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ABSTRACT
                This study was conducted to establish the existence,
direction, and size of sibling comparison effects on the occupational
aspirations of youth. Data were drawn from the youth cohort subsample
of the National Longitudinal Surveys of Labor Market Experience,
sampling those with expressed occupational aspirations who come from
homes with four or fewer children, over the four-year period, 1979 to
1982. The principal finding of the study was that brothers, and
brothers only, reinforce one another's occupational aspirations
during the critical years of occupational identity formation when
youth are beginning to make the transition to full-time employment.
The apparent absence of a similar socialization mechanism between
sisters may be one further hidden barrier to the career development
of females. The social comparison process that is hypothesized to
underlie this tendency for brothers to use one another's aspirations
in forming their own is facilitated in families where a degree of
male sibling rivalry and competition is permitted and encouraged.
Similar rivalry and competition between sisters is likely to be
discouraged, especially to the extent that parents consider such
behavior inappropriate to the traditional feminine role. The study
concluded that to the extent that the various assumptions built into
the research design prove correct, the finding of a sex difference in
sibling influence suggests that one traditional socialization
difference was still strong in 1982. The report contains numerous
tables showing the effects of family constellation (particularly
number of siblings and birth order), race, and socioeconomic
influence on the occupational aspirations of young people. An 18-item
reference list and an appendix describing the method used in
recovering the relationships among the respondents are included.
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SIBLING INFLUENCES ON THE CAREER PLANS
OF MALE AND FEMALE YOUTH

by

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I. INTRODUCTION

So frequently are young people in our society asked the question, "what do you want to be when you grow up?" that their response, however well- or poorly-anchored in reality, becomes a central component in their emerging occupational identity. From the perspective of socialization theory such emergent identities are hypothesized to independently guide and direct the initial labor market decisions of youth in a manner at least equally as important as the role economic theory gives to reservation wages. The willingness of a young person to accept or pursue an occupational position depends on whether the position is reasonably consistent with one's early occupational identity. For example, a youth who aspires to be a doctor will probably be more inclined to accept a para-professional position in the health field than a possibly better-paying job in the disparate field of auto mechanics.

More generally, adolescent occupational socialization is a process whereby individual youth develop skills and attitudes which qualify them to compete for a particular level or cluster of positions in the occupational structure. Whether or not a youth will be successful in gaining one of those positions depends of course on a number of additional factors external to the socialization experience. When youth state the occupations they aspire to hold as adults, they are providing their summary perception of what type of position they are being socialized into and how likely it is they will attain a particular level of position given personal and environmental constraints. In addition, such occupational aspiration estimates contain a substantial

element of upward bias borne both from normal adolescent fantasy and from the desire to pursue occupations which others in society value highly.

Socialization theory further hypothesizes that such emergent identities are likely to be heavily socially determined. As an adolescent you aspire to be what you perceive others who are important to you want you to become. "My son, the doctor" is often cited as an example of a Jewish family ethos. Generally, an important normative element obtains in all family occupational socialization and these norms tend to be transmitted primarily by the parents. There is also, however, an important comparative element (Kemper, 1968) to family occupational socialization. Young persons variously seek to emulate, surpass, or avoid the careers or career goals of others who are in important ways comparable to themselves. In American nuclear families siblings serve as important comparison others. Despite an abundance of folk theory about the importance of sibling rivalry and sibling support, there has been almost no systematic research of this question of sibling influence. Olneck (1977) has demonstrated, but not explained, that a similarity appears in the earnings of adult brothers which exceeds what can be attributed to common socioeconomic and intellectual endowments. Unfortunately his data contained no information on sisters. In the present research Olneck's finding is accepted as the empirical starting point for the initial inquiry, and the socialization theory briefly outlined above provides the overall frame of reference.

Our specific problem is to establish the existence, direction, and size of sibling comparison effects on the occupational aspirations of youth. Although other forms of sibling influence on occupational aspirations may exist, and other forms of family influence (most notably, parental normative influence) certainly do exist, these alternative forms will not be studied

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here. Instead the important assumption will be made that parents tend to be egalitarian in allocating socialization resources to their children. Therefore whatever family-linked differences in socialization outcomes appear between siblings can be attributed to sibling effects rather than to differential parental socialization. Preliminary theoretical and empirical work by Behrman, Pollak, and Taubman (1982) supports this initial assumption of parental egalitarianism. Still it is a rather bold assumption, and however important it is for simplifying the initial theoretical and operational design of the present research, it will need to be relaxed at a later stage of inquiry.

This research will further focus on the prestige dimension of occupational aspirations, as measured by the Duncan socioeconomic index. Although prestige is not by any means the only or even the most important aspect of occupational aspirations, here we assume it to be the aspect most susceptible to change as a result of the sibling comparison process under investigation. We recognize that this second assumption may also be overly restrictive; although it too can be modified by estimating possible sibling effects on alternative dimensions of occupational aspirations, that modification is beyond the scope of this study.

In these analyses male and female youth are examined separately. Similarity in the pattern of findings would be evidence that the same socialization processes operate for both sexes. Discrepant patterns could imply gender differences in socialization, but also possibly that the two underlying assumptions do not hold equally for both sexes. Thus conclusions about any discrepant patterns for males and females must be tentative until our two initial assumptions can be tested directly.

The organization of the rest of the report is as follows. The second section describes the sibling data and the procedures used in its construction from the NLS youth tapes. The third section presents analyses based on procedures drawn from the largely atheoretical research on family constellation effects (reviewed in Olneck and Bills, 1979; Steelman and Mercy, 1980). These analyses, besides permitting comparisons with results from that extensive research tradition, permit an assessment of the overall form and amount of _variation_ across siblings in occupational aspirations. The fourth section presents analyses of two models of sibling influence developed to explain _covariation_ between siblings in occupational aspirations. The theoretical specification of these models is drawn from the extensive literature on the social psychology of status attainment (Sewell and Hauser, 1976). A fifth section reports the overall conclusions.

II. THE SIBLING SAMPLE COMPOSITION AND REPRESENTATIVENESS

The sampling plan for the civilian segment of the NLS youth cohort called for interviews of all members in the sampled households who were ages 14-21 on January 1, 1979. Using relationship codes collected in the initial household screener interview, it was possible to link each respondent's data file with that of each other sibling in the household who was interviewed. Noninterviewed siblings were those out of the age range or those among the approximately 10 percent of eligible respondents whose initial 1979 interviews were not completed. Further details of the sibling matching procedures are provided in the technical appendix. Table 1 displays the results of this matching process.

Of the initial 10,527 civilian respondents, 5,863 had one or more siblings who were also respondents. Among these, the range was 3,786

Table 1 Distribution of NLS Respondents and Respondent Families by Sibship Size

Sibship Size	Units of Analysis	
	Respondents	Families
One	4,664	4,664
Two	3,386	1,693
Three	1,725	575
Four	604	151
Five	130	26
Six	18	3
Total	10,527[a]	7,112

[a]Excluded from the respondent total but in the full cohort sample of 12,686 are 1280 military respondents having no sibling relationship code data and 879 respondents having only nonsibling respondents (e.g., step-sibs, spouses) in their household.

respondents with one other sibling (sibship size two) to 18 respondents with five sibs (sibship size six). Table 1 also indicates that the 3,386 respondents having sibship size two by definition come from 1,693 family units, while the 18 respondents of sibship size six come from only three family units. Initial analyses here will employ the respondent-level units of analysis; our later analyses take the family as the unit of analysis. Because of their small numbers and extreme family unit clustering, the 148 respondents having sibship size five and six were deleted from the sibling sample, reducing the number of sibling respondents available for analysis to 5,715 and the maximum number of family units to 2,419.

Table 2 presents the distribution of this reduced sibling sample according to three key family constellation characteristics--sibship size (equivalent to total siblings), number of older siblings (equivalent to birth order), and number of older brothers. An important property of these characteristics, one which allows us to avoid linear dependencies in our analyses, is that they are nested, so that sibship size delimits the maximum number of older siblings, and number of older siblings delimits the maximum number of older brothers. Conversely, the linear dependency is such that the number of older siblings minus the number of older brothers represents the number of older sisters. Similarly, number of older siblings subtracted from sibship size equals the number of younger siblings. It is important to keep this structure of the data in mind. Also of interest in Table 2 are the unequal cell sizes: in the extreme upper left cell there are 889 male respondents having sibship size two, no older sibs and thus no older brothers, and in the upper right cell are 16 male respondents having sibship size four, three older sibs, and no older brothers (hence three older sisters). Cell means for variables (see Tables 5-7) will be considerably more stable (smaller

Table 2 Distribution of Sibling Sample by Sibship Size, Number of Older Sibs and Number of Older Brothers, for Male and Female Youth (n = 5715)[a]

Sibship Size		2		3			4			
Older Sibs[b]		0	1	0	1	2	0	1	2	3
Males										
Older Brothers	0	889	397	300	123	71	77	26	23	16
	1		474		187	132		40	30	34
	2					99			21	31
	3									15
Subtotal		889	871	300	310	302	77	66	74	96
Females										
Older Brothers	0	782	409	264	142	80	71	48	23	8
	1		435		115	117		37	32	25
	2					95			17	19
	3									11
Subtotal		782	844	264	257	292	71	85	72	63
Respondent total		1,671	1,715	564	567	594	148	151	146	159
(Family unit total)		(1,693)		(575)			(151)			

[a]Excluded from all analyses in this report are, the 148 respondents from 29 family units having sibship size of five or six and the 4,664 respondents from families with no sibs.

[b]Any equal-age sibs of respondents are categorized as older than the respondent for this report. Thus, number of older sibs more precisely stated is "number of nonyounger sibs." A total of 136 respondents have equal-age (twin) sibs in the sample.

Table 3 Comparison of NLS Sibling Sample and Full Sample on Weighted Means,
Standard Deviations, and Metric OLS Coefficients for Variables in
Causal Model of Occupational Aspirations, for Males and Females

Variable	A. Males					
	Means		Standard Deviations		OLS coefficients	
	Sib	Full	Sib	Full	Sib	Full
Occ. Asp., 82	50.39	50.68	24.53	24.30	--	--
Ed. Exp.	14.04	14.05	2.42	2.40	2.62*	2.94*
Ed. Attain.	10.30	10.54	1.97	2.02	-.79*	-.89*
AFQT	69.28	71.31	22.21	21.57	.27*	.28*
H.S. Curr. (Gen.)						
Coll. Prep.	.31	.32	.46	.47	5.76*	4.64*
Voc., Comm.	.14	.15	.35	.35	-.12	-.35
Unclass.	.08	.07	.27	.26	.64	-.33
Enrolled	.73	.66	.44	.47	-1.89*	-.25
Employed	.31	.32	.46	.47	-1.87*	-1.16
Fa. Educ. (0-6)						
7-11	.21	.22	.41	.42	-3.04	-3.33*
12	.32	.33	.47	.47	-1.40	-1.49
13-15	.11	.11	.31	.31	-1.44	-2.29
16	.11	.11	.32	.31	6.02*	3.20
17-20	.08	.08	.28	.27	4.63	1.19
NA	.09	.09	.29	.29	-3.31	-1.04
Mo. Educ. (0-6)						
7-11	.23	.23	.42	.42	-.35	.81
12	.45	.46	.50	.50	-.65	-.19
13-15	.12	.11	.32	.32	-.60	1.12
16	.08	.08	.28	.27	3.87	4.11*
17-20	.03	.03	.16	.16	2.83	4.25
NA	.05	.05	.22	.22	-2.24	.55
Fa. Occ. (No emp.)						
BC Occ.	.46	.46	.50	.50	.36	-.25
WC Occ.	.33	.32	.47	.47	.59	.15
Mo. Occ (No emp.)						
BC Occ.	.24	.22	.43	.42	-.80	-.96
WC Occ.	.25	.27	.43	.44	1.99*	1.70*
Ethnicity (White)						
Black	.14	.13	.35	.34	9.43*	8.30*
Hispanic	.06	.05	.23	.22	5.08*	4.92*
Constant					-3.27	1.52
n					2,463	5,020
R^2					.302	.300

Table 3 (cont.)

