

DOCUMENT RESUME

ED 106 431

JD 015 168

AUTHOR Picou, J. Steven; And Others
TITLE Race and the Process of Academic Self-Concept Formation.
INSTITUTION Texas A and M Univ., College Station. Texas Agricultural Experiment Station.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
REPORT NO USDA-CSRS-S-81
BUREAU NO BR-7-0158
PUB DATE Mar 75
GRANT OEG-3-7-000158-2037
NOTE 19p.; Paper presented at the Annual Meeting of the Southwestern Sociological Association (San Antonio, Texas, March 1975)

EDRS PRICE MF-\$0.76 HC-\$1.58 PLUS POSTAGE
DESCRIPTORS *Academic Ability; Academic Achievement; *Concept Formation; Critical Path Method; *High School Students; Individual Development; Metropolitan Areas; Parental Background; *Racial Differences; *Self Concept; Self Evaluation; Statistical Analysis; Student Attitudes; Verbal Ability

ABSTRACT

This research summary is said to attempt to solve some of the documented limitations in the self-concept literature by analyzing racial variations in a causal model of the formation of a specific component of self related to the "school learning experience"--academic self-concept. The data for this research came from a larger study of the achievement behavior of 99 black and 127 white high school youths. In the fall of 1972 a stratified, probability cluster sample of high school sophomore males was drawn from a large metropolitan area of the midwest. An analysis comparing demographic characteristics of the sample with county, state, regional, and national census data (1970) revealed no appreciable bias in the analysis data set. Respondents were interviewed in group settings and were paid to participate in the study. The results reveal that: (1) significant other influence manifested similar significant effects for both control groups; (2) academic performance had a significant impact for both control groups; however, the effect was more pronounced for black youth; (3) the impact of verbal ability was primarily direct for white youth and indirect for black youth; and (4) mothers' educational achievement had a significant direct effect on academic self-concept for the black respondents.
(Author/JM)

ED106431

Race and the Process of Academic Self-Concept Formation¹

J. Steven Picou
Texas A&M University

Arthur G. Cosby
Texas A&M University

Evans W. Curry
The Ohio State University

¹Funds for the data collection were provided by Project No. 7-0158, N.I.E. Grant OEG-3-7-000158-2037. Data analysis was supported by TAES Project H-2811, USDA (CSRS) Regional Project S-81, and funds supplied by the Texas A&M University Research Council. The authors assume responsibility for the contents of this study and points of view and opinions expressed do not represent official position or policy of funding agencies. Paper presented at the annual meetings of the Southwestern Sociological Association, San Antonio, Texas, March 1975.

UD 015168

Race and the Process of Academic Self-Concept Formation

ABSTRACT

This study isolates a component of the self related to the school learning experience -- academic self-concept. Theoretical and empirical research in the literature are utilized to specify a casual model which outlines the process of academic self-concept formation. The model is subjected to a path analytic solution for a sample of white and black high school youth residing in a large midwestern metropolitan area. The results reveal that: (1) significant other influence manifested similar significant effects for both control groups; (2) academic performance had a significant impact for both control groups, however the effect was more pronounced for black youth; (3) the impact of verbal ability was primarily direct for white youth and indirect for black youth; and (4) mothers' educational achievement had a significant direct effect on academic self-concept for the black respondents. These findings and others are discussed in terms of their theoretical implications and directions for future empirical inquiry are specified.

RACE AND THE PROCESS OF ACADEMIC SELF-CONCEPT FORMATION

This research summary attempts to resolve some of the documented limitations in the self-concept literature by analyzing racial variations in a causal model of the formation of a specific component of self related to the "school learning experience" -- academic self-concept.² Academic self-concept is viewed as emerging in terms of a model of dynamics of role-specific behaviors.³ This approach obviates some of the conceptual ambiguities engendered by considerations of global self-conceptions.⁴ The basis for the structure of the developed model derives from two primary sources: (1) previous theoretical and empirical studies in the self-concept literature; and (2) recent causal models developed in status attainment and attitude-formation theory.⁵

