XV (cont.)

Grade	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
Null	8.033	9.180	**38.134**	7.776	8.142	3.076	7.037	2.162	1.693	0.430	0.408
0th	8.135	11.425	**26.584**	6.085	4.847	3.805	2.862	5.350	0	0	0
1st	18.210	7.049	**27.489**	4.799	19.983	2.350	3.420	0	0	0	0
2nd	8.563	3.919	**48.248**	4.996	9.809	0.881	3.373	0	1.285	0	0
3rd	10.181	5.460	**37.129**	6.929	5.094	3.870	9.675	0.522	0	0	0
4th	7.274	6.968	**35.293**	11.067	3.821	4.482	5.153	0	4.639	0	0.571
5th	5.953	3.273	**47.576**	4.847	11.126	5.247	10.327	0.511	0.988	0	0
6th	5.104	9.451	**37.643**	9.635	6.456	3.809	9.371	2.472	0.795	0.173	0.401
7th	9.447	2.800	**52.983**	9.487	6.378	2.508	4.448	0.389	0	0	1.709
8th	5.750	6.987	**46.271**	12.871	4.603	4.295	7.087	2.020	1.279	0	0.136
9th	6.945	9.642	**48.643**	8.298	9.054	4.219	3.432	0	0.256	0	0.403
10th	6.947	4.784	**51.933**	10.058	5.119	3.861	7.002	0.216	1.490	0.720	0.590
11th	7.214	11.423	**45.828**	8.190	9.262	3.552	4.287	1.132	1.815	0	1.520
12th	3.835	4.060	**42.431**	10.799	10.295	5.262	13.641	2.994	2.626	0.482	1.026
13th	1.555	2.475	**39.301**	11.783	8.477	12.677	14.647	3.930	1.478	0	1.495
14th	3.153	5.727	**25.935**	12.845	18.144	8.869	14.710	5.413	3.729	0.366	0.074
15th	3.331	2.223	19.637	4.831	10.263	8.140	**26.724**	9.324	9.959	4.798	0
16th	0.713	2.134	16.835	6.937	10.655	7.872	**33.097**	11.457	4.860	2.821	2.157
17th	0	0	11.282	6.200	9.125	2.540	**33.440**	20.368	8.587	4.169	3.009
18th	0	0.263	6.972	4.324	17.261	6.382	**37.529**	7.258	10.772	4.517	4.542
19th	0	0	9.518	1.088	6.362	8.769	**42.373**	7.197	11.828	12.866	0
20th	0	2.491	5.958	6.750	12.604	3.407	**38.081**	4.976	6.880	7.589	11.050

Highest Grade Completed, Rows are Mothers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table XVI

Grade	Null	0th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Null	0	0	0.177	0	0.174	0.102	0.460	0.558	1.229	6.277	10.190
0th	0	0	0	0	1.044	1.926	0	2.849	2.246	5.511	5.521
1st	0	0	0	0	0	9.901	0	0	0	9.346	12.091
2nd	0	0	0	0	2.864	4.845	0	5.332	1.471	1.228	4.582
3rd	0	0	0	0	0	2.864	2.428	3.035	1.806	2.311	5.071
4th	0	0	0	0	0	0	2.937	2.673	2.233	7.978	8.868
5th	0	0	0	0	0	0	0	0	3.073	5.209	4.478
6th	0	0	0	0	0	0	0	2.004	0.280	8.413	8.681
7th	0	0	0	0	0	0.980	0	0.307	6.629	10.129	9.897
8th	0	0	0	0	0	0	0.102	0	1.670	7.139	6.135
9th	0	0	0	0	0	0	0	0	0.748	5.685	9.330
10th	0	0	0	0	0	0	0	0.062	2.117	5.229	5.374
11th	0	0	0	0	0	0	0	0.076	1.138	2.378	4.775
12th	0	0	0	0	0	0	0.041	0	0.106	0.760	1.955
13th	0	0	0	0	0	0	0	0	0.473	0	2.021
14th	0	0	0	0	0	0	0	0	0	0	0.953
15th	0	0	0	0	0	0	0	0	0	0	1.525
16th	0	0	0	0	0	0	0	0	0	0.255	0.851
17th	0	0	0	0	0	0	0	0	0	0	1.317
18th	0	0	0	0	0	0	0	0	0	0	0
19th	0	0	0	0	0	0	0	0	0	0	0
20th	0	0	0	0	0	0	0	0	0	0	0