Variable	Means Sib	Full	Standard Deviations Sib	Full	OLS coefficients Sib	Full
			B. Females			
Occ. Asp. 82	52.29	51.99	20.37	20.46	--	--
Ed. Exp.	14.16	14.00	2.15	2.23	1.81*	2.07*
Ed. Attain.	10.50	10.67	1.91	1.97	-.53	-.49*
AFQT	71.67	71.57	19.69	19.52	.27*	.24*
H.S. Curr. (Gen.)						
Coll. Prep.	.32	.31	.47	.46	1.46	.89
Voc., Comm.	.14	.16	.35	.36	1.04	2.37*
Unclass.	.06	.06	.23	.24	1.23	.14
Enrolled	.76	.64	.43	.48	1.53	2.61*
Employed	.26	.28	.44	.45	.20	.44
Fa. Educ. (0-6)						
7-11	.24	.24	.43	.43	-.68	1.62
12	.32	.34	.47	.47	-2.20	1.51
13-15	.10	.10	.30	.30	-2.21	1.28
16	.12	.10	.32	.30	-2.47	.07
17-20	.08	.07	.27	.25	-4.55	1.66
NA	.07	.09	.27	.29	-3.04	-.29
Mo. Educ. (0-6)						
7-11	.26	.27	.44	.44	-1.95	-1.74
12	.44	.44	.50	.50	-.73	-1.81
13-15	.11	.11	.31	.31	-2.17	-2.06
16	.08	.07	.28	.26	1.82	.55
17-20	.03	.03	.16	.16	-2.45	-2.66
NA	.04	.04	.20	.20	-3.10	-1.78
Fa. Occ. (No Emp.)						
BC Occ.	.44	.45	.50	.50	-2.52*	-.92
WC Occ.	.33	.30	.47	.46	-.57	.40
Mo. Occ. (No Emp.)						
BC Occ.	.24	.24	.43	.43	-1.14	-.04
WC Occ.	.25	.27	.44	.44	.79	.93
Ethnicity (White)						
Black	.15	.14	.36	.35	7.25*	6.01*
Hispanic	.05	.05	.21	.23	5.77*	6.34*
Constant					14.03	7.80
n					2,344	5,124
R^2					.147	.165

*$p < .05$

standard errors) for those cells with relatively large n's located in the left columns of the table.

A comparison of this subsample with the full sample on tne weighted means, standard deviations, and metric regression coefficients of selected variables indicates that the sibling data are representative of the full youth cohort. The variables selected were five family background (father's and mother's education and occupation, and ethnicity) and six education variables (enrollment and employment status, high school curriculum track, current educational attainment, AFQT score, and expected final educational attainment) used to estimate the Duncan score of each youth's occupational aspirations. With the exception that slightly higher enrollment levels appear in the sibling sample, the mean values across the two samples are nearly identical. The means on occupational aspirations, for example, differ by only .3 points even though they have standard deviations of over 24 points. The enrollment level discrepancy reflects the fact that the full sample includes the supplemental military sample youth who are unlikely to be enrolled, whereas the sibling subsample draws from only the civilian respondents.   The regression coefficients (Table 3) show some differences, but nearly all are within the limits of sampling error. Again the only major exception is the enrollment status variable, reflecting the inclusion of the military youth in the full sample. Finally, the procedure of deleting any sample cases with missing data (primarily on the dependent variable, occupational aspirations) resulted in similar case losses of 16 percent (sib sample) and 20 percent (full sample), respectively. While this level of loss may seem unacceptably high, it reflects the real tendency for many youth to lack sufficiently well-defined occupational aspirations to be able to verbalize them to an interviewer. Consequently these youth are excluded from the analysis. We

thus conclude that the weighted sibling sample is representative of the full youth cohort. Accordingly, the 1982 sampling weight is applied in all remaining analyses. One qualification remains, however: the results of the occupational aspirations analyses to be reported next will be generalizable only to the approximately 80 percent segment of the youth population who do in fact have self-defined occupational aspirations.

III. FAMILY CONSTELLATION EFFECTS

The single consistent finding in previous family constellation research has been the negative effect of sibship size on various measures of intellectual performance and achievement. A similar negative birth order effect tends to appear only when researchers do not properly control for sibship size (Olneck and Bills, 1979; Steelman and Mercy, 1980; Sewell and Hauser, 1983). This more recent understanding has tended to cast doubt on the validity of Zajonc's (1976) confluence theory, which takes the joint negative effects of the two constellation variables as its primary evidence. That theory states that children's intellectual performance (and by extension, subsequent achievement) is directly related to the opportunity for adult-level family interaction. This opportunity is postulated to diminish as both sibship size and birth order increase. The alternative explanation more consistent with the single negative effect of sibship size is the notion of reduced economic resources in large families. From this second perspective sibship size thus becomes more simply an indication of between-family socioeconomic differences rather than one of within-family variation in parental socialization practices. Any finding that suggests the absence of parental variation within families supports the assumption of parental egalitarianism.

The third major family constellation variable, sibling sex composition, has to date received less systematic examination. Paulhus and Shaffer (1981) and Mott and Haurin (1982) have found an interaction effect between sex and number of _younger_ sibs, on measures of academic aptitude, educational attainment, and career orientation. They observed that older sisters, but not older brothers, seem to perform skill-developing tutoring and caretaker responsibilities with their younger sibs. Whether the sex of those younger siblings makes a difference has not been determined. Insofar as the confluence effect (differential parental attention) is really only a tutoring effect, however, these findings lend further credence to the assumption of parental egalitarianism.

In beginning the analysis of the NLS youth sibling data, the first priority was simply to determine how much of the total variation in male and female youths' occupational aspirations, educational expectations, and AFQT scores could be explained by the three sibling constellation variables--each youth's total sibs (sibship size), number of older sibs (birth order), and number of older brothers. Irrespective of their theoretical interpretations, if these variables are in fact important for understanding variations in youth achievement, then they should be able to explain a reasonable amount of that variation. Subsequent analyses using a more careful theoretical specification could then estimate how their effects actually operate.

Accordingly, using these three variables and one other, a covariate control for age, two analyses were carried out. In the first, all of the variation on the dependent variable was analyzed with respect to the covariate, age, and a single large nested factor--levels of older brothers within levels of older sibs within levels of total sibs, separately for male

and female youth. This analysis distributed the sibling sample into the 38 cells shown in Tables 5-7. This partitioning of the total sums of squares (i.e., variance on the dependent variables) is actually equivalent to a one-way analysis of variance, determining how much of the total variation occurs between the 38 cells of the design, relative to how much unexplained variation remains within the cells. Stated differently, the absence of between-cell variation would imply that the cell means were all equal, within the limits of sampling error. The value of this partition is in setting an upper bound on how much of the total variation can be explained by the variables as a set. Introduction of the one covariate control, age, eliminates the possible confounding of family constellation effects with individual maturational effects. Between-family socioeconomic differences remain uncontrolled in this analysis, but should be picked up to some extent by the sibship size variable.

The results in Table 4 show that this overall family constellation factor explains a significant amount of variation on each of the dependent variables. In other words, for each achievement variable the 38 age-adjusted cell means arranged in Tables 5-7 are significantly different from one another. This constellation effect was strongest for AFQT scores ($p < .01$) and weakest for occupational aspirations ($p < .10$). But in terms of absolute size the overall effect was very small on all three achievement outcomes, accounting for at most three percent of the total variation (see the sums of squares explained by the factor relative to the total sums of squares).

The second analysis of variance sought to determine what was the pattern underlying this small but significant between-cell variation. This time the total variation was partitioned using the age covariate and three separate constellation factors--sex (1 df), total sibs (2 df), and older sibs nested within total sibs (6 df). The latter variable incorporates but averages over

Table 4 Analysis of Variance of AFQT Scores, 1979 Educational Expectations, and 1982 Occupational Aspirations of NLS Youth, Nested Effects Models

Sources of Variation	df	AFQT SS	AFQT F	ED. EXP. SS	ED. EXP. F	OCC. ASP. SS	OCC. ASP. F
Partition 1							
Nested Constel- lation Factor	37	80,438	4.38***	376	1.65***	31,111	1.40*
Age	1	46,021	92.78***	198	32.20***	1,436	2.39
Error	4,721	2,341,701		29,073		2,839,503	
Total	4,759	2,468,160		29,647		2,872,051	
Partition 2							
Sex	1	7,529	15.11***	21	3.42*	5,246	8.73***
Total Sibs	2	10,723	10.76***	30	2.41*	4,241	3.53***
Older Sibs (Total Sibs)	6	36,081	12.07***	55	1.48	6,976	1.93*
Age	1	46,943	94.19***	195	31.51***	1,461	2.43
Error	4,749	2,366,884		29,347		2,854,126	
Total	4,759	2,468,160		29,647		2,872,051	

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

Table 5 Mean Age-Standardized AFQT Scores of Sibling Sample Youth Within Levels of Sibship Size, Older Sibs, and Older Brothers, for Males and Females

Sibship Size		2		3			4			
Older Sibs		0	1	0	1	2	0	1	2	3
Males										
Older Brothers	0	68.9	72.6	69.1	70.4	70.2	61.6	67.7	59.3	67.4
	1		69.4		71.4	66.6		50.3	70.7	62.2
	2					71.5			50.0	60.3
	3									63.7
Male, total		67.1								
Females										
Older Brothers	0	72.3	72.0	71.4	72.3	78.4	69.7	69.2	74.3	73.3
	1		72.4		70.3	69.6		67.6	69.8	64.8
	2					69.7			48.3	70.0
	3									47.5
Female, total		69.7								
Sibship size		71.0		70.7			65.4			
Older Sibs		70.5	71.5	70.3	71.2	70.7	65.6	65.2	66.1	64.7

Table 6 Mean Age-Standardized Educational Aspirations of Sibling Sample Youth within Levels of Sibship Size, Older Sibs, and Older Brothers, for Males and Females

Sibship Size		2		3			4			
Older Sibs		0	1	0	1	2	0	1	2	3
Males										
Older Brothers	0	13.8	14.5	14.0	13.8	14.2	13.0	14.4	13.0	13.4
	1		14.1		14.4	14.2		13.4	14.1	14.0
	2					14.4			13.0	13.8
	3									14.7
Male, total		13.9								
Females										
Older Brothers	0	14.2	14.4	14.0	14.2	14.1	13.7	14.0	14.4	14.9
	1		14.0		14.2	13.9		14.0	14.4	13.6
	2					14.2			13.0	16.0
	3									13.1
Female, total			14.1							
Sibship size		14.1			14.1			13.8		
Older sibs		14.0	14.2	14.0	14.2	14.2	13.4	14.0	13.9	14.0

Table 7 Mean Age-Standardized Occupational Aspirations of Sibling Sample Youth
Within Levels by Sibship Size, Older Sibs, and Older Brothers, for Males
and Females

Sibship Size		2		3			4			
Older Sibs		0	1	0	1	2	0	1	2	3
Males										
Older Brothers	0	49.5	53.5	48.6	48.6	52.8	45.2	48.8	53.6	43.2
	1		51.1		51.4	48.6		49.0	53.4	51.7
	2					53.5			41.6	44.0
	3									48.7
Male, total		49.3								
Females										
Older Brothers	0	51.9	53.2	49.3	51.9	55.2	53.0	51.2	42.5	50.6
	1		54.6		54.6	51.9		56.5	51.7	39.5
	2					52.7			_35.4	41.1
	3									50.8
Female, total			51.1							
Sibship size		51.9		51.0			48.8			
Older sibs		50.7	53.2	49.0	51.7	52.1	49.0	51.8	48.6	45.8

the additional nested factor, older brothers. The age-adjusted means for the levels of each of these three factors are presented in the bottom rows of the panels of Tables 5-7.