LITERATURE OVERVIEW

Theoretically, self-conceptions can be viewed as arising from social environmental influences. Primary among these are initial social structural location, the behaviors of significant-others and the individual's own self-reflexive activities regarding role performance.⁶ Along these lines, numerous studies have discerned a positive relationship between social class and indicators of self-concept, including academic self-concept.⁷ This relationship has typically been interpreted in terms of a perspective which maintains that educational socialization experiences and subsequent value acquisitions differ by social structural location. Lower-class work roles of parents, low-income and the general insecurity of the lower-class is thought to engender low self-concepts, while the opposite environmental

situation is thought to produce higher self-conceptions.⁸

An important variable thought to intervene between social origins and self-conceptions is influence provided by significant-others which effect formation of self-concept. Significant-other influence has been found to be an independent predictor of self-esteem as well as educational orientations and achievements of youth.⁹ Numerous studies, including early experimental research, have demonstrated the validity of the symbolic interaction thesis that one's self-definition arises in the context of "others" expectations. Additionally, others' expectations are thought to arise directly from ego's behavioral cues to others, as well as social class origins. Empirical evidence from numerous investigations has demonstrated that educational encouragement imparted to ego by a variety of significant others is related to levels of scholastic performance. The logic of these relationships suggest that significant-other observe the school performance of individuals in developing educational behavioral expectations for ego.¹⁰

Students' scholastic performance has been found to be related to self-conceptions, particularly academic self-concept. Concerning this relationship, it has been stated that:

"Academic self-concept should correlate more highly with grades than test scores, both because grades are known to pupils and because they tend to be normalized to a specific school population".

Thus grades, more than standardize test, provide the adolescent with an "objective" basis to evaluate academic self-worth. Implied is the self-reflexive activity of the student, which produces a social comparison

with peers in terms of scholastic performance.¹² On the other hand, scholastic performance appears to be strongly predicted by mental ability and to a lesser extent by social class origins,¹³ suggesting the possibility of indirect or direct effects of cognitive abilities on self-concept.

This concise overview of the literature indicates that most studies have discerned relationships between academic self-concept and socioeconomic status, mental ability, academic performance and significant-other influence. However, the consistency of these findings are complicated by race; contradictory findings are not uncommon when racial controls have been applied. Furthermore, the results of previous inquiries should be viewed cautiously primarily because of limited samples and the failure of the consistent application of rigorous methodological techniques.¹⁴ A notable exception to this state of affairs is Gordon's (cited above) recent research. Applying controls for race in a model of the educational aspiration process, which included global self-esteem as an intervening variable, Gordon was able to account for 17 and 11 percent of the variance in self-esteem for white and black youth, respectively. The most important predictor variables for both white and black youth were "verbal ability" and "parental expectations." Social class was found to be a rather poor predictor of self-esteem for both groups.¹⁵

Figure 1 presents the causal model to be analyzed for the respondents in this study. Basic exogenous variables situated non-causally are father's educational level (X_6), mother's educational level (X_5) and mental ability (X_4). These variables are considered causally prior to students' academic

performance (X_3). In turn, these variables are considered to be causally prior to significant-other influence (X_2) to attend college. Furthermore, socioeconomic status can be viewed as a variable which defines reference group parameters for students, thereby affecting significant-others' expectations for ego in terms of locating possible reference group members in the social structure. All of these variables are viewed as potentially influencing the formation of academic self-concept (X_1).

Before proceeding to the analysis and evaluation of the model, several points should be made regarding the strategy of this inquiry. First, by isolating a component of the self and specifying a theoretical model, this inquiry attempts to circumvent some of the theoretical and conceptual ambiguities noted above in the self-concept literature. Second, in this analysis primary interest is directed toward a comparison of the causal scheme for both black and white respondents. As such, we are not specifically interested in a black-white comparison of level of academic self-concept. As noted in a recent critique of the research involving racial comparisons of self-esteem, theoretically sterile black-white contrasts more often than not have led to post facto explanations of the "mark of oppression thesis"; a thesis which tends to reflect domain assumptions of the sociologist rather than sound theory-construction.¹⁶