Highest Grade Completed, Rows are Mothers, Columns are Sons
Measured in Percentages, with Mode Bolded for Readability

Table XVII (cont.)

Grade	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
Null	9.718	15.054	**35.936**	5.818	3.378	2.990	4.452	1.693	1.348	0.139	0.307
0th	8.249	12.693	**37.326**	3.787	2.208	11.065	3.730	1.078	0	0.767	0
1st	7.674	0	**32.692**	21.106	7.189	0	0	0	0	0	0
2nd	8.979	13.643	**41.278**	6.466	9.312	0	0	0	0	0	0
3rd	12.151	8.533	**35.019**	17.540	2.764	1.738	1.955	1.436	0	0	1.347
4th	14.549	13.828	**25.136**	3.310	12.199	2.207	1.833	1.083	0	1.165	0
5th	6.775	17.330	**37.691**	11.793	5.215	0	6.719	0	0	0.619	1.098
6th	6.961	16.434	**31.421**	6.777	5.785	2.871	4.514	1.220	2.319	0	2.321
7th	12.236	12.329	**36.046**	3.313	4.577	1.135	1.679	0.744	0	0	0
8th	9.348	13.691	**41.887**	6.536	3.479	2.107	4.590	1.824	1.397	0.095	0
9th	13.182	13.363	**37.452**	9.109	4.743	0.588	4.123	0.492	0.098	0.844	0.244
10th	9.018	10.026	**38.872**	8.132	9.226	2.899	5.456	0.781	1.113	0.883	0.814
11th	5.405	12.217	**45.448**	7.631	8.226	4.361	6.096	0.423	1.005	0.073	0.747
12th	4.153	6.083	**43.029**	9.754	8.906	3.873	14.615	2.232	2.046	1.275	1.172
13th	3.182	3.869	**30.024**	8.896	13.970	3.902	16.921	6.294	8.027	1.119	1.301
14th	2.560	2.783	22.227	11.347	7.078	5.729	**25.273**	9.603	3.799	3.068	5.581
15th	1.893	2.500	17.782	11.813	7.072	5.090	**25.400**	7.394	7.873	9.346	2.312
16th	1.246	1.913	12.633	4.452	12.998	5.670	**29.606**	6.199	9.984	7.429	6.764
17th	0	2.690	**25.949**	0.917	2.116	13.149	25.275	6.959	5.756	4.806	11.065
18th	3.880	0	20.513	4.702	1.524	18.222	**31.321**	1.296	7.138	3.644	7.762
19th	0	0	13.561	0	0	1.829	**34.739**	33.051	0	0	16.820
20th	0	0	10.587	1.944	1.624	11.508	14.370	9.050	**30.654**	0	20.263

Highest Grade Completed, Rows are Mothers, Columns are Daughters
Measured in Percentages, with Mode Bolded for Readability