The sex and total sibs factors were significant at $p < .01$ for AFQT and for occupational aspirations and at $p < .10$ for educational expectations. The older sibs factor was significant at $p < .01$ only for AFQT, while significant at $p < .10$ for occupational aspirations, and nonsignificant for educational expectations. A more informative comparison comes from adding up the sums of squares explained by these three factors and evaluating this sum in relation to the sums of squares explained by the nested factor (the total between-cell variation) in the first partition. These three factors explain 67.6 percent (54,333/80,438) of the total between-cell variation in AFQT scores, 28.2 percent of the between-cell variation in educational expectations, and 52.9 percent of the between-cell variaton in occupational aspirations. Two competing inferences are possible from this result. On the one hand, since these three factors use only 10 degrees of freedom compared with the 37 degrees used by the single nested factor, they do in themselves provide a reasonably efficient accounting of the total between-cell family constellation variation. On the other hand, a substantial amount of this within-family variation remains unexplained, particularly for the two attitudinal variables. And in particular, the relatively small amount of the between-cell variation accounted for by the older sibs variable (44.8 percent of the between-cell AFQT variation, but only 14.6 percent of the educational expectations variation and 22.4 percent of the occupational aspirations variation) tends to cast doubt on the importance of those family constellation explanations which take the existence of a birth order effect as primary empirical evidence. These findings suggest that at best such theories should

be restricted to explaining intellectual performance, and are less relevant to the attitudinal outcomes of educational and occupational aspirations.
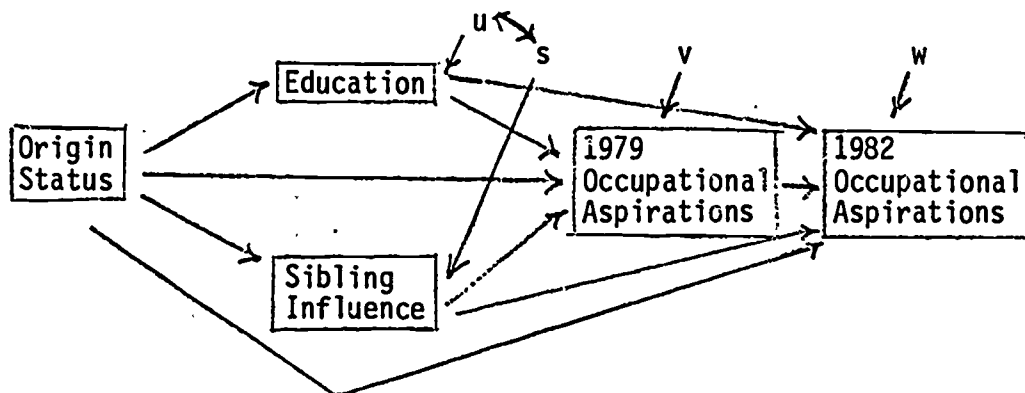
IV. STATUS ATTAINMENT MODELS OF SIBLING INFLUENCE

A. Recursive, Respondent-Level Model

The next step in the analysis was to develop a model of sibling influence that could be incorporated into the basic social psychological model of status attainment (Sewell, Haller, and Ohlendorf, 1970). The socioeconomic careers of individuals are depicted as a transition from the origin status (family background) of childhood to the destination status of adulthood (Blau and Duncan, 1967). The key transition mechanisms which mediate the impact of origin status on destination status are one's education and influence from significant others. These mechanisms together with origin status generate educational and occupational aspirations, which in turn shape educational and occupational attainments. Sewell and Hauser (1975) provide estimates of the separate effects of parents, peers, and teachers as the primary significant others. Possible effects due to siblings have not yet been included in the model.

First we estimate the effects of the sibling constellation variables examined in the last section using this status attainment framework. A fully recursive causal model of occupational aspirations (Figure 1, Part A) is estimated in reduced form using a linear, additive ordinary least squares regression equation. The four sibling variables entered into the equation are total sibs, number of older sibs, number of male sibs, and number of sibs with high 1979 occupational aspirations (Duncan SEI of 60 or above). Their means, standard deviations, and intercorrelations are reported in Table 8, separately for males and females. These possible effects are estimated net of a vector

A. Recursive, Respondent-Level Model
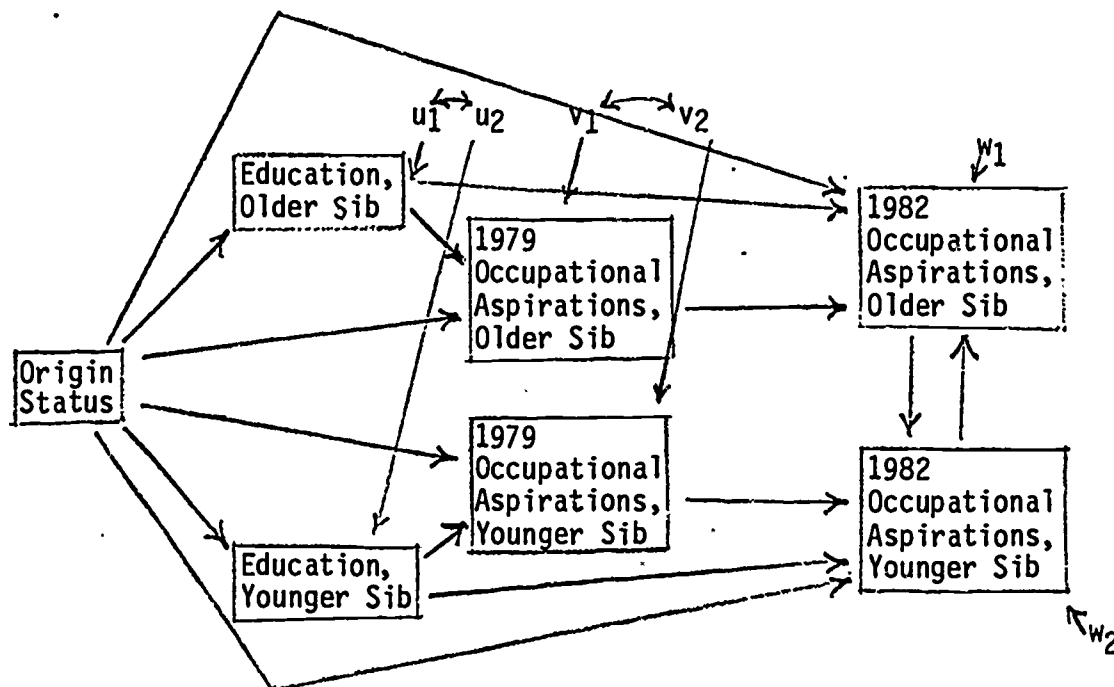

B. Reciprocal, Family-Level Model

Figure 1 Causal Models of Sibling Influence on Occupational Plan Development

of five origin status variables and six education variables. The origin status variables consist of a series of dummy variables for mother's and father's highest year of education, mother's and father's occupational status (blue or white collar vs. not employed as the referent), and ethnicity (black or Hispanic vs. white as the referent). The education variables are 1979 educational expectations (highest year expected), 1979 educational attainment (years completed), score on the 1980 AFQT achievement test, high school curriculum (college preparatory, vocational-commercial, or unclassified vs. general as the referent), enrolled or not in 1979, and employed (40 weeks or more) or not in 1979.

This equation is estimated in two forms, and separately for male and female youth. In the first form the dependent variable is 1982 occupational aspirations (Table 9), and in the second it is 1982 aspirations net of 1979 aspirations (Table 10). The first shows whether or not these sibling characteristics influence variation in the level of aspirations over the youth cohort, and the second whether or not they affect the size and direction of change in these aspirations over a four year period.[1]

Consistent with the analysis of variance results, total number of sibs decreased aspiration levels, for both males and females. In addition, having more sibs tended to cause a reduction in aspirations over time, although this effect reached significance only for females. The estimated effects of the other three sibling variables showed little consistency across sex and in some cases appeared to contradict earlier findings. Number of older sibs was

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[1]The estimated effects of the explanatory variables on 1982 aspirations can be decomposed into their separate effects on initial 1979 aspiration level and on change in aspiration level between 1979 and 1982. A separate equation was estimated for 1979 aspirations. Nonsignificant effects of all four sibling constellation variables in this equation indicate that the sibling effects primarily operated on the 1979-1982 change component of aspirations.

Table 8 Zero-Order Correlation Coefficients, Means, and Standard Deviations
for Sibling Variables in Recursive Model of Sibling Influence, for
Males (below diagonal) and Females (above diagonal)

	Sib Total	Older Sibs	Male Sibs	High Occ. Asp. Sibs	Females (n=2,152) Mean	S.D.
Sib Total	--	.436	.474	.433	1.529	.741
Older Sibs	.456	--	.207	.154	.768	.773
Male Sibs	.528	.242	--	.144	.744	.730
High Occ. Asp. Sibs	.452	.233	.220	--	.711	.710
Males (n=2,231) Mean	1.517	.732	.806	.708		
S.D.	.737	.810	.729	.726		

Table 9 OLS Metric Coefficients for Recursive Model of Sibling Influence on Youths' Occupational Aspirations in 1982, for Males and Females

Variable	Males		Females	
	b	t	b	t
Sib Total	-1.75*	-1.98	-1.80*	-2.24
Older Sibs	1.32	1.70	.01	0.00
Male Sibs	.92	1.30	1.60*	2.49
High Occ. Asp. Sibs	.83	1.16	-.39	-.58
EDUCATION:				
Ed. Exp.	2.43*	9.11	1.88*	7.08
Ed. Attain.	-.42	-1.26	-.56	-1.69
AFQT	.27*	8.79	.24*	7.80
H.S. Curr. (Gen.)				
Coll prep.	6.34*	5.47	1.40	1.33
Voc., Comm.	-.28	-.21	1.74	1.39
Unclass.	.44	.25	.21	.11
Enrolled	-2.19	-1.76	1.50	1.24
Employed	-1.83	-1.71	.17	.16
FAMILY BACKGROUND:				
Fa. Educ. (0-6)				
7-11	-3.15	-1.50	-.32	-.16
12	-1.68	-.79	-2.05	-.98
13-15	-1.02	-.41	-2.79	-1.17
16	6.43*	2.48	-2.19	-.87
17-20	4.92	1.72	-3.54	-1.28
NA	-2.35	-.98	-3.27	-1.37
Mo. Educ. (0-6)				
7-11	.34	.13	-2.81	-1.08
12	-.07	-.03	-1.09	-.40
13-15	.17	.06	-3.01	-1.02
16	3.93	1.29	.74	.23
17-20	3.31	.86	-1.06	-.28
NA	-3.68	-1.20	-4.68	-1.43
Fa. Occ. (No Emp.)				
BC Occ.	.93	.75	-1.98	-1.80
WC Occ.	.58	.40	.13	-.10
Mo. Occ. (No Emp.)				
BC Occ.	-.17	-.15	-.92	-.89
WC Occ.	2.46*	4.80	1.26	1.21
Ethnicity (White)				
Black	9.38*	6.18	7.22*	5.17
Hispanic	5.25*	2.43	5.66*	2.55
Constant	-.23		16.93	
n	2,231		2,152	
R^2	.303		.140	

*$p < .05$

Table 10   OLS Metric Coefficients for Recursive Model of Sibling Influences on Change in Youths' Occupational Aspirations from 1979 to 1982, for Males and Females

Variable	Males		Females	
	b	t	b	t
Sib Total	-1.57	-1.83	-1.71*	-2.16
Older Sibs	1.55*	2.06	.03	.04
Male Sibs	.60	.88	4.53*	2.42
High Occ. Asp. Sibs	.76	1.10	-.32	-.49
EDUCATION:				
Ed. Exp.	1.17*	4.25	1.23*	4.54
Ed. Attain.	-.19	-.58	-.38	-1.18
AFQT	.19*	6.27	.21*	6.66
H.S. Curr. (Gen.)				
Coll Prep.	5.65*	5.04	1.17	1.13
Voc., Comm.	.15	.12	1.27	1.03
Unclass.	.32	.18	.47	.25
Enrolled	-2.65*	-2.20	1.16	.98
Employed	-1.78	-1.73	.10	.10
FAMILY BACKGROUND:				
Fa. Educ. (0-6)				
7-11	-4.00*	-1.98	-.46	-.23
12	-2.36	-1.14	-2.11	-1.02
13-15	-1.54	-.65	-2.70	-1.15
16	4.97*	1.98	-2.71	-1.09
17-20	3.04	1.10	-3.96	-1.45
NA	-3.34	-1.44	-3.66	-1.56
Mo. Educ. (0-6)				
7-11	1.95	.82	-2.07	-.80
12	1.85	.75	-.22	-.08
13-15	2.34	.85	-2.13	-.73
16	5.92*	2.01	1.48	.47
17-20	5.44	1.46	.17	.04
NA	-1.47	-.49	-3.98	-1.23
Fa. Occ. (No Emp.)				
BC Occ.	1.21	1.02	-1.50	-1.39
WC Occ.	.25	.18	.05	.04
Mo. Occ. (No Emp.)				
BC Occ.	-.49	-.46	-1.40	-1.37
WC Occ.	2.30*	2.12	.93	.91
Ethnicity (White)				
Black	7.20*	4.86	6.54*	4.76
Hispanic	4.24*	2.02	5.22*	2.40
Occ. Asp., 1979	.27*	12.58	.19*	8.87
Constant	.02		15.80	
n	2,231		2,152	
R^2	.350		.171	

*$p < .05$

unrelated to variation in levels of aspirations. For males it showed a small but significant positive relation to increased aspirations over time. The sex composition of the siblings did not influence the aspirations of males, but for females having more brothers (or fewer sisters) was positively related to both overall level of aspirations and the amount of increase since 1979. Finally, the number of siblings with high aspiration a youth had was unrelated to either level or change in aspirations.

