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**ABSTRACT**

The paper served as a report on research in progress that attempted to evaluate the effects of group disparity on the occupational choice of southern high school students. It focused specifically on the aspiration choices of 8,802 tenth grade students in 4 southern states: Alabama, Georgia, Mississippi, and South Carolina. The relative effects of class, race, and residence were investigated. An adaptation of the "backward elimination procedure" was used to select models for analysis. It was found that the proportion of students with high level occupational aspirations in all subclasses was relatively high. Approximately of the students in the more disadvantaged groups had high level aspirations; e.g., of the rural Negro students whose fathers had low level occupations and education, 53% had high level occupational aspirations. There were similar findings for the other disadvantaged groups. It was hypothesized that, as the adolescent begins to consider the means required to obtain his occupational goal, the likelihood of the perception of limiting factors (goal blockage) increased. It was anticipated that students in the lower classes (rural and Negro students) would tend to have lower aspirations. The failure of the Negro students to follow the general pattern of the other disparity groups presented a conceptual problem for the original formulation.

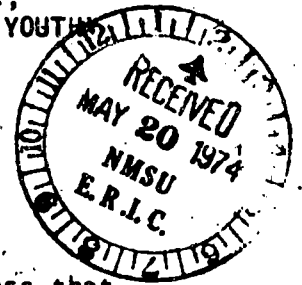
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THE DISADVANTAGED STUDENT, GOAL-BLOCKAGE,  
AND THE OCCUPATIONAL ASPIRATIONS OF SOUTHERN YOUTH

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by

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This paper serves as a report on research in progress that attempts an evaluation of the effects of group disparity on the occupational choice of southern high school students. It focuses specifically on the aspiration choices of 8302 tenth-grade students in four southern states: Alabama, Georgia, Mississippi, and South Carolina. The relative effects of class, race, and residence are investigated. There is a brief discussion of theory, analytical procedures, and initial findings.

Theoretical Orientation

(1) Occupational choice is seen as a process and is treated in a developmental framework. The choice process starts early in a child's life and continues into the adult years. Occupational choice is a product of prior influences as well as current circumstances. (Ginzberg, 1951; Super, 1953; Rogers, 1966)

(2) The importance of differential socialization in forming the occupational role of the individual is also stressed. The manner in which the individual is socialized in the family setting determines, in large part, the individual's concept of acceptable

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occupational roles and goals. Socialization in the school, in peer groups, among family associates, and in work experiences is seen as a contributing factor. (Rogers, 1966)

(3) Stages in the choice process can be distinguished where the quality of the choice varies according to the stage of the development. Ginzberg discusses the fantasy stage (pre-adolescent), the tentative stage (adolescent), and the realistic stage (late adolescent and earlier adulthood). Generally, as the child moves from stage to stage in the choice process, his occupational choices become more focused, and often there is a narrowing of the range of acceptable occupations and his commitment to a particular occupational goal may increase. (Ginzberg, 1951)

(4) At various periods in the choice process, different types of choice can be delineated. Although there is considerable lack of agreement on appropriate terminology and perhaps conceptual differences, at least two dimensions of choice can be distinguished. First, there are occupational aspirations where the individual's choice of a particular occupation is one he wishes or desires to enter as his life's work. Second, there are occupational expectations where the student's choice of a particular occupation is one he expects or anticipates entering as his life's work. (Blau, 1956; Glick, 1962; Kuvlesky and Bealer, 1966)

(5) In the pre-adolescent years, the child selects those occupations that he perceives as being pleasurable. The choices are thought to be generally variable, quite often high in status, and often unrealistic in terms of the actual occupation which

the individual will enter when he becomes an adult. Furthermore, the choices at this period can be characterized as being "goal centered" with little or no concern for the means required to obtain the given occupation. (Ginzberg, 1951)

(6) During the adolescent years, the choices become more tentative. The range and type of desired and expected occupations are greatly narrowed. The individual now becomes concerned with the means required to obtain a particular occupational goal. (Ginzberg, 1951)

(7) As the individual considers the necessary means required to obtain his occupational choices, he may perceive obstacles or blocks which he views as limiting or obstructing his chances to obtain his earlier "goal centered" choices. If the individual believes the blocks to be great, he will tend to lower his occupational choices.