METHODOLOGICAL PROCEDURES

The data for this research came from a larger study of the achievement behavior of black and white high school youth.¹⁷ In the fall of 1972 a stratified, probability cluster sample of high school sophomore males was drawn from a large metropolitan area of the mid-west. An analysis comparing demographic characteristics of the sample with county, state, regional and national census data (1970) revealed no appreciable bias in the analysis data set.¹⁸ All respondents were interviewed in group settings. Respondents were also paid to participate in the study. We have data on 99 black male youth and 127 white male youth.¹⁹

Variable operationalization: Father's education (X_6) and mother's education (X_5) were operationalized as number of years of schooling completed as reported by the students' parents. Verbal ability (X_4) was determined by students' scores on the verbal section of the California Test of Mental Maturity. Academic performance (X_3) was operationalized as freshman grade point average obtained from school records. Significant-other influence (X_2) was measured as the amount of encouragement to attend college students' perceived from parents, teachers, relatives, friends and counselors. Responses ranging from strongly discouraged to strongly encouraged on a five point scale were summed for all significant-others listed above, forming a single index. The dependent variable, academic self-concept, was determined by a summated index of structured responses to the following items: (1) "How do you rate yourself in school ability compared with those in your grade in school?"; (2) "How intelligent do you think you are, compared with other boys your age?"; (3) "How good a

reader do you think you are compared with other boys your age?" Response alternatives were set on a seven point scale.

Statistical Analysis: Path analytic techniques were employed for the analysis of the causal model. Assumptions central to this form of model evaluation have been specified in detail by several authors.²⁰ They include: (1) interval level measurement;²¹ (2) theoretically posited linear additive relationships; (3) all variables are related in an asymmetric causal structure; and (4) dependent variable residuals are uncorrelated with each other and those independent variables included within the model. Path analysis does not prove causation; the utility of path analysis resides in the estimations of causal inferences from a well specified relationship of variables which can be considered as a heuristic model. Because the primary objective of this study is a comparison of models across racial control groups unstandardized regression coefficients (path regression coefficients) are calculated as well as standardized regression coefficients (path coefficients). The rationale for this procedure stems from the fact that variations across populations in path coefficients may be attributed to differences in variances as well as effect differences.²²

FINDINGS

The means, standard deviations and zero-order correlations among the variables in the model are presented in Table 1, by racial groups. Means and standard deviations of the variables differed somewhat by control groups. White respondents had a higher mean verbal ability score and a smaller standard deviation. Lesser mean differences for blacks were observed for fathers' and mothers' education achievement levels, academic

performance, and academic self-concept. Furthermore, all relationships among the variables, with the exception of the correlation between the grades and mental ability, were found to be stronger for the white respondents.

[Table 1 about here]

The results of the path analysis is contained in figure 1. Path coefficients are found in parentheses, while path regression coefficients stand alone. The multiple regression equations, by race, for all five predictor variables on academic self-concept resulted in a R^2 of .49 for the white respondents and R^2 of .33 for the black respondents. This same trend was found for the regression equation for significant-other influence. Approximately six times the variance in significant-other influence was explained for this dependent variable for the white respondents. The equation for academic performance resulted in similar amounts of variance explained for both race groups (.352 for blacks; .340 for whites).

[Figure 2 about here]

Academic performance (X_4) of the respondents was found to be predicted primarily by verbal ability (X_3). Comparing unstandardized coefficients across race groups, it was found that the verbal ability variable had a slightly stronger effect on academic performance for the white respondents (.237 vs. .218). Fathers' and mothers' educational achievement manifested rather weak direct effects on academic performance for both the black and white respondents. These results coincide with several recent studies on white youth which indicate that school performance is poorly predicted by socioeconomic status considerations.²³

Turning our attention to the results obtained for the equation for significant-other influence, some noticeable differences emerge by racial control groups. First of all, none of the predictor variables obtained significance in the model for blacks. For white youth, only one variable, academic performance, manifested a significant direct effect. The indirect effect ($P_{34} \times P_{23}$) of verbal ability on significant other influence, operating through academic performance, was rather strong (.155) for the white subsample. No comparable processual effect was found for the black respondents, as the effect of academic performance on significant-other influence approached zero (-.025).