In assessing these findings, we find evidence of some of the inadequacies of the family constellation approach already noted. Because the constellation variables represent static measures of structure, they do not clearly imply the dynamic processes that may underlie the pattern of their coefficients. The resource scarcity interpretation of the total sibs variable remains a plausible account of that effect; the small but significant older sibs effect for males and the sex composition effect for females permit a variety of interpretations and must await still more definitive research models.

B. Nonrecursive, Family-Level Model

Part B of Figure 1 diagrams the reciprocal model of sibling influence. The occupational aspirations of one sib are hypothesized to simultaneously influence and be influenced by the concurrent occupational aspirations of the other sib. In the process of comparative socialization, one sib provides a point of comparison for the other on key attitudinal outcomes such as aspiration levels. This comparison process requires that sibs be able to periodically monitor one another's goals and changes in goals. This monitoring can occur through routine daily interaction when siblings are still living in the same household. But even as siblings begin to live apart, most have frequent and regular monitoring opportunities during holiday visits and the other common family ceremonies of American society.

This reciprocal influence model is an extension of the recursive status attainment model shown in Part A, with several key differences. The underlying difference is that instead of individual respondents the unit of analysis consists of one pair of siblings from each family in the sibling sample. For families of sibship size three or four, the two youngest sibs constitute the pair. Instead of estimating the effect of the number of sibs with high aspiration net of total sibs, this second model estimates the reciprocal direct effects of each sib's aspiration level. Similar differences occur for the other three sibling variables. Instead of total sibs, a measure of spacing, age difference (in months, converted to decimal values) of the sib pair is used. Instead of number of older sibs, the model is constructed to permit estimation of separate effects for the older sib and younger sib of each pair. And finally, instead of number of brothers, the effects of varying sex compositions are examined by estimating the model separately on the four possible age and sex combinations--same-sex brother-brother and sister-sister pairs, and cross-sex brother (younger) -sister and sister-brother (older) pairs.

The diagram in Figure 1 displays the remaining model differences. Each sib's aspirations are jointly determined by a common vector of family background variables and by separate vectors of education variables. As in the previous model, our primary interest is the extent to which siblings contribute to changes in one another's occupational aspirations over their critical maturation years. Thus the two sibs' 1982 aspirations are estimated net of their respective 1979 aspirations. The equations necessary to estimate 1979 aspirations levels are not presented here, but the hypothesized structure of their determination is presented in Figure 1.

Tables 11 and 12 report the means and standard deviations for each
sibling in the four same-sex and cross-sex pairs. Family background variables
are presented for only the younger sibling in each pair, because of course the
values are identical for the older sibling. Tables 13 and 14 report the
estimated metric coefficients. The equation was estimated using two-stage
least squares instead of ordinary least squares, because the latter generates
biased and inconsistent estimates in nonrecursive models such as this
(Goldberger, 1973).[2] Finally, all the results for this final model were
estimated first over the total sample of family units, then separately for
black and white family units.[3] Although there was no expectation of racial
differences in the sibling comparison process, previous theorizing about the
unique features of the black family (Moynihan, 1965; Staples, 1971) made it
desirable to check for possible variation.

For all sibling pairs aspiration levels declined over the four-year
period, at an average rate of one point on the Duncan SEI for brothers and
three points for sisters (Tables 11 and 12, Panel A). Relative to the
standard deviation of from 20 to 26 points in initial aspiration levels,
however, this average change is very slight and is in fact more indicative of
a condition of aggregate equilibrium, where almost as many youth increased as

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[2]We followed procedures developed by Erlanger and Winsborough (1976) and Hout
(1977) for adjusting the standard errors and t-ratios of metric coefficients
when two-stage least squares is performed using an OLS program. The
correction applied only to the endogenous coefficient for sib's aspiration
level. The adjusted values differed in only the third decimal place from
those given in the standard printed output of the second-stage regressions. A
similar problem occurs for the value of R^2 in two-stage least squares. These
values have not been corrected in this draft. Based on corrections made for
unreported preliminary equations, these values are estimated to be high by
approximately ten percent.

[3]There were two few Hispanic family units available in the sibling sample for
a separate analysis.

Table 11 Means (and Standard Deviations) of Variables in the Model of Reciprocal Sibling Influence, for Same-Sex, Birth Ordered Sibling Pairs for the Total, White, and Black NLS Youth Family Unit Sample

Variable	Brother-Brother Pairs Younger	Older	Sister-Sister Pairs Younger	Older
		A. Total Youth		
Occ. Asp., 82	51.01 (24.42)	50.39 (25.48)	52.64 (20.78)	51.29 (21.27)
Occ. Asp. 79	51.61 (25.90)	52.79 (26.14)	56.15 (19.56)	55.51 (21.28)
EDUCATION:				
Ed. Exp.	14.07 (2.23)	14.08 (2.46)	14.23 (2.05)	14.15 (2.10)
Ed. Attain.	8.95 (1.47)	10.82 (1.81)	9.02 (1.38)	10.91 (1.44)
AFQT	66.75 (20.67)	70.52 (21.93)	70.00 (18.80)	72.61 (20.03)
H.S. Curr. (Gen.)				
Coll. Prep.	.30 (.46)	.32 (.47)	.28 (.45)	.34 (.47)
Voc., Comm.	.10 (.30)	.17 (.38)	.09 (.29)	.17 (.38)
Unclass.	.16 (.37)	.06 (.24)	.09 (.29)	.01 (.11)
Enrolled	.94 (.23)	.70 (.46)	.95 (.22)	.73 (.44)
Employed	.10 (.30)	.42 (.49)	.11 (.31)	.31 (.47)
FAMILY BACKGROUND:				
Sib. Age Diff.	2.28 (1.21)		2.21 (1.16)	
Fa. Educ. (0-6)				
7-11	.20 (.40)		.27 (.45)	
12	.31 (.46)		.33 (.47)	
13-15	.13 (.34)		.10 (.30)	
16	.12 (.33)		.10 (.30)	
17-20	.08 (.27)		.09 (.29)	
NA	.09 (.29)		.06 (.23)	
Mo. Educ. (0-6)				
7-11	.22 (.41)		.29 (.46)	
12	.47 (.50)		.44 (.50)	
13-15	.10 (.30)		.09 (.28)	
16	.08 (.28)		.07 (.25)	
17-20	.04 (.18)		.04 (.21)	
NA	.05 (.22)		.04 (.19)	
Fa. Occ. (No Emp.)				
BC Occ.	.42 (.49)		.43 (.50)	
WC Occ.	.35 (.48)		.31 (.46)	
Mo. Occ. (No Emp.)				
BC Occ.	.25 (.43)		.28 (.45)	
WC Occ.	.27 (.44)		.27 (.44)	
Ethnicity (White)				
Black	.14 (.34)		.14 (.35)	
Hispanic	.06 (.24)		.04 (.20)	
n	368		358	

Table 11 (cont.)

Variable	Brother-Brother Pairs Younger	Older	Sister-Sister Pairs Younger	Older
B. White				
Occ. Asp., 82	51.52 (24.71)	49.80 (26.19)	52.07 (20.69)	51.55 (27.40)
Occ. Asp., 79	51.78 (25.95)	52.58 (26.69)	56.16 (19.31)	55.75 (21.26)
EDUCATION:				
Ed. Exp.	14.14 (2.21)	14.12 (2.46)	14.25 (2.06)	14.18 (2.09)
Ed. Attain.	8.99 (1.44)	10.94 (1.79)	9.01 (1.33)	10.95 (1.36)
AFQT	71.04 (18.73)	75.11 (19.72)	74.13 (17.10)	76.98 (17.77)
H.S. Curr. (Gen)				
Coll. Prep.	.33 (.47)	.33 (.47)	.27 (.45)	.35 (.48)
Voc., Comm.	.10 (.30)	.18 (.38)	.08 (.28)	.17 (.38)
Unclass.	.13 (.33)	.06 (.24)	.07 (.26)	.01 (.11)
Enrolled	.95 (.23)	.69 (.46)	.95 (.21)	.74 (.44)
Employed	.10 (.30)	.48 (.50)	.13 (.34)	.35 (.48)
FAMILY BACKGROUND:				
Sib. Age Diff.	2.32 (1.20)		2.23 (1.14)	
Fa. Educ. (0-6)				
7-11	.09 (.29)		.26 (.44)	
12	.15 (.35)		.36 (.48)	
13-15	.15 (.36)		.11 (.32)	
16	.32 (.47)		.11 (.32)	
17-20	.19 (.39)		.10 (.30)	
NA	.06 (.24)		.03 (.17)	
Mo. Educ. (0-6)				
7-11	.19 (.40)		.25 (.44)	
12	.50 (.50)		.48 (.50)	
13-15	.11 (.32)		.09 (.29)	
16	.09 (.28)		.08 (.27)	
17-20	.04 (.20)		.05 (.22)	
NA	.04 (.20)		.03 (.18)	
Fa. Occ. (No Emp.)				
BC Occ.	.41 (.49)		.43 (.50)	
WC Occ.	.41 (.49)		.36 (.48)	
Mo. Occ. (No Emp.)				
BC Occ.	.22 (.42)		.28 (.45)	
WC Occ.	.31 (.46)		.29 (.46)	
n	225		219	

Table 11 (cont.)

Variable	Brother-Brother Pairs		Sister-Sister Pairs	
	Younger	Older	Younger	Older
C. Blacks				
Occ. Asp., 82	51.02 (21.46)	55.35 (21.12)	55.03 (21.03)	50.39 (21.51)
Occ. Asp., 79	51.10 (25.00)	54.79 (24.13)	56.93 (20.13)	55.03 (21.47)
EDUCATION:				
Ed. Exp.	13.92 (2.27)	14.07 (2.20)	14.26 (2.02)	14.25 (2.08)
Ed. Attain.	8.66 (1.55)	10.29 (1.68)	9.18 (1.65)	10.91 (1.73)
AFQT	45.96 (17.71)	49.13 (19.02)	50.49 (14.32)	51.86 (18.04)
H.S. Curr. (Gen.)				
Coll. Prep.	.19 (.39)	.23 (.43)	.30 (.46)	.28 (.45)
Voc., Comm.	.11 (.31)	.17 (.38)	.16 (.37)	.19 (.40)
Unclass.	.27 (.44)	.05 (.21)	.14 (.35)	.02 (.14)
Enrolled	.93 (.26)	.71 (.45)	.92 (.27)	.65 (.48)
Employed	.06 (.25)	.20 (.40)	.04 (.20)	.14 (.35)
FAMILY BACKGROUND:				
Sib. Age Diff.	2.14 (1.26)		2.22 (1.30)	
Fa. Educ. (0-6)				
7-11	.29 (.45)		.31 (.46)	
12	.34 (.48)		.25 (.44)	
13-15	.05 (.22)		.05 (.22)	
16	.02 (.15)		.04 (.19)	
17-20	.00 (.00)		.03 (.18)	
NA	.21 (.41)		.20 (.40)	
Mo. Educ. (0-6)				
7-11	.40 (.49)		.47 (.50)	
12	.34 (.48)		.30 (.46)	
13-15	.06 (.24)		.07 (.26)	
16	.05 (.22)		.04 (.20)	
17-20	.02 (.15)		.01 (.12)	
NA	.09 (.29)		.05 (.22)	
Fa. Occ. (No-Emp.)				
BC Occ.	.44 (.50)		.36 (.48)	
WC Occ.	.03 (.16)		.16 (.30)	
Mo. Occ. (No. Emp.)				
BC Occ.	.34 (.48)		.34 (.48)	
WC Occ.	.17 (.38)		.14 (.35)	
n	94		96	