(8) One group of such blocks is referred to here as structural disparity, i.e., membership in any group which has relatively limited access to higher level positions in the occupational structure.

(9) The limited occupational chances of the lower class student, the Negro student, and the rural student are well documented. (Mayer, 1955; Hollingshead, 1953; Kinkel, 1954; Lipset and Bendix, 1959; Rose, 1957; Hill, 1967; Simpson and Yinger, 1965; Harris, 1963; and Lipset, 1955)

(10) Thus, one would expect the levels of choices of these groups to be lower than other more advantaged students.

Key theoretical and empirical questions at this point are (a) At what period in occupational development do disadvantaged students become aware of the occupational disparity, and (b) What is the degree of awareness at a given stage?

(11) This report seeks answers to two sets of questions:

(a) What are the relative effects of various configurations of these disparity variables on the aspiration levels of 10th grade students; and (b) What are the relative effects of each variable when the effects of the others are "partialled out" on the aspirations of these students?

#### The Data

As aforementioned, the data used in this study were obtained from interviews of 8802 tenth-grade students in four southern states. Sampling designs varied from state to state, i.e., a stratified probability sample of high school students was used in South Carolina while the other states used purposive sampling procedures. Although a largely standardized schedule was used in each of the four states, coding and data processing differed considerably. In order to make the original data compatible, one of the initial steps in the analysis was to transform the data to a standardized code. The transformation was necessary before the analysis on a whole sample basis could be carried out.

#### Analytical Procedures

At least three types of questions should be answered in an attempt to explain a given phenomena: (1) What are the most

"relevant variables" that can be used to explain the phenomena;

(2) Of these relevant variables, which is the most useful in explaining the phenomena in a given situation; (3) Which combinations or configurations of these variables can best explain the phenomena in a given situation? The main effort in past occupational youth studies has been with the first type of question with little concern for information of the second and third types.

A category of multi-varied procedures is used in this research which has been designed especially for attribute data that allow one to rank the effects of particular independent variables on a dependent variable, and allow a comparison of the effects of different combinations of the various independent variables. These techniques are in many ways similar to the more common multiple-regression procedures for higher levels of measurement.

The computation of effects is based on formulas provided by James L. Coleman in his text on Mathematical Sociology (Coleman, 1964). These computational procedures for effects are used in conjunction with an adaptation of the "Backward Elimination Procedure," (Draper and Smith, 1966). The Backward Elimination Process was developed in regression analysis to aid the researcher in selecting the "best" regression equation when multiple independent variables are used to estimate a particular dependent variable. It is basically a technique which deletes variables from the model which contribute only slightly to the estimate of the dependent variable.

### Simple Relationships

The first operation is the carrying out of a simple frequency distribution where each of the independent variables is cross-tabulated with level of occupational aspiration. A Chi-square test of statistical significance is applied to see if a statistical difference is observable for the data (Blalock, 1960). Cramer's test of association (V) is also used to measure the strength of the relationship (Blalock, 1960). The V statistic is an index of association for contingency data utilizing Chi-square values.

Table 1. Simple Relationship Between Occupational Aspirations and Residence

	Urban	Town	Rural Nonfarm	Rural	Totals
High Aspirations	.71 (2497)	.59 (703)	.53 (1118)	.55 (941)	.62 (5259)
Medium Aspirations	.24 (865)	.36 (429)	.39 (815)	.39 (667)	.33 (2776)
Low Aspirations	.04 (162)	.05 (64)	.07 (156)	.05 (92)	.05 (474)
Total	3524	1196	2089	1700	8509

$$\chi^2 = 233.7528^{**}$$

$$V = .117$$

TABLE 2. THE RELATIONSHIP BETWEEN ASPIRATIONS AND FATHER'S EDUCATION

	High	Low	Total
High Aspirations	.70 (3225)	.50 (1279)	.63 (4504)
Medium Aspirations	.26 (1193)	.45 (1151)	.33 (2344)
Low Aspirations	.04 (202)	.05 (135)	.05 (337)
Total	4620	2565	7185

$\chi^2 = 290.8977^{***}$        $V = .201$

TABLE 3. THE RELATIONSHIP BETWEEN OCCUPATIONAL ASPIRATIONS AND FATHER'S OCCUPATIONS

	High	Medium	Low	Total
High Aspirations	.74 (1970)	.58 (2205)	.57 (714)	.63 (4889)
Medium Aspirations	.22 (597)	.36 (1375)	.36 (448)	.31 (2420)
Low Aspirations	.04 (108)	.06 (231)	.07 (91)	.06 (430)
Total	2675	3811	1253	7739

$\chi^2 = 195.3059^{***}$        $V = .112$

TABLE 4. THE RELATIONSHIP BETWEEN OCCUPATIONAL ASPIRATIONS AND RACE.