For the final equation in the model, figure 1 reveals for white youth that parents' educational achievements had no significant direct effects on academic self-concept. On the other hand, mothers' education manifested a significant direct effect for black youth. Comparing the unstandardized partial regression coefficients for the sub-groups reveals that the independent effect of mothers' education was considerably stronger for the black respondents (.230 vs. .033). Differential coefficients also obtained by control categories for the effects of verbal ability. Verbal ability manifested a significant independent effect on academic self-concept for whites (.435), but not blacks (.108). The indirect effect of verbal ability on academic self-concept, operating through academic performance, was found to be somewhat larger for the black respondents (.173 blacks vs. .115 whites). This finding is rather interesting as it suggests that the effect of verbal ability on black youths' academic self-concept is substantially mediated by the performance of students in school. The

process is rather different for whites, in that verbal ability maintains a significant effect on academic self-concept even when school performance considerations are held constant.

With regard to the independent effects of the remaining variables in the model, academic performance and significant-other influence, effect differences were once again observed across control categories. Academic performance was found to have significant effects on academic self-concept for both groups. However, the effect of this variable was considerably stronger for blacks (.840), in contrast to whites (.576). The independent effects of significant-other influence were more comparable, as this variable had a slightly stronger effect for academic self-concept formation of blacks (.269 vs. .239). The indirect effect of academic performance on academic self-concept, operating through significant-other influence, was strongest for white youth (.089), again revealing a processual difference across control groups.

SUMMARY AND CONCLUSIONS

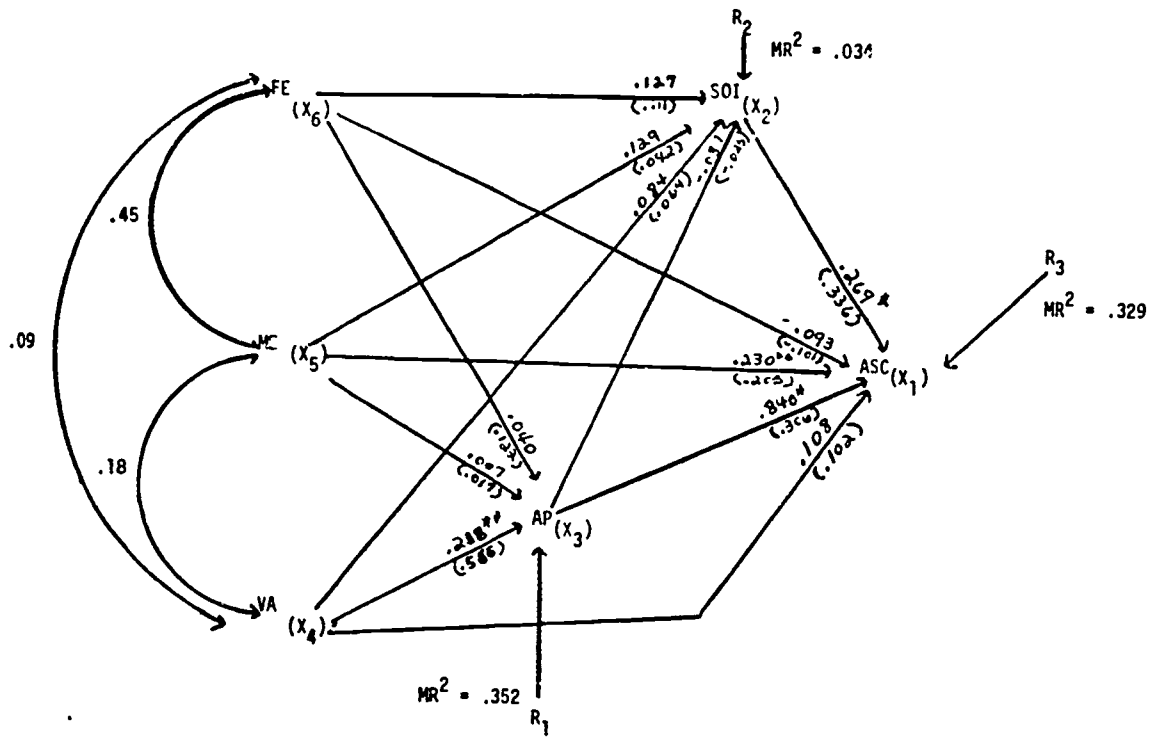
The results of the analysis revealed several general findings. First, the causal model developed from the literature appeared to be a more viable framework for explaining the formation of academic self-concept among white as compared to black youth. The basis for this contention stems from the larger amount of variance explained for the dependent variable in the white model (.49 vs. .33) and the overall stronger variable relationships observed for white respondents. Secondly, verbal ability operates as a direct predictor of academic self-concept for white youth. On the other hand, the role of this variable for blacks is primarily indirect through academic