Table 12 Means (and Standard Deviations) of Variables in the Model of
Reciprocal Sibling Influence, for Cross-Sex, Birth-Ordered Sibling
Pairs from the Total, White and Black NLS Youth Family Unit Sample

Variable	Brother-Sister Pairs Younger	Older	Sister-Brother Pairs Younger	Older
	A. Total Youth			
Occ. Asp., 82	52.38 (25.43)	52.22 (19.23)	54.19 (19.37)	49.40 (24.02)
Occ. Asp., 79	52.82 (26.75)	55.70 (20.58)	55.79 (21.24)	49.91 (24.85)
EDUCATION:				
Ed. Exp.	14.30 (2.18)	14.36 (2.18)	13.95 (2.07)	13.97 (2.44)
Ed. Attain.	9.07 (1.55)	11.29 (1.62)	9.32 (1.57)	11.03 (1.82)
AFQT	68.49 (21.52)	74.44 (19.34)	69.21 (17.85)	70.79 (22.04)
H.S. Curr. (Gen.)				
Coll. Prep.	.31 (.46)	.36 (.48)	.29 (.45)	.31 (.47)
Voc., Comm.	.12 (.32)	.17 (.37)	.12 (.33)	.19 (.39)
Unclass.	.11 (.32)	.04 (.20)	.08 (.27)	.03 (.17)
Enrolled	.95 (.22)	.69 (.46)	.90 (.30)	.68 (.47)
Employed	.16 (.36)	.35 (.48)	.11 (.31)	.36 (.48)
FAMILY BACKGROUND:				
Sib Age Diff.	2.38 (1.27)		2.32 (1.28)	
Fa. Educ. (0-6)				
7-11	.24 (.43)		.22 (.42)	
12	.32 (.47)		.32 (.47)	
13-15	.09 (.29)		.12 (.33)	
16	.16 (.37)		.11 (.32)	
17-20	.06 (.24)		.07 (.25)	
NA	.08 (.27)		.08 (.27)	
Mo. Educ. (0-6)				
7-11	.20 (.40)		.27 (.45)	
12	.47 (.50)		.41 (.49)	
13-15	.12 (.33)		.13 (.33)	
16	.12 (.32)		.08 (.27)	
17-20	.01 (.10)		.02 (.13)	
NA	.06 (.23)		.05 (.21)	
Fa. Occ. (No Emp.)				
BC Occ.	.46 (.50)		.45 (.50)	
WC Occ.	.34 (.48)		.30 (.46)	
Mo. Occ. (No Emp.)				
BC Occ.	26 (.44)		.24 (.43)	
WC Occ.	27 (.44)		.30 (.46)	
Ethnicity (White)				
Black	.15 (.36)		.15 (.36)	
Hispanic	.05 (.23)		.05 (.22)	
n	331		345	

Table 12 (cont.)

Variable	Brother-Sister Pairs Younger		Older		Sister-Brother Pairs Younger		Older	
			B.	Whites				
Occ. Asp., 82	52.41	(25.22)	51.67	(18.81)	54.31	(19.29)	49.77	(24.19)
Occ. Asp., 79	53.24	(26.75)	55.25	(20.65)	56.24	(20.98)	50.30	(24.97)
EDUCATION:								
Ed. Exp.	14.40	(2.19)	14.38	(2.18)	13.98	(2.04)	14.00	(2.47)
Ed Attain.	9.15	(1.58)	11.50	(1.52)	9.40	(1.57)	11.20	(1.80)
AFQT	73.48	(19.11)	79.63	(15.92)	73.75	(15.31)	75.54	(19.57)
H.S. Curr. (Gen.)								
Coll. Prep.	.33	(.47)	.37	(.48)	.30	(.46)	.33	(.47)
Voc., Comm.	.12	(.32)	.16	(.37)	.13	(.33)	.20	(.40)
Unclass.	.10	(.30)	.03	(.16)	.06	(.23)	.02	(.15)
Enrolled	.96	(.20)	.68	(.47)	.90	(.31)	.68	(.47)
Employed	.18	(.39)	.39	(.49)	.12	(.33)	.38	(.49)
FAMILY BACKGROUND:								
Sib. Age Diff.	2.49	(1.29)			2.40	(1.30)		
Fa. Educ. (0-6)								
7-11	.25	(.43)			.22	(.42)		
12	.32	(.47)			.35	(.48)		
13-15	.10	(.30)			.14	(.34)		
16	.19	(.39)			.13	(.34)		
17-20	.07	(.26)			.08	(.27)		
NA	.06	(.24)			.04	(.20)		
Mo. Educ. (0-6)								
7-11	.16	(.36)			.24	(.43)		
12	.51	(.50)			.46	(.50)		
13-15	.14	(.34)			.14	(.35)		
16	.13	(.34)			.09	(.29)		
17-20	.01	(.08)			.02	(.14)		
NA	.05	(.21)			.03	(.18)		
Fa. Occ. (No Emp.)								
BC Occ.	.46	(.50)			.45	(.50)		
WC Occ.	.39	(.49)			.35	(.48)		
Mo. Occ. (No Emp.)								
BC Occ.	.21	(.41)			.19	(.40)		
WC Occ.	.28	(.45)			.32	(.47)		
n	191				196			

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Table 12 (cont.)

Variable	Brother-Sister Pairs		Sister-Brother Pairs	
	Younger	Older	Younger	Older
C. Blacks				
Occ. Asp., 82	50.83 (25.21)	53.63 (20.49)	53.44 (20.29)	47.73 (24.33)
Occ. Asp., 79	48.42 (25.77)	56.84 (20.37)	53.33 (23.59)	48.76 (25.41)
EDUCATION:				
Ed. Exp.	13.70 (2.02)	14.28 (2.13)	14.00 (2.25)	13.90 (2.37)
Ed Attain.	8.94 (1.38)	10.70 (1.76)	8.99 (1.44)	10.21 (1.68)
AFQT	46.08 (18.26)	52.05 (17.16)	50.20 (15.78)	48.75 (20.56)
H.S. Curr. (Gen.)				
Coll. Prep.	.31 (.47)	.36 (.48)	.27 (.45)	.27 (.44)
Voc., Comm.	.12 (.33)	.22 (.42)	.12 (.33)	.16 (.37)
Unclass.	.12 (.32)	.08 (.27)	.13 (.34)	.05 (.21)
Enrolled	.90 (.30)	.70 (.46)	.91 (.28)	.69 (.46)
Employed	.05 (.22)	.19 (.39)	.04 (.20)	.26 (.44)
FAMILY BACKGROUND:				
Sib. Age Diff.	2.05 (1.11)		1.87 (1.09)	
Fa. Educ. (0-6)				
7-11	.24 (.43)		.23 (.42)	
12	.34 (.48)		.21 (.41)	
13-15	.05 (.23)		.07 (.26)	
16	.07 (.26)		.02 (.15)	
17-20	.01 (.12)		.03 (.16)	
NA	.18 (.39)		.27 (.45)	
Mo. Educ. (0-6)				
7-11	.40 (.49)		.46 (.50)	
12	.32 (.47)		.23 (.42)	
13-15	.06 (.24)		.09 (.29)	
16	.04 (.20)		.04 (.19)	
17-20	.03 (.18)		.01 (.12)	
NA	.11 (.32)		.13 (.34)	
Fa. Occ. (No Emp.)				
BC Occ.	.41 (.50)		.42 (.50)	
WC Occ.	.10 (.30)		.10 (.29)	
Mo. Occ. (No Emp.)				
BC Occ.	.44 (.50)		.41 (.49)	
WC Occ.	.19 (.39)		.23 (.42)	
n	96		102	

Table 13   2SLS Metric Coefficients (and t-ratios) of Variables in the Model of Reciprocal Sibling Influence on Change in Occupational Aspirations, for Same-Sex, Birth-Ordered Sibling Pairs from the Total, White, and Black NLS Youth Family Unit Sample

Explanatory Variables	Brother-Brother Pairs		Sister-Sister Pairs	
	Younger	Older	Younger	Older
	A. Total Youth			
Sib Occ. Asp. 82	0.32 (3.13)*	0.36 (2.94)*	-0.28(-2.06)*	-0.17 (-1.13)
Own Occ. Asp. 79	0.18 (3.33)*	0.26 (4.34)*	0.17 (2.83)*	0.12 (2.29)*
EDUCATION:				
Ed. Exp.	0.73 (1.01)	1.48 (1.91)	2.59 (3.64)*	2.31 (3.04)*
Ed. Attain.	-1.00 (-0.92)	-0.07 (-0.08)	-0.08 (-0.08)	0.34 (0.33)
AFQT	0.16 (1.94)	0.15 (2.00)*	0.12 (1.55)	0.16 (2.10)*
H.S. Curr. (Gen.)				
Coll. Prep	3.57 (1.23)	4.49 (1.56)	0.55 (0.18)	2.10 (0.80)
Voc., Comm.	0.76 (0.19)	-0.91 (-0.31)	0.84 (0.21)	1.07 (0.36)
Unclass.	-4.09 (-1.10)	4.02 (0.81)	1.33 (0.31)	-3.24 (-0.41)
Enrolled	-4.22 (-0.79)	-10.17(-3.70)*	-0.83 (-0.16)	-2.38 (-0.82)
Employed	-2.94 (-0.73)	1.51 (0.66)	1.51 (0.39)	6.15 (2.50)*
FAMILY BACKGROUND:				
Sib Age Diff.	-1.05 (-1.13)	-1.15 (-1.18)	0.69 (0.73)	-1.02 (-1.00)
Fa. Educ. (0-6)				
7-11	-0.34 (-0.06)	-2.58 (-0.50)	9.51 (1.43)	2.79 (0.41)
12	-3.66 (-0.67)	-1.98 (-0.38)	2.73 (0.41)	-1.16 (-0.17)
13-15	-6.93 (-1.12)	6.77 (1.16)	5.22 (0.73)	-0.69 (-0.10)
16	3.02 (0.44)	4.42 (0.68)	-4.77 (-0.62)	7.58 (1.00)
17-20	6.29 (0.85)	1.64 (0.23)	-2.26 (-0.28)	3.61 (0.46)
NA	-5.20 (-0.86)	0.67 (0.11)	2.31 (0.31)	5.40 (0.73)
Mo. Educ. (0-6)				
7-11	4.47 (0.71)	1.14 (0.18)	-15.08 (-1.97)	-8.03 (-1.01)
12	2.86 (0.45)	-0.53 (-0.08)	-14.18 (-1.84)	-7.28 (-0.92)
13-15	8.93 (1.21)	-13.55 (-1.89)	-8.29 (-0.98)	-1.39 (-0.16)
16	9.02 (1.19)	-6.97 (-0.94)	-13.30 (-1.48)	-0.44 (-0.05)
17-20	3.59 (0.38)	4.93 (0.55)	-8.31 (-0.85)	-12.26 (-1.28)
NA	2.46 (0.33)	-0.70 (-0.10)	-15.69 (-1.66)	-14.42 (-1.47)
Fa. Occ. (No Emp.)				
BC Occ.	5.40 (1.79)	-3.88 (-1.34)	0.95 (0.35)	-3.73 (-1.37)
WC Occ.	-1.10 (-0.31)	0.29 (0.08)	6.23 (2.04)*	-2.69 (-0.84)
Mo. Occ. (No Emp.)				
BC Occ.	-3.01 (-1.05)	1.76 (0.64)	-1.98 (-0.77)	2.32 (0.92)
WC Occ.	4.31 (1.51)	0.08 (0.03)	4.08 (1.46)	4.15 (1.47)
Ethnicity (White)				
Black	4.46 (1.13)	9.49 (2.50)*	7.19 (1.89)	3.92 (0.98)
Hispanic	1.29 (0.24)	2.47 (0.46)	5.14 (0.93)	3.40 (0.60)
Constant	14.43	-4.00	17.11	11.49
R^2	0.37	0.46	0.21	0.26
n	368	368	358	358

*$p < .05$

Table 13 (cont.)