Table XVIII

Grade	Null	0th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Null	0	0	0.316	0	0.473	0.681	0	0.346	1.408	5.023	10.244
0th	0	0	0	0	4.256	3.021	1.169	5.191	0.874	9.231	6.401
1st	0	0	0	0	0	8.404	0	0	0	0	8.295
2nd	0	0	0	0	1.938	0	2.206	3.049	10.590	8.305	8.053
3rd	0	0	0	0.982	0.711	0	3.254	4.092	5.288	7.383	9.556
4th	0	0	0	0	0	0	1.074	2.170	17.816	3.420	11.532
5th	0	0	0	0	0	0	0.967	2.140	1.217	4.251	13.101
6th	0	0	0	0	0.722	0	1.020	0.691	3.628	2.877	9.387
7th	0	0	0	0	0	0	0.206	0.325	7.797	3.986	5.664
8th	0	0	0	0	0	0	0	0.698	2.286	3.313	4.325
9th	0	0	0	0	0	0	0	0.156	0.626	4.026	4.248
10th	0	0	0	0	0	0	0	0	0.535	2.531	3.795
11th	0	0	0	0	0	0	0	0	0.906	1.152	3.318
12th	0	0	0	0	0	0	0	0	0.135	0.697	1.817
13th	0	0	0	0	0	0	0	0	0	0	0.207
14th	0	0	0	0	0	0	0.077	0	0	0.641	0
15th	0	0	0	0	0	0	0	0	0	0	0
16th	0	0	0	0	0	0	0	0	0	0	0.442
17th	0	0	0	0	0	0	0	0	0	0	0
18th	0	0	0	0	0	0	0	0	0	0	0
19th	0	0	0	0	0	0	0	0	0	0	0
20th	0	0	0	0	0	0	0	0	0	0	0

Highest Grade Completed, Rows are Mothers, Columns are Daughters
Measured in Percentages, with Mode Bolded for Readability

Table XIX (cont.)

Grade	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
Null	5.881	8.572	**37.023**	4.939	7.568	3.498	7.532	4.444	0.949	0.158	0.945
0th	8.377	5.759	**22.773**	8.848	12.774	4.593	4.612	0.782	1.339	0	0
1st	23.113	7.372	**38.565**	0	11.051	3.200	0	0	0	0	0
2nd	9.896	4.039	**33.192**	7.181	8.234	0	0	1.681	1.636	0	0
3rd	6.855	5.434	**27.800**	8.044	6.505	1.625	10.835	1.635	0	0	0
4th	12.861	6.713	**32.783**	4.492	1.832	2.267	2.342	0.699	0	0	0
5th	9.182	14.771	**33.203**	5.101	7.266	2.572	6.228	0	0	0	0
6th	7.561	10.466	**35.554**	10.379	6.520	2.888	3.661	2.699	1.043	0	0.905
7th	4.244	3.190	**50.609**	8.287	8.592	3.882	2.895	0	0.325	0	0
8th	8.063	9.492	**47.590**	7.487	4.467	2.254	7.455	1.282	0.411	0.277	0.600
9th	12.113	8.561	**45.156**	9.128	6.343	5.107	2.789	0.137	0.514	0	1.096
10th	11.018	5.943	**50.207**	8.046	7.606	3.743	5.303	0.254	0.475	0.379	0.167
11th	6.613	9.813	**52.249**	8.352	5.890	2.120	8.093	0.775	0.591	0	0.127
12th	2.405	4.620	**40.832**	10.912	10.105	5.367	14.301	3.931	3.138	0.689	1.050
13th	3.197	2.553	**18.451**	17.971	15.958	12.152	18.286	6.166	4.163	0.793	0.104
14th	2.408	2.274	16.668	9.063	16.120	8.900	**26.006**	7.291	4.809	2.539	3.205
15th	3.334	0	20.515	1.457	15.143	8.458	**36.176**	1.733	10.825	0.614	1.743
16th	0.963	0.350	8.971	8.299	11.279	7.325	**35.466**	9.884	7.207	6.744	3.069
17th	0.369	0	4.443	3.138	11.077	14.774	**32.390**	16.311	8.351	3.444	5.703
18th	0	0	7.348	3.848	12.065	2.870	**37.608**	12.613	11.315	1.589	10.745
19th	0	0	3.484	0	0	0	**69.262**	0	27.254	0	0
20th	0	0	0	47.742	0.480	0	**49.038**	2.739	0	0	0