performance. In turn, academic performance is a stronger determinate of black youths' academic self-concept. Thirdly, significant-other influence appears to be of similar import for the formation of academic self-concepts of youth in both control categories. Finally, the educational achievements of parents were rather inconsequential for all equations in the model for white youth. However, for the black respondents, mothers' education did manifest a significant independent effect on academic self-concept.

In terms of previous empirical research, the results of this study reveal some interesting contrasts. The amount of explained variance in academic self-concept is considerably larger for both the black and white respondents. For example, Gordon (cited above), employing some similar predictor variables, explained 17 and 11 per cent of the variance in global self-esteem for white and black youth respectively. Our results are a distinct improvement, although it should be taken into consideration that the dependent variable utilized in this study reflects a specific component of the self. Although methodological problems preclude a detailed comparison of our results with those presented by Gordon, it does appear that academic performance is an important variable which intervenes between verbal ability and academic self-concept. The academic self-conceptions of black youth were determined by significant-other influence, academic performance and mothers' education; for whites, verbal ability, significant-other influence and academic performance manifested the strongest effects. These within model contrasts of variable effects (utilizing standardized coefficients) point to differences in the relative import of the variables employed in the causal model.

In sum, the academic self-conceptions of both white and black youth tend to develop in terms of the encouragement significant-others provide for college attendance. Taken as a proxy for a more refined measure of educational socialization, this finding reinforces the theoretical contentions and empirical results of previous research which stressed the importance of interpersonal influence as a determinate of self-concept formation. The consistent effects of academic performance also imply that self-reflexive appraisals of performance within the educational institution impact upon academic self-conceptions. The race specific independent effects observed for mothers' education and verbal ability suggest points of departure for future empirical inquiry. Mothers' educational achievement may illicit achievement socialization processes unique to the black population which intervene between this variable and self-concept found for white youth questions results and contentions made in earlier studies (e.g., see St. John, cited above) and provides another point of departure for isolating other intervening variables, which may be unique for white youth. Finally, the complete lack of ability to predict the significant-other influence variable in the model for black youth points to an important weak link in our theoretical structure for this population. Future studies should attempt a more detailed consideration of socialization and behavioral factors which would determine differences in the educational encouragement received by black youth from significant-others.