Explanatory Variables	Brother-Brother Pairs		Sister-Sister Pairs	
	Younger	Older	Younger	Older
		B. Whites		
Sib Occ. Asp. 82	0.37 (2.84)*	0.31 (1.90)	-0.33(-1.96)*	-0.25 (-1.43)
Own Occ. Asp. 79 .	0.17 (2.30)*	0 30 (3.61)*	0.17 (2.10)*	0.13 (1.80)
EDUCATION:				
Ed. Exp.	0.20 (0.18)	1.47 (1.36)	2.63 (2.80)*	2.75 (2.74)*
Ed. Attain.	-1.63 (-1.10)	-0.22 (-0.19)	0.03 (0.03)	0.57 (0.41)
AFQT	0.13 (1.23)	0.13 (1.29)	0.12 (1.16)	0.14 (1.33)
H.S. Curr. (Gen.)				
Coll. Prep.	5.94 (1.57)	5.52 (1.42)	0.12 (0.03)	1.93 (0.56)
Voc., Comm.	1.39 (0.26)	-0.86 (-0.22)	-2.03 (-0.38)	1.81 (0.47)
Unclass.	-6.41 (-1.20)	6.14 (0.92)	1.27 (0.21)	-0.25 (-0.03)
Enrolled	-6.92 (-0.95)	-12.32(-3.46)*	3.10 (0.42)	-4.19 (-1.05)
Employed	-2.51 (-0.49)	1.84 (0.64)	2.23 (0.46)	5.07 (1.62)
FAMILY BACKGROUND:				
Sib. Age Diff.	-1.33 (-1.06)	-0.40 (-0.31)	0.74 (0.58)	-1.80 (-1.30)
Fa. Educ. (0-6)				
7-11	-1.81 (-0.21)	-6.84 (-0.81)	6.81 (0.37)	8.29 (0.46)
12	-7.18 (-0.84)	-4.36 (-0.51)	-1.01 (-0.06)	3.03 (0.17)
13-15	-11.26 (-1.21)	6.15 (0.66)	3.57 (0.19)	3.68 (0.20)
16	-0.52 (-0.06)	2.11 (0.22)	-7.63 (-0.40)	10.36 (0.55)
17-20	3.49 (0.34)	-1.56 (-0.16)	-5.27 (-0.27)	9.22 (0.49)
NA	-9.41 (-0.95)	-1.98 (-0.20)	6.00 (0.30)	11.52 (0.59)
Mo. Educ. (0-6)				
7-11	7.09 (0.69)	11.74 (1.10)	-28.67 (-1.45)	-16.18 (-0.84)
12	5.45 (0.52)	12.02 (1.10)	-27.06 (-1.35)	-14.43 (-0.74)
13-15	14.49 (1.26)	-2.17 (-C.18)	-19.51 (-0.95)	-4.93 (-0.25)
16	12.60 (1.06)	5.68 (0.47)	-25.06 (-1.20)	-7.94 (-0.39)
17-20	8.13 (0.59)	20.14 (1.47)	-22.86 (-1.05)	-20.06 (-0.98)
NA	6.41 (0.54)	10.24 (0.84)	-22.81 (-1.06)	-16.63 (-0.80)
Fa. Occ. (No Emp.)				
BC Occ.	9.24 (2.11)*	-6.03 (-1.44)	0.80 (0.21)	-4.00 (-1.05)
WC Occ.	2.77 (0.59)	-1.93 (-0.43)	5.29 (1.33)	-2.55 (-0.62)
Mo. Occ. (No Emp.)				
BC Occ.	-1.56 (-0.39)	0.23 (0.06)	-4.24 (-1.22)	1.58 (0.46)
WC Occ.	4.23 (1.17)	0.28 (0.08)	4.40 (1.26)	4.50 (1.24)
Constant	26.82	-8.41	30.73	14.58
R^2	0.40	0.51	0.24	0.29
n	225	225	219	219

*p < .05

Table 13 (cont.)

Explanatory Variables	Brother-Brother Pairs		Sister-Sister Pairs	
	Younger	Older	Younger	Older
C. Blacks				
Sib Occ. Asp. 82	0.27 (1.09)	0.26 (1.04)	-0.14 (-0.55)	0.33 (1.32)
Own Occ. Asp. 79	0.14 (1.27)	0.25 (2.20)*	0.30 (2.26)*	-0.01 (-0.11)
EDUCATION:				
Ed. Exp.	0.76 (0.63)	0.27 (0.19)	1.15 (0.83)	1.53 (1.07)
Ed. Attain.	-0.23 (-0.11)	-0.41 (-0.23)	-1.29 (-0.66)	-0.02 (0.00)
AFQT	0.32 (1.70)	0.23 (1.42)	0.11 (0.57)	0.10 (0.72)
H.S. Curr. (Gen.)				
Coll. Prep.	-0.15 (0.00)	-2.32 (-0.34)	5.75 (0.91)	2.94 (0.57)
Voc., Comm.	2.87 (0.30)	8.22 (1.24)	4.86 (0.65)	-4.83 (-0.81)
Unclass.	-3.50 (-0.51)	0.59 (0.06)	0.55 (0.06)	-12.16 (-0.64)
Enrolled	-3.77 (-0.35)	0.83 (0.13)	-7.06 (-0.82)	7.50 (1.45)
Employed	-9.37 (-0.89)	9.24 (1.42)	-17.37 (-1.38)	17.32 (2.64)*
FAMILY BACKGROUND:				
Sib. Age Diff.	-0.75 (-0.34)	-4.31 (-2.01)	-0.93 (-0.50)	-0.50 (-0.25)
Fa. Educ. (0-6)				
7-11	10.42 (1.11)	5.23 (0.54)	10.18 (1.26)	-3.31 (-0.41)
12	15.30 (1.60)	2.60 (0.25)	7.89 (0.91)	-9.78 (-1.28)
13-15	12.42 (0.83)	-4.96 (-0.35)	10.93 (0.84)	-11.24 (-0.85)
16	9.88 (0.39)	56.10 (2.39)*	0.22 (0.00)	-4.28 (-0.30)
17-20	--	--	13.78 (0.68)	-28.69 (-1.74)
NA	12.33 (1.18)	4.83 (0.45)	-0.21 (-0.03)	-4.17 (-0.54)
Mo. Educ. (0-6)				
7-11	-4.09 (-0.30)	-5.57 (-0.41)	-4.16 (-0.37)	-4.25 (-0.36)
12	-2.52 (-0.18)	-16.56 (-1.24)	0.59 (0.06)	-0.21 (0.00)
13-15	-15.32 (-0.92)	-20.51 (-1.26)	-10.69 (-0.67)	-32.46 (-2.29)*
16	7.71 (0.45)	-22.59 (-1.35)	-27.13 (-1.37)	30.36 (1.53)
17-20	2.50 (0.11)	-61.39 (-2.68)*	-1.66 (-0.06)	19.31 (0.70)
NA	-2.57 (-0.16)	-12.58 (-0.78)	-32.32 (-2.16)*	-13.47 (-0.88)
Fa. Occ. (No Emp.)				
BC Occ.	-1.37 (-0.28)	-1.07 (-0.23)	3.04 (0.58)	1.61 (0.34)
WC Occ.	0.07 (0.00)	-22.76 (-1.38)	5.23 (0.56)	-5.35 (-0.62)
Mo. Occ. (No Emp.)				
BC Occ.	-2.96 (-0.46)	7.86 (1.51)	-1.63 (-0.29)	4.12 (0.82)
WC Occ.	1.71 (0.23)	7.77 (1.08)	8.69 (0.99)	-0.28 (-0.03)
Constant	5.14	28.81	39.15	8.32
R^2	0.37	0.43	0.38	0.49
n	93	93	96	96

*p < .05

Table 14 2SLS Metric Coefficients (and t-ratios) of Variables in the Model of
Reciprocal Sibling Influence on Change in Occupational Aspirations for
Cross-Sex, Birth-Ordered Sibling Pairs from the Total, White, and Black
NLS Youth Family Unit Sample

Explanatory Variables	Brother Sister Pairs Younger	Older	Sister-Brother Pairs Younger	Older
	A. Total Youth			
Sib. Occ. Asp. 82	-0.04 (-0.26)	0.07 (0.89)	-0.04 (-0.41)	-0.31(-2.22)*
Own Occ. Asp. 79	0.27 (5.24)*	0.26 (4.60)*	0.25 (4.56)*	0.33 (5.83)*
EDUCATION:				
Ed. Exp.	0.38 (0.48)	0.23 (0.32)	1.11 (1.62)	0.60 (0.87)
Ed. Attain.	-1.03 (-1.04)	1.10 (1.21)	-1.52 (-1.78)	1.24 (1.54)
AFQT	0.30 (3.65)*	0.11 (1.27)	0.27 (3.29)*	0.16 (2.21)*
H.S. Curr. (Gen.)				
Coll. Prep.	9.04 (3.11)*	5.86 (2.23)*	-2.93 (-1.05)	2.30 (0.83)
Voc., Comm.	0.80 (0.21)	4.71 (1.61)	-1.63 (-0.50)	-0.53 (-0.20)
Unclass.	-7.36 (-1.85)	5.85 (1.10)	-3.80 (-0.91)	10.17 (1.61)
Enrolled	7.11 (1.25)	-0.32 (-0.12)	-5.12 (-1.39)	2.88 (1.06)
Employed	-2.22 (-0.61)	-0.62 (-0.26)	-3.52 (-1.01)	-4.69(-2.16)*
FAMILY BACKGROUND:				
Sib. Age Diff.	1.13 (1.19)	-1.76 (-1.78)	0.35 (0.42)	0.94 (1.03)
Fa. Educ. (0-6)				
7-11	0.62 (0.09)	2.65 (0.42)	-1.93 (-0.40)	-7.50 (-1.58)
12	-0.63 (-0.09)	3.04 (0.47)	-2.13 (-0.43)	-6.62 (-1.33)
13-15	3.58 (0.46)	4.73 (0.66)	-0.72 (-0.13)	-4.64 (-0.81)
16	11.41 (1.47)	1.31 (0.18)	-2.23 (-0.36)	6.82 (1.14)
17-20	11.18 (1.27)	3.88 (0.47)	-4.02 (-0.60)	-1.71 (-0.26)
NA	-0.96 (-0.12)	6.13 (0.86)	-3.81 (-0.70)	-4.08 (-0.75)
Mo. Educ. (0-6)				
7-11	4.71 (0.63)	2.49 (0.34)	-7.75 (-1.32)	2.46 (0.41)
12	0.54 (0.07)	3.81 (0.52)	-1.75 (-0.28)	11.33 (1.82)
13-15	3.44 (0.42)	1.32 (0.16)	0.70 (0.10)	17.05 (2.49)*
16	7.84 (0.93)	-2.01 (-0.25)	-0.98 (-0.13)	15.95 (2.14)*
17-20	14.70 (1.02)	27.26 (2.10)*	7.16 (0.70)	15.40 (1.60)
NA	2.03 (0.23)	8.59 (1.01)	-5.98 (-0.79)	-2.14 (0.29)
Fa. Occ. (No Emp.)				
BC Occ.	3.10 (0.96)	1.62 (0.55)	-5.25(-2.03)*	-1.32 (0.49)
WC Occ.	0.86 (0.24)	1.34 (0.41)	-2.52 (-0.76)	-4.73 (-1.48)
Mo. Occ. (No Emp.)				
BC Occ.	-4.27 (-1.53)	0.33 (0.13)	0.76 (0.29)	-5.26 (-1.98)
WC Occ.	-1.32 (-0.46)	-2.30 (-0.91)	1.19 (0.49)	1.35 (0.55)
Ethnicity (White)				
Black	11.85 (3.01)*	3.28 (0.86)	6.78 (1.98)*	6.65 (1.89)
Hispanic	11.41 (2.04)*	6.94 (1.30)	4.97 (0.91)	6.39 (1.18)
Constant	3.98	3.67	33.95	9.55
R²	0.47	0.23	0.24	0.51
n	331	331	345	345

*p < .05

Table 14 (cont.)