	White	Non-White	Total
High Aspirations	.63 (3935)	.59 (1357)	.62 (5292)
Medium Aspirations	.32 (2032)	.33 (758)	.32 (2770)
Low Aspirations	.05 (289)	.08 (188)	.05 (477)
Total	6256	2303	8559

$\chi^2 = 42.5432^{***}$        $V = .070$



First, the aspiration level of all sub-groups was relatively high. As expected the simple tables indicated that the student whose father had a high level occupation and/or a high level education, the student from an urban area, and the white student tended to have a higher level occupational aspirations. As measured by the V statistic, the relationships in each table were not especially strong. The racial difference was very slight in favor of the white students.

#### Computation of Subclass Proportions

Each of the independent variables is redefined in terms of a high and low state, i.e., each of the variables is measured dichotomously. The determination of whether a given variable is in a high or low state depends on either theory or previous research. In studies of the relationship between residence and aspiration, for example, urban residence has been associated with high occupational aspirations. (Payne, 1956; Burchinal, 1961; Haller and Sewell, 1957; Birdie and Hood, 1963; and Middleton and Grigg, 1959) Therefore, urban is considered to be the high state and rural the low state of the residence variable. In a similar manner, high father's occupation, high father's education, and white race are considered to be the high states of their respective variables.

A complex frequency distribution is carried out controlling on the four independent variables. If we control on  $m$  dichotomous independent variables,  $m^2$  observations on the dependent variable

result. Thus, the four dependent variables used here yield 16 subclass observations. The subclass observations are taken in the form of the proportions of students with high occupational aspirations in each subclass. Table 5 reveals the variable configuration for each subclass.

TABLE 5. PROPORTIONS OF STUDENTS WITH HIGH ASPIRATIONS FOR FOUR VARIABLE CONFIGURATIONS

X (1) Father's Education	X (2) Father's Occupation	X (3) Residence	X (4) Race	Observed Proportions	
H	H	U	W	.82	(1325)
H	H	U	N	.78	(107)
H	H	R	W	.77	(478)
H	H	R	N	.51	(51)
H	L	U	W	.67	(1165)
H	L	U	N	.64	(229)
H	L	R	W	.58	(702)
H	L	R	N	.58	(214)
L	H	U	W	.55	(109)
L	H	U	N	.88	(25)
L	H	R	W	.48	(245)
L	H	R	N	.57	(54)
L	L	U	W	.51	(529)
L	L	U	N	.60	(236)
L	L	R	W	.45	(669)
L	L	R	N	.53	(362)

#### Partitioning of Variable Effects

The problem at this stage of the analysis is to partition the effects of each independent variable on the dependent variable.

It is desired to estimate the effect of each independent variable on the dependent variable when the other dependent variables are controlled. In general, Coleman's approach to estimating variable effects is based on averages of differences in proportions between subclasses in which the independent variable is in a high state

and the condition in which it is in a low state. The general equation for  $m$  dichotomous independent variables is presented in the following manner:

If there are  $m$  independent attributes altogether then there are, altogether  $2^m$ 's. For any attribute there are, therefore, half this many pairs,  $2^{m-1}$ , to be averaged. If the index  $C$  signifies a particular combination of the other dichotomies (e.g., state  $i$  on attributes 2,3,5,8, $m$ , and state 0 on all others, excluding the one in question), then there are  $2^{m-1}$  such combinations, and the proportion of difference for each combination is  $P_{ic}-P_c$ . The equations for the effects of attribute  $i$  are

$$a_i = \frac{1}{2^{m-1}} \sum_{C=1}^{2^{m-1}} (P_{ic}-P_c)$$

or if we let  $2^{m-1} = V$ ,

$$a_i = \frac{1}{V} \sum_{C=1}^V (P_{ic}-P_c)$$

For two independent attributes, there are two comparisons on each; for three, there are four comparisons; for four, eight comparisons; and so on. (Coleman, 1966)