BLACKS



WHITES

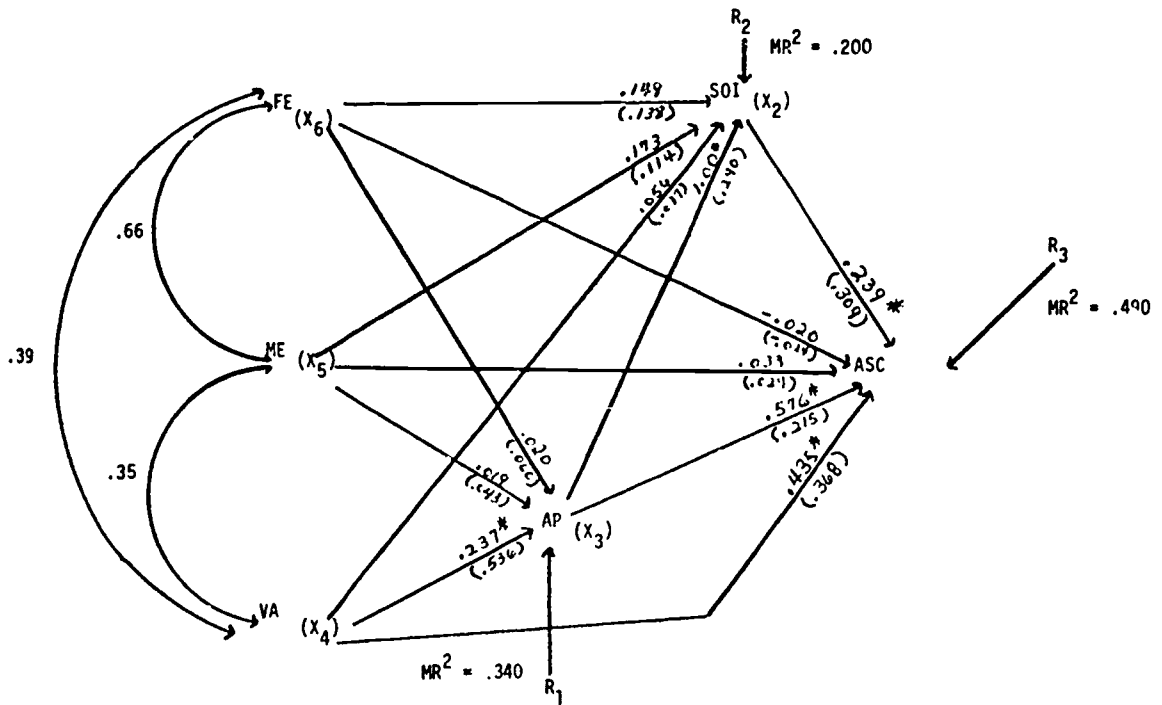


Figure 1: Causal model of the Formation of Academic Self-Concept

FE = Father's Education AP = Academic Performance
 ME = Mother's Education SOI = Significant-Other Influence
 VA = Verbal Ability ASC = Academic Self-Concept

** Coefficient larger than standard error.
 * Coefficient more than twice the size of standard error.

TABLE 1: Means, Standard Deviations and Zero-Order Correlations for all Variables By Race.*

Black (N = 99)							Whites (N = 127)						
\bar{X}	S.D.	V	X ₆	X ₅	X ₄	X ₃	X ₂	X ₁	V	\bar{X}	S.D.		
12.30	2.47	X ₆	1.00	.662	.385	.299	.315	.298	X ₆	13.48	2.72		
12.63	2.02	X ₅	.449	1.00	.365	.281	.301	.300	X ₅	13.11	1.94		
3.75	2.14	X ₄	.086	.181	1.00	.576	.299	.585	X ₄	5.53	1.92		
1.75	.82	X ₃	.178	.174	.580	1.00	.384	.547	X ₃	2.19	.85		
21.25	2.83	X ₂	.153	.150	.076	.048	1.00	.502	X ₂	21.17	2.93		
7.95	2.27	X ₁	.106	.282	.333	.399	.374	1.00	X ₁	8.51	2.27		

*See Figure 1 for Variable Identification; black respondents below the diagonal, white respondents above.

FOOTNOTES

²W. Brookover, A. Paterson and S. Thomas, Self-Concept of Ability and School Achievement. East Lansing, Mich.: Final Report Cooperative Research Project number 845, Michigan State University, 1962. The large body of research which has accumulated on self-concept formation is characterized by conflicting empirical findings, conceptually vague operationalizations, and limited theoretical development. This state of affairs has been given explicit specification in a recent review of self-concept literature. For example, see: J.J. Christmas, "Self-Concept and Attitudes" pp. 249-264 in K.S. Miller and R.M. Dreger (eds.) Comparative Studies of Blacks and Whites in the United States (New York: Seminar Press, 1973)

³W. Brookover and E. Erickson, Society, Schools and Learning. (Boston: Allyn-Bacon, 1969).

⁴Gordon, among others, has noted that "it is rare for relatively specific aspects of self-conception to be delineated and measured in a context of actual empirical research." C. Gordon, Looking Ahead: Self-Conceptions, Race and Family as Determinants of Adolescent Orientation to Achievement. (Washington, D.C.: ASA Rose Monograph Series, 1970):4.

⁵For reviews of literature in these areas, see: Gordon, Ibid.; J. Woelfel and A.D. Haller, "Significant Others, the Self-Reflexive Act and the Attitude-Formation Process," American Sociological Review 36 (February, 1971): 74-87; A.D. Haller and A. Portes, "Status Attainment Processes," Sociology of Education 46 (Winter, 1973): 51-91.