Explanatory Variables	Brother-Sister Pairs		Sister-Brother Pairs	
	Younger	Older	Younger	Older
	B. Whites			
Sib. Occ. Asp. 82	-0.06 (-0.28)	0.11 (1.05)	-0.09 (-0.79)	-0.22 (-1.30)
Own Occ. Asp. 79	0.26 (3.73)*	0.23 (2.97)*	0.26 (3.43)*	0.41 (5.44)*
EDUCATION:				
Ed. Exp.	0.98 (0.91)	0.53 (0.51)	2.08 (2.12)*	0.56 (0.60)
Ed. Attain.	-0.53 (-0.39)	2.29 (1.77)	-1.42 (-1.22)	1.06 (0.98)
AFQT	0.23 (2.06)*	0.06 (0.49)	0.20 (1.77)	0.10 (1.05)
H.S. Curr. (Gen.)				
Coll. Prep.	11.95 (3.09)*	3.48 (0.95)	-3.40 (-0.88)	0.47 (0.13)
Voc., Comm.	1.89 (0.38)	4.01 (1.01)	-0.20 (-0.05)	-0.04 (0.00)
Unclass.	-3.55 (-0.64)	16.87 (2.07)	0.12 (0.00)	7.63 (0.81)
Enrolled	10.95 (1.31)	1.42 (0.38)	-6.69 (-1.36)	0.76 (0.22)
Employed	-3.09 (-0.69)	0.38 (0.12)	-4.22 (-0.94)	-3.78 (-1.36)
FAMILY BACKGROUND:				
Sib. Age Diff.	1.87 (1.61)	-2.90 (-2.25)*	0.73 (0.64)	0.63 (0.53)
Fa. Educ. (0-6)				
7-11	-25.04 (-1.88)	-10.22 (-0.85)	0.14 (0.00)	-7.12 (-0.92)
12	-24.86 (-1.87)	-9.14 (-0.76)	0.32 (0.03)	-4.23 (-0.53)
13-15	-22.90 (-1.63)	-6.54 (-0.52)	1.94 (0.21)	0.25 (0.03)
16	-14.52 (-1.04)	-9.62 (-0.77)	-0.15 (0.00)	7.86 (0.88)
17-20	-12.80 (-0.86)	-7.04 (-0.53)	-2.38 (-0.23)	0.34 (0.03)
NA	-28.22 (-1.98)	-0.50 (-0.03)	-0.72 (-0.07)	-3.90 (-0.41)
Mo. Educ. (0-6)				
7-11	0.44 (0.03)	11.98 (0.92)	-12.71 (-1.26)	0.46 (0.05)
12	-4.03 (-0.30)	8.97 (0.70)	-5.06 (-0.49)	8.30 (0.86)
13-15	1.21 (0.09)	4.08 (0.31)	-1.84 (-0.16)	13.65 (1.34)
16	5.07 (0.37)	0.44 (0.03)	-3.87 (-0.33)	13.81 (1.26)
17-20	17.49 (0.69)	47.07 (2.14)*	6.40 (0.44)	14.27 (1.08)
NA	0.08 (0.00)	13.58 (0.95)	-11.45 (-0.92)	-4.68 (-0.42)
Fa. Occ. (No Emp.)				
BC Occ.	3.61 (0.74)	2.52 (0.57)	-6.49 (-1.78)	-0.74 (-0.20)
WC Occ.	-0.37 (-0.07)	4.70 (1.05)	-3.29 (-0.75)	-4.39 (-1.08)
Mo. Occ. (No Emp.)				
BC Occ.	-5.05 (-1.27)	2.55 (0.73)	0.43 (0.11)	-9.64 (-2.54)*
WC Occ.	-3.24 (-0.87)	-2.36 (-0.73)	0.84 (0.27)	1.36 (0.45)
Constant	20.36	-4.02	29.22	10.88
R^2	0.51	0.27	0.27	0.58
n	191	191	196	196

*$p < .05$

Table 14   (cont.)

Explanatory Variables	Brother-Sister Pairs Younger	Older	Sister-Brother Pairs Younger	Older
		C. Blacks		
Sib Occ. Asp. 82	-0.04 (-0.15)	0.21 (1.33)	0.11 (0.69)	-0.45 (-1.64)
Own Occ. Asp. 79	0.26 (1.98)*	0.12 (1.08)	0.12 (1.19)	0.19 (1.22)
EDUCATION:				
Ed. Exp.	-0.76 (-0.50)	0.75 (0.66)	-1.30 (-1.57)	0.30 (0.20)
Ed. Attain.	-1.30 (-0.45)	-4.38(-2.82)*	-4.61(-2.36)*	1.37 (0.69)
AFQT	0.58 (3.14)*	0.17 (1.27)	0.73 (3.88)*	0.32 (1.36)
H.S. Curr. (Gen.)				
Coll. Prep.	9.22 (1.26)	12.16 (2.76)*	3.34 (0.61)	9.40 (1.51)
Voc., Comm.	12.95 (1.63)	3.57 (0.59)	-1.59 (-0.24)	-1.17 (-0.18)
Unclass.	-7.09 (-0.69)	-11.70 (-1.52)	-15.19(-2.07)*	30.33 (2.45)*
Enrolled	-4.77 (0.41)	-5.12 (-1.07)	-8.93 (-1.00)	14.33 (2.20)*
Employed	6.44 (0.53)	8.26 (1.61)	-5.93 (-0.52)	-6.17 (-1.16)
FAMILY BACKGROUND:				
Sib. Age Diff.	-3.02 (-1.29)	5.50 (2.62)*	-0.87 (-0.44)	1.82 (0.78)
Fa. Educ. (0-6)				
7-11	11.07 (1.07)	16.92 (5.03)*	-4.86 (-0.72)	0.72 (0.08)
12	8.98 (0.85)	17.04 (2.17)*	-10.47 (-1.44)	-15.11 (-1.63)
13-15	29.38 (1.82)	12.16 (0.98)	-8.90 (-0.72)	-30.73(-2.13)*
16	23.80 (1.55)	20.80 (1.86)	-5.10 (-0.28)	24.03 (1.47)
17-20	-1.36 (-0.06)	-9.88 (-0.46)	-8.44 (-0.57)	-19.83 (-1.02)
NA	13.12 (1.16)	5.30 (0.60)	-4.69 (-0.70)	-1.44 (-0.18)
Mo. Educ. (0-6)				
7-11	-23.78 (-1.74)	-2.42 (-0.22)	-0.29 (-0.03)	5.83 (0.41)
12	-26.12 (-1.76)	4.31 (0.36)	3.67 (0.28)	19.41 (1.25)
13-15	-38.62 (-1.83)	3.58 (0.24)	-0.64 (-0.05)	34.39 (2.10)
16	-34.00 (-1.71)	15.44 (1.03)	-19.27 (-1.04)	23.14 (1.17)
17-20	-23.12 (-1.05)	4.58 (0.26)	11.48 (0.54)	15.03 (0.61)
NA	-25.22 (-1.62)	0.49 (0.03)	-2.08 (-0.16)	-1.71 (-0.11)
Fa. Occ. (No Emp.)				
BC Occ.	5.18 (0.95)	-0.90 (-0.22)	3.65 (0.76)	-1.65 (-0.28)
WC Occ.	6.97 (0.65)	-14.98(-2.08)*	5.66 (0.54)	-3.70 (-0.29)
Mo. Occ. (No Emp.)				
BC Occ.	2.28 (0.38)	-4.43 (-0.98)	-2.40 (-0.50)	-0.59 (-0.11)
WC Occ.	9.41 (1.16)	-2.45 (-0.42)	0.37 (0.06)	-4.34 (-0.54)
Constant	50.16	39.64	89.31	9.48
R²	0.50	0.54	0.38	0.49
n	96	96	102	102

*p < .05

decreased their aspirations. The coefficient for 1979 aspirations provides an estimate of the actual degree of stability in aspiration levels over the four-year period (Tables 13 and 14, Panel A). Although the effect is significant for youth in all pairs, the actual amount of stability is moderate at best, considering what one often finds in repeated-measurement panel designs (cf. Campbell and Mutran, 1982). Stability is higher for youth in the cross-sex sibling pairs than for those in the same-sex pairs, and within the same-sex pairs, higher for brothers than for sisters.

This instability in aspirations reflects both random disturbance effects (see the low R^2 values) and the directed change caused by sibling influence and the other variables in the model. Of these other variables, however, only achievement score had an effect which holds generally across the sibling pairs. High academic performance, as measured by the AFQT, showed its expected tendency of raising youths' aspirations. Other family background and education variables do operate indirectly on 1982 aspirations through explaining variation in initial 1979 levels (see Figure 1). These indirect effects are transmitted forward via the significant stabilizing influence of 1979 aspirations on 1982 aspirations. We do not estimate these indirect effects here, since the origin-destination status linkage is well known, and our primary focus in the status attainment model is on the mediating role of sibling influence.

Looking first at the sibling influence findings for the same-sex sibling pairs, we see that the coefficients in the first row of Table 13 (Panel A) indicate a pattern of reciprocal reinforcement for brothers and a weaker pattern of asymmetric negative reinforcement for sisters. For brothers, whether the younger or older member of the pair, having a brother with high aspirations produced an increase in aspirations. For sisters, by contrast,

having an older sister with high aspirations tended to decrease the younger sister's aspirations. Aspirations of the younger sister did not affect the older sister's change in aspirations. These results for brothers are consistent with the original hypothesis that sibs use one another as positive points of comparison in setting their own aspiration levels. The results for sisters are disconfirming, suggesting in fact that the older sister may be a negative point of comparison for the younger.

The results for cross-sex sibling pairs are also disconfirming. Changes in the youths' occupational aspirations tended to be unaffected by the aspiration level of a cross-sex sibling. The one exception was a weak negative effect of younger sister's aspirations on older brother. There is no ready interpretation why having a younger sister with high aspirations might dampen the older brother's aspirations. The more germane point is that this case, like the other three cross-sex sibling relations, fails to show any positive sibling influence effect. A positive influence occurred for brother-brother pairs only.

Replicating the analyses on separate subsamples of black and white sibling pairs (Panels B and C of Tables 13 and 14) uncovered no new pattern of effects. In both subsamples the positive comparison effect operated only for brother-brother pairs. Although these effects were slightly smaller for black youth, this difference probably should be attributed to their small sample size rather than to any more substantive cause.

V. DISCUSSION

This report began with Olneck's observation that there is a similarity in the adult earnings of brothers that could not be explained merely on the basis of common origin status. It ends with the principal finding that brothers,

and brothers only, reinforce one another's occupational aspirations during the critical years of occupational identity formation when youth are beginning to make the transition to full-time employment.

The apparent absence of a similar socialization mechanism between sisters may be one further hidden barrier to the career development of females. It is common observation that the socialization practices which occur in the family are slow to adapt to changes in society at large, and in this case, to the trend toward universal full-time female employment. The social comparison process which is hypothesized to underlie this tendency for brothers to use one another's aspirations in forming their own is facilitated in families where a degree of male sibling rivalry and competition is permitted and encouraged. Similar rivalry and competition between sisters is likely to be discouraged, especially to the extent that parents consider such behavior inappropriate to the traditional feminine role. More generally, socialization within families tends to reinforce societal tradition, and tradition operates as a brake on social change. The persistence of tradition is not, however, inevitable. It rests in the strong tendency for American parents to use childhood memories and grandparent advice to provide models for the climate of interaction they seek to foster between their own children.

To the extent that the various assumptions built into our research design prove correct, the finding of a sex difference in sibling influence suggests that one traditional socialization difference is still strong in 1982. The opportunity to participate in sibling rivalry is a mixed blessing. It has been helpful to many American male youth in providing a social anchoring for their emerging occupational identities. Whether or not female siblings become engaged in a similar practice, or perhaps in some newer, more enlightened form of occupational socialization, will likely be critical for the eventual development and stabilization of occupational identities in women.

REFERENCES

Behrman, J.R., R.A. Pollak, and P. Taubman. 1982. "Parental preferences and provision for progeny." Journal of Political Economy 90 (1): 52-73.

Blau, P.M., and O.D. Duncan. 1967. The American Occupational Structure. New York: Wiley.

Campbell, R.T., and E. Mutran. 1982. "Analyzing panel data in studies of aging." Research on Aging 4 (1): 3-41.

Erlanger, H.S., and H.H. Winsborough. 1976. "The subculture of violence thesis." Sociological Methods and Research 5 (2): 231-246.