Coleman refers to the residual effects as random shock. Random shock is a measure of the unexplained variance observed in the subclass proportions. Furthermore, random shock can be partitioned into two sources: (1) there is random shock in the direction of higher subclass proportions and (2) there is random shock in the direction of lower subclass proportions. The formulas for these secondary random shock effects are very lengthy and are omitted for the sake of space. (Coleman, 1966)

Random Shock  $\approx$   $\sum_{i=1}^m a_i$

A final measure of composite effect can be easily computed:

Composite Effect  $\approx$   $\sum_{i=1}^m a_i$

Also:

$\sum_{i=1}^m a_i + \text{random shock} =$

The composite effect coefficient is perhaps the most useful of effect measures because it is an index of the explanatory power of the entire model.

TABLE 6. COMPARISON OF VARIABLE EFFECT ESTIMATES FOR FOUR VARIABLE MODEL

Variable	Effect Estimate	Z-Score	Statistical Significance <sup>a</sup>
X(1) Father's Education	.099	3.616	Pr $[X^*(1) \leq 0] < .0002$
X(2) Father's Occupation	.100	3.652	Pr $[X^*(2) \leq 0] < .0002$
X(3) Residence	.123	4.492	Pr $[X^*(3) \leq 0] < .00001$
X(4) Race	-.033	1.205	Pr $[X^*(4) \geq 0] = .1131$
Composite Effect	.289	-----	-----

<sup>a</sup>The cumulative normal distribution was used to determine the probability that the population effects  $X^*(i)$  differ from zero. The computation of effect variances is based on a pooling of subclass proportion variances where each subclass variance =  $P_j(1-P_j)/N_j$ .

Several observations can be made at this stage in the analysis.

All subclasses had relatively high level occupational aspirations (see Table 5). However, considerable differences were observed between subclasses. The four variable model (see Table 6) "explained" only a moderate amount of variation in aspiration levels as indicated by the composite effect estimate of .289. Of the variables in this model, father's education, father's occupation and residence contributed significantly to the estimation of aspiration levels. The chance of the population effect for these three variables being either zero or less was found to be very slight. The racial variable contributed only slightly to the model. The racial effect estimate (-.033) could easily have occurred by chance. It is interesting to note here that racial differences were observed in

the simple comparison but disappeared when the effects of the other variables were controlled.

### Backward Elimination

At this point, variable deletion begins. An adaptation of the "backward elimination procedure" is used to select models for analysis. The following outline gives a step by step account of this method.

STEP I: The highest order model is considered first. The effect estimates for each variable is computed according to procedures provided by Coleman. Also, the composite effect is calculated.

STEP II: Tests of statistical significance for each effect estimate are carried out, again, according to Coleman.

STEP III: The variable with the least statistical significance (in this case, the one with the smallest effect estimate) is eliminated from the model.

STEP IV: The researcher returns to step I and continues until all variables are deleted. The number of models on which the researcher focuses his attention has been reduced.

This reduction procedure reduced the analysis to a few "best" models rather than an analysis of all possible models. It is felt that an intense examination of a few models selected in the fore-mentioned manner will prove superior to an attempt to analyze all possible combinations of a set of variables. This procedure, however, is merely a research guide to variable deletion and should be used only when theoretical guidelines are insufficient to indicate appropriate models for investigation.

TABLE 7. PROPORTIONS OF STUDENTS WITH HIGH ASPIRATIONS FOR THREE VARIABLE CONFIGURATIONS

(1) Father's Education	(2) Father's Occupation	(3) Residence	Observed Proportions	
H	H	U	.82	(1432)
H	H	R	.74	(529)
H	L	U	.67	(1394)
H	L	R	.58	(916)
L	H	U	.61	(134)
L	H	R	.50	(299)
L	L	U	.54	(765)
L	L	R	.53	(931)