⁶J. Kinch, "Research Note: A Formalized Theory of the Self-Concept," American Journal of Sociology 68 (Feb., 1963): 481-486; Woelfel and Haller, Ibid.; R.W. Bilby, W.B. Brookover, and E.L. Erickson, "Characterization of Self and Student Decision-Making" Review of Educational Research 42 (Fall, 1972): 505-524.

⁷A. Hollingshead, Elmtown's Youth. New York: Wiley, 1949; M. Rosenberg Society and the Adolescent Self-Image. Princeton, N.J.: Princeton University Press, 1965; E.G. Epps, "Correlates of Academic Achievement Among Northern and Southern Urban Negro Students." Journal of Social Issues 25 (Summer, 1969): 55-70; Gordon, op.cit..

⁸Hollingshead, Ibid.; B. Barber, Social Stratification. New York: Harcourt, Brace and Company, 1957; M. Kohn, Class and Conformity: A Study in Values. Homewood, Illinois: Dorsey Press, 1969. Research also indicates that this relationship maybe race specific or questionable. See the results reported by M. Rosenberg and R.G. Simmons, Black and White Self-Esteem: The Urban School Child (Wash. D.C.: ASA Rose Monograph Series, 1971) and

N. St. John, "The Elementary Classroom as a Frog Pond: Self-Concept, Sense of Control and Social Context," Social Forces 49 (June, 1971): 581-594.

⁹Gordon, Ibid. and W.H. Sewell, A.O.Haller and G.W. Ohlendorf, "The Educational and Early Occupational Attainment Process: Replications and Revisions" American Sociological Review 35 (December, 1970):

¹⁰Sewell, Haller and Ohlendorf, Ibid. and J.S. Picou, "The Formation of Educational Goals: A Causal Model" Urban Education 7 (January, 1973): 383-392.

¹¹St. John, Op. cit. p. 582.

¹²L.Festinger, "A Theory of Social Comparison Process" Human Relations 7 (1954): 117-140; Woelfel and Haller, op. cit.

¹³Sewell, Haller and Ohlendorf, op. cit. Gordon (Ibid.) observed direct effects of an indicator of cognitive ability (verbal aptitude) on self-esteem for both black and white youth.

¹⁴Christmas, op. cit., pp. 268-269.

¹⁵Although the Gordon Study is informative, comparisons between racial groups are not possible due to the fact that path regression coefficients (unstandardized coefficients) were not calculated. For more information, see: R.Schoenberg, "Strategies for Meaningful Comparisons," pp. 1-35 in H.L. Costner (ed.) Sociological Methodology: 1972 (San Fran.: Jossey-Bass, 1972).

¹⁶J.McCarthy and W.L. Yancey, "Uncle Tom and Mr. Charlie: Metaphysical Pathos in the Study of Racism and Personal Disorganization." American Journal of Sociology 76 (January, 1971), pp. 648-672.

¹⁷For detailed specification of sampling procedures and characteristics, see: E.W. Curry, J.S. Picou, H.L. Hotchkiss, S. Schritchfield and J. Stahura Significant-Other Influence and Career Decisions of Black and White Male Urban Youth (Columbus, Ohio: The Center for Vocational Education, Final Report Project number 7-0158, 1975).

¹⁸Curry, Picou, Hotchkiss, Schritchfield and Stahura, Ibid., Appendix B.

¹⁹The original sample contained 130 white youth and 117 black youth. No appreciable bias was observed between the original data set and the analysis data set utilized in this study. Tables of verification will be supplied upon request.

²⁰O.D. Duncan, "Path Analysis: Sociological Examples." American Journal of Sociology 72 (July, 1966), pp. 1-16; K.C. Land, "Principals of

Path Analysis," pp. 3-37 in E.F. Borgatta (ed.) Sociological Methodology: 1969 (San Francisco: Jossey-Bass, 1969).

²¹Relaxation of this assumption has revealed the introduction of relatively minor sources of error. For more information see: Land Ibid., pp. 33-34 and R.P. Boyle, "Path Analysis and Ordinal Data" American Journal of Sociology 75 (January, 1970), pp. 461-480.

²²Schoenberg, op. cit.