Goldberger, A.S. 1973. "Structural equation models." Pp. 1-18 in Structural Equation Models in the Social Sciences. New York: Seminar Press.

Hout, M. 1977. "A cautionary note on the use of two-stage least squares." Sociological Methods and Research 5 (3): 335-346.

Kemper, T.D. 1968. "Reference groups, socialization, and achievement." American Sociological Review. 33: 31-45.

Mott, F.L. and R.J. Haurin. 1982. "Being an only child: affects on educational progression and career orientation." Journal of Family Issues 3 (4): 575-593.

Moynihan, D.P. 1965. "Employment, income, and the ordeal of the Negro family." Daedalus (Fall): 745-769.

Olneck, M.R. 1977. "On the use of sibling data to estimate the effects of family background, cognitive skills, and schooling." Pp. 125-162 in P. Taubman (ed.), Kinometrics: Determinants of Socioeconomic Success Within and Between Families. Amsterdam: North Holland Press.

Olneck, M.R. and D.B. Bills. 1979. "Family configuration and achievement: effects of birth order and family size in a sample of brothers." Social Psychology Quarterly 42: 135-148.

Paulhus, D. and D.R. Shaffer. 1981. "Sex differences in the impact of number of older and number of younger siblings on scholastic achievement." Social Psychology Quarterly 44: 363-368.

Sewell, W.H., A.O. Haller, and G.W. Olendorf. 1970. "The educational and early occupational status attainment process: replication and revision." American Sociological Review 35: 1014-1027.

Sewell, W.H., and R.M. Hauser. 1975. Education, Occupation, and Earnings: Achievement in the Early Career. New York: Academic Press.

_____. 1983. "Educational attainment within families." Paper presented at the 78th annual meetings of the American Sociological Association, Detroit.

Staples, R. 1971. "Towards a sociology of the black family: a theoretical and methodological assessment." Journal of Marriage and the Family 33: 119-137.

Steelman, L.C. and J.A. Mercy. 1980. "Unconfounding the confluence model: a test of sibship size and birth-order effects on intelligence." American Sociological Review 45: 571-582.

Zajonc, R.B. 1976. "Family configuration and intelligence." Science 192: 227-236.

Appendix
Method Used in Recovering the Relationships
Among the Respondents of the Youth Tape

Kenneth Chi

For the Youth Tape, according to Attachment 1 of the household record, there are 53 coded relationships that indicate the relationships among respondents who have lived in the same household. A relationship code relates two persons, the youth or respondent, and the match.

In the Youth Tape a number of respondents had missing relationship codes. Based on the information about the relationship of each respondent to the household head for those households that had more than one respondent, we recovered some of these missing relationships. After excluding those in military service during 1979, we were still missing 904 relationships. Forty of them were due to missing screener I.D. numbers. The other 864 relationships involved 698 respondents who lived in households each of which had more than one respondent. In sum, there were 738 respondents with 904 missing relationships. (The total number of respondents in the Youth Tape, excluding those in the military service during 1979, is 11,406.)

We found four reasons for the missing relationships for these 698 respondents.

1. Screener record relative to household head could not be defined on the basis of available relationship category codes.

2. More than one matched relationship was found between two persons.

3. No match was found.

4. Screener record relationships to youth were incorrect.

The solution for reason 1 was to create further translated relationship codes, in addition to the original 53 coded relationships. The further created translation relationship codes are listed below:

Code	Relationship of Match to Youth
54	Parent or Step-Parent
55	Father or Uncle
56	Mother or Aunt
57	Husband or Brother-in-Law
58	Wife or Sister-in-Law
59	Brother-in-Adoption or Step-Brother
60	Sister-in-Adoption or Step-Sister
61	Sibling
62	Brother or Cousin
63	Sister or Cousin
64	Brother or Brother-in-Adoption or Step-Brother
65	Sister or Sister-in-Adoption or Step-Sister
66	Sibling or Sibling-in-Law's Spouse
67	Son or nephew
68	Daughter or neice
69	Foster Sibling
70	Sibling-in-Law
71	Brother or Sibling-in-Law's Brother
72	Great Nephew

To go a step further, the individual data records of the matches and the youths whose translated relationship codes were greater than 53 were further checked to determine their relationships more specifically. For example, for those whose relationship code is 61 (sibling), the sex of their match was checked to determine if the relationship code should be 6 (brother) or 7 (sister). For those whose relationship code is 55 (father or uncle), theirs and their match's ages were checked to determine if the relationship code should be 55 or 12 (uncle). If the age difference between the match and the youth is smaller than 10 then the code 12 was given. Otherwise, the code stays as 55.

Actually all of the 698 respondents who had missing relationship codes and their matches were checked one by one, in order to recover some of the missing codes. For this task, we obtained a variable list from the household record and a variable list from the screener record. Variables from the

household record include screener I.D. number, respondent NORC I.D. number, sex, age, month and year of birth, and relationship to the household head. In the Youth Tape, each respondent can have a maximum of 15 family members (including the respondent). Variables from the screener record include screener I.D. number, NORC I.D. number, sex, age, family unit number, line number, and relationship to the respondent. We not only listed these variables for a specific respondent and his/her matches, but also for all of his (her) family/household members.

People who live in the same household have the same screener I.D. number. Each respondent has his/her unique NORC I.D. number. Each household may have more than one family unit. Unless respondents who live in the same household have the same family unit number, they are unlikely to be related to each other. In the household record, family members of a specific household are listed in a specific order, beginning with the household head as the first member. In a household, when several people have the same family unit number, each person's line number in the screener record indicates his/her specific order (location) in the household record. Based on the information extracted from these variables, decisions have been made in recovering missing relationships of the matches to the respondents.

The typical procedure to make these decisions is first to check the family unit number and the line number in the screener record for a specific respondent of his/her match(es). The family unit number and the line number in the screener record are helpful for locating this person among the family members in the household record. The relationships of each family member to the household head and to the respondent, along with sex and age, lead to a conclusion regarding the relationship of the match to the respondent.

Consistency between and among the variables of the household record and the variables of the screener record is important in making these decisions, with one exception, explained as follows.

Information in the household record falls into three sections. The first section is the information directly obtained from a specific respondent about his/her own sex, birth month, and birth year. The second section contains information about relationships to the household head, sexes, birth months, and birth years of all the family members (up to 15 members) including that of the same respondent. More often than not, the information given in the second section during the interview was obtained from a family member other than this respondent. When the respondent's birth month and birth year in the first section and the same respondent's birth month and birth year in the second section were not obtained from the same family member, a slight difference caused by individual estimation bias between the two sections is quite possible. Therefore, in the decision-making process with regard to the recovery of the missing relationships, one year or less difference between the two sections is considered acceptable, as long as the other variable values obtained from the household record and the screener record for the family members, respondents, and the matches are not contradictory to one another. The third section is the match's sex, birth month and birth year. The relationship between the third section and the second section is similar to that between the first section and the second section. Therefore, the same rule also applies.

Sometimes a slight inconsistency might be caused by key punch errors, and therefore, can be omitted. However, special caution has been taken not to easily judge an inconsistency among the record variables as a key punch error.

This checking process recovered 640 relationship codes for matches to 510 respondents, leaving 228 respondents with 264 undecided relationships. Among the 640 relationship codes, 82 have code values greater than 53. These 82 relationships involve 68 respondents. Among the 228 respondents with missing relationships, 40 are due to the missing screener I.D. numbers. The other 188 of the 228 are not decided for their relationship codes (224 relationships) because of one of the following three reasons:

1. The family unit number and/or other variables of the respondent or the match do not have a match found among the family member records.

2. The information about the relationship to the respondent and/or the relationship to the household head among the family members is missing or not complete enough to make a precise decision.

3. The inconsistency of the birth month or birth year is greater than one year.

The first reason very likely suggests that the respondent and the match(es) are not related. They could be coded as 36 (other non-relatives). That a substantial portion of the 188 respondents is in the first reason category implies that fewer than 188 respondents actually have missing relationships are actually.

The Center has also been active in manpower planning both in the U.S. and in the developing countries. A project for the Ohio Advisory Council for Vocational Education identified the highly fragmented institutions and agencies which supply vocational and technical training in Ohio. Subsequent projects for the Ohio Occupational Information Coordinating Committee have followed graduates of these programs. These data and information on occupational distributions of employers collected for the Occupational Employment Statistics Program are being integrated into a comprehensive planning model which will be accessible to trainees and employers and linked to a national network.

Another focus of the Center's research is industrial relations and collective bargaining. In a project for the U.S. Department of Labor, staff members are working with unions and management in a variety of industries to evaluate several current experiments for expedited grievance procedures. The procedural adequacies, safeguards for due process, and cost and timing of the new procedure are being weighed against traditional arbitration techniques.

Senior staff also serve as consultants to many boards and commissions at the national and state level. Recently the Center's staff have produced papers and prepared testimony for the Department of Labor, the Vice President's Task Force on Youth Unemployment, the Joint Economic Committee of Congress, the National Commission for Employment and Unemployment Statistics, the National Commission for Employment Policy, the White House Conference on the Family, the Ohio Department of Corrections, the Ohio Board of Regents, the Ohio Governor's Task Force on Health, and the Ohio Governor's Task Force on Welfare.

The Center maintains a working library of approximately 10,000 titles, including a wide range of reference works and current periodicals, as well as an extensive microfilm and microfiche collection. Through their facilities linked to the University computer, the Center's data processing staff provide statistical, technical, and programming support both for in-house researchers and the over 250 users of the National Longitudinal Surveys data tapes. They maintain the NLS tapes, data base, documentation, and associated software.

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Center for Human Resource Research

The Center for Human Resource Research is a policy-oriented multidisciplinary research organization affiliated with The Ohio State University. Established in 1965, the Center is concerned with a wide range of contemporary problems related to developing and conserving human resources. Its more than thirty senior staff members come from disciplines including economics, education, English, health sciences, industrial relations, management science, psychology, public administration, social work, and sociology. This multidisciplinary team is supported by approximately 70 graduate research associates, full-time research assistants, computer programmers, and other personnel.

The Center has become preeminent in the fields of labor market research and manpower planning. With continuing support from the United States Department of Labor, the Center has been responsible since 1965 for the National Longitudinal Surveys of Labor Market Experience. Staff have assisted in population and human resource planning throughout the world, having conducted major studies in Bolivia, Ecuador, Kenya, Sierra Leone, Venezuela, and Zaire. At the request of the National Science Foundation, a review of the state of the art in human resource planning was conducted. Other studies have assessed the impact of labor and education policy on labor supply and evaluated employment statistics collection methods. Senior personnel are also engaged in several other areas of research—collective bargaining and labor relations, evaluation and monitoring of the operation of government employment and training programs, and the projection of health education and facility needs.

The Center for Human Resource Research has received over two million dollars annually from government agencies and private foundations to support its research in recent years. Providing support have been the U.S. Departments of Labor, State, Defense, Education, Health and Human Services; Ohio's Health and Education Departments and Bureau of Employment Services; the Ohio cities of Columbus and Springfield; the Ohio AFL-CIO; the George Gund Foundation; the Rockefeller Foundation; and the Ford Foundation. The breadth of the Center's research interests is best illustrated by a brief review of a few of its current projects.

The Center's largest project is the National Longitudinal Surveys of Labor Market Experience. This project has involved repeated interviews over a fifteen-year period with four groups of the United States population: older men, middle-aged women, and young men and women. The data are collected for 20,000 individuals by the U.S. Bureau of the Census, and the center is responsible for data analysis. Since 1979, the NLS has followed an additional cohort of 13,000 young men and women between the ages of 14 and 21. This cohort includes for the first time those serving in the armed forces at the time of the initial interview. In addition to being the definitive U.S. national data set on the labor market activities of young adults, this continuing survey includes unique batteries of questions on such socially important issues as delinquency, alcohol and drug use, fertility, and prenatal care. For this cohort, field work is handled by the National Opinion Research Center. To date the Center's staff have prepared dozens of research monographs, special reports, and books on the NLS, and they also prepare and distribute data tapes for public use.

The Quality of Work Life Project, another ongoing study, began in 1975 as an attempt to improve the productivity and the meaningfulness of work for public employees in the cities of Springfield and Columbus. Center staff also served as third party advisers and researchers exploring new techniques for attainment of management-worker cooperation and worker health in a number of central Ohio private sector industries.