TABLE 8. COMPARISON OF VARIABLE EFFECT ESTIMATES FOR THREE VARIABLE MODEL

Variable	Effect Estimate	Z-Score	Statistical Significance
X(1) Father's Education	.158	9.994	Pr $[X^*(1) \leq 0] < .00001$
X(2) Father's Occupation	.088	5.566	Pr $[X^*(2) \leq 0] < .00001$
X(3) Residence	.073	4.617	Pr $[X^*(3) \leq 0] < .00001$
Composite Effect	.319	-----	-----

TABLE 9. PROPORTION OF STUDENTS WITH HIGH ASPIRATIONS  
FOR TWO VARIABLE CONFIGURATION

X(1) Father's Education	X(2) Father's Occupation	Observed Proportion
H	H	.80 (1961)
H	L	.63 (2310)
L	H	.54 (433)
L	L	.53 (1696)

TABLE 10. COMPARISON OF VARIABLE EFFECT ESTIMATES  
FOR TWO VARIABLE MODEL

Variable	Effect Estimate	Z-Score	Statistical Significance
X(1) Father's Education	.180	18.000	Pr $[X^*(1) \leq 0] < .00001$
X(2) Father's Occupation	.090	9.000	Pr $[X^*(2) \leq 0] < .00001$
Composite Effect	.270	-----	-----



## Summary and Conclusions

The proportion of students with high level occupational aspirations in all subclasses was relatively high. Approximately one half of the students in the more disadvantaged groups had high level aspirations, e.g., of the rural Negro students whose fathers had low level occupations and education, 53 percent had high level occupational aspirations. Similar findings were found for the other disadvantaged groups. The occupational aspirations of these students seem very unrealistic in terms of the actual occupations such students will probably enter as their life's work. There is certainly a great potential for occupationally related frustration among such students. A key issue here is the determination of the intensity of the occupational aspirations and the degree of commitment of the disadvantaged students to these occupational goals.

Four models were evaluated in terms of their composite effect estimates. (See Table 11). Four variables (father's occupation, father's education, residence, and race) were used in the first model. In each successive model, the variable which had contributed least to the composite estimate of aspiration level was deleted. This procedure was continued until only one variable remained in the last model.

As indicated by the composite effect estimate (.319), the second model  $[X(1); X(2); X(3)]$  provided the "best" estimate of the aspiration level. Within this model, each variable was found to make a statistically significant contribution to the composite effect estimate. The separate variable effect estimates,

were .158 for father's education, .088 for father's occupation and .073 for residence. The two social class variables (father's education and occupation) accounted for the major portion of the aspiration variation. Although the effect estimate for residence had decreased, it still contributed to the model's explanatory power.

**TABLE 11. MODEL COMPARISON FOR BACKWARD ELIMINATION**

Model <sup>a</sup>	Composite Effect	Change
X(1); X(2); X(3); X(4)	.289	---
X(1); X(2); X(3)	.319	+.036
X(1); X(2)	.270	-.049
X(1)	.200	-.070

<sup>a</sup>X(1) = Father's Education; X(2) = Father's Occupation;  
X(3) = Residence; X(4) = Race

It was hypothesized that the adolescent begins to consider the means required to obtain his earlier (pre-adolescent) high level occupational goals. As he begins to consider the means required to obtain his occupational goal, the likelihood of the perception of limiting factors (goal-blockage) increases. One result of the perception of severe blockage is the lowering of the occupational goals. Furthermore, the severity of goal-blockage should vary according to the actual occupational disparity in the social situation. Thus, it was anticipated that students in the lower classes (as indicated by father's occupation and education), the rural students and the Negro students would tend to have lower

aspirations. The lower class students and the rural students tended to exhibit aspirations which support the aforementioned theoretical notions but no differences were observed for the Negro students.

The failure of the Negro students to follow the general pattern of the other disparity groups presents a conceptual problem for the original formulation. At least, three explanations can be set forth as possible solutions. First, it is possible that the original theoretical formulation may be inadequate for this problem and that other formulations may have superior utility. Second, the influence of the civil rights movement in the south and the related changes in Negro attitudes toward black pride and black power may counteract the present occupational disparity of the Negro. Third, the Negro student may develop his occupational choice in a pattern that differs markedly from the white youth, i.e., it may be useful to discuss developmental types. The Negro may begin to seriously consider means much later than the white youth and, thus, his perception of blockage tends to occur at a later period. Also it is quite possible that a combination of the second and third explanations will yield the most useful model.

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