

Socioeconomic Achievement and the Machiavellian Personality*

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To test the hypothesis that education moderates the relationship between interpersonal manipulateness ("Machiavellianism") and social attainment, data from a national sample (N = 1482) were reanalyzed. The results indicated that, for men with above-average educations, Machiavellianism is associated with higher levels of occupational prestige and larger incomes. However, for men with below-average educations, Machiavellianism is inversely related to occupational attainment, and unrelated to income attainment. Estimates of a structural equation model of the attainment process further support this interpretation, even after controls for race, age, social origins and education are applied. Extension of these analyses to status attainment among women revealed that Machiavellianism appears to have a facilitative effect upon women's attainment, but no evidence of an interaction effect was found. It is suggested that this pattern of results may reflect differences in the process of attainment in white-collar and blue-collar occupations.

The last decade has seen the publication of a substantial body of research on socioeconomic achievement. This research (e.g., Blau and Duncan, 1967; Sewell and Hauser, 1975; Taubman and Wales, 1974) has shown that about forty to fifty percent of the variance in occupational attainment and five to fifteen percent of the variance in income is attributable to the effects of a small set of identifiable variables such as social background, IQ, and education. The rather large amount of variance which is left "unexplained" in such work has led to the suspicion that individual differences in human personality may play an important role in socioeconomic achievement. As Jencks *et al.* put it,

[N]either parental status nor IQ explains most of the variation in occupational status or income. Yet we find it hard to believe that all of this variation is due to luck or chance. Experience suggests that there are personality differences between people who end up in high- and low-status occupations, and also between people who have high or low incomes. We believe, though we cannot prove, that these noncognitive traits explain part of the variation in adult success (Jencks *et al.*, 1972:131).

Guides to survival in the corporate world concur in the belief that personality is of great importance in determining an individual's career attainments. A recurrent theme in such guides extols the advantages of being a "shrewd manipulator" of power and people (e.g., Korda, 1975; Maccoby, 1977). Academic research on the "Machiavellian personality" has identified a parallel trait that involves:

- (1) Lack of emotional affect in interpersonal relations (*i.e.*, being cool, distant, and treating people as objects to be manipulated).
- (2) Lack of concern for traditional morality (*e.g.*, finding deceit utilitarian rather than reprehensible).
- (3) Low ideological commitment (*i.e.*, focusing upon maintaining oneself in power rather than upon inflexible ideals).

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Early laboratory studies of the Machiavellian personality clearly showed that persons who scored high on the "Mach" scale were shrewd manipulators who would out-bargain and out-con their opponents (Christie and Geis, 1970; Blumstein and Weinstein, 1969; Rim, 1966). Given an atmosphere where there is face-to-face interaction, latitude for improvisation, and an opportunity to arouse irrelevant emotions, high-Machs would manipulate social interactions to get what they wanted. The correlations reported between paper and pencil measures of Machiavellianism and success in laboratory bargaining games have been quite impressive, in some instances reaching as high as $r = +0.74$ (cf. Christie and Geis, 1970: 106-129). From these initial validation studies arose the expectation that Machiavellianism would be related to social and economic advancement in the real world. Subsequent research has shown mixed results.

Singer (1964) investigated the relationship between students' Machiavellian tendencies and their college grades, using several samples from Pennsylvania State University. He found partial correlations (holding aptitude constant) ranging from $+0.17$ to $+0.39$ between Machiavellianism and men's grade-point averages. These results seem to fit well with the intuitive notion that skilled manipulators (high-Machs) should be able to sway their teachers' evaluations. Nonetheless, a similar analysis for women did not yield significant correlations.

On a more directly relevant issue, Christie and Geis (1970) hypothesized that Machiavellianism would be positively related to socioeconomic status and social mobility. This hypothesis followed from the fact that the context of socioeconomic achievement in the real world seems to possess the three characteristics which laboratory studies had shown to be important in predicting whether Machiavellianism would influence individual behavior. In particular, occupational careers are filled with face-to-face interactions, allow almost endless opportunities for interpersonal manipulation and improvisation, and the process of obtaining promotions and salary increases seems inevita-

bly to arouse emotions and induce goal-directed behaviors. In order to test for the existence of the hypothesized relationships, measures of Machiavellianism and socioeconomic achievement were collected as part of a 1963 Amalgam survey of the National Opinion Research Center (NORC). Contrary to expectations, the level of respondents' Machiavellianism did not correlate with their socioeconomic status or social mobility.

It was about ten years after the NORC Survey that a plausible explanation for these null correlations appeared. John Touhey (1973) acquired a sample of 99 adult males from two West Coast cities, and he too found no overall correlation between Machiavellianism and social mobility. However, he also reported finding that this null relationship arose from the moderating effect of a third variable—cognitive ability. For men with above-median IQs, the association between Machiavellianism and social mobility was significant and positive, while for men of below-median intelligence, the relationship between these variables was *reversed*. This explanation accounts for the null correlations found when aptitude is not controlled.¹

Before speculating on the dynamics which produce such interesting relationships, this explanation must be supported by more reliable evidence. Touhey's (1973) sample of 99 men was drawn from two fraternal organizations (Elks and Moose) on the West Coast, and it cannot be considered representative of the adult population of the United States. Furthermore, the use of raw change scores in his analysis makes it difficult to assess the validity of his findings; as Cronbach and Furby observe, the use of raw change scores (rather than regression methods) can "lead to fallacious conclusions primarily because such scores are systematically related to any random errors of measurement" (Cronbach and Furby, 1970:68).

The present research was undertaken to explore the generality and interpretation

¹ It should be noted that Machiavellianism and IQ have been found to be uncorrelated in a variety of studies (see Christie and Geis, 1970).

Table 1. Machiavellianism Items Included in National Survey

—Barnum was probably right when he said that there's at least one sucker born every minute.
—Never tell anyone the real reason you did something unless it is useful to do so.
—It is wise to flatter important people.
—The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.
—People suffering from incurable diseases should have the choice of being put painlessly to death.
—Most men are brave. (<i>reversal</i>)
—Honesty is the best policy in all cases. (<i>reversal</i>)
—All in all it is better to be humble and honest than to be important and dishonest. (<i>reversal</i>)
—It is possible to be good in all respects. (<i>reversal</i>)
—Most people who get ahead in the world lead clean, moral lives. (<i>reversal</i>)

Notes. The above table lists only the scale elements keyed for Machiavellianism. In practice, respondents are required to select from among three statements the one which is "closest" to their own feelings and the one which is "most opposite" to their own feelings. For example, the second statement above is presented in the following set:

- 2a. Never tell anyone the real reason you did something unless it is useful to do so (M: Mach item).
- 2b. Since most people don't know what they want it is only reasonable for ambitious people to talk them into things (SD: social desirability match)
- 2c. The well-being of the individual is the goal that should be worked for before everything else (B: buffer item of higher social desirability)

Use of a statement whose social desirability is equal to the Mach item makes it possible to derive a measure of Machiavellianism which is uncontaminated by social desirability artifacts.

Let us denote the three statement types, M, SD, B, and the two possible choices as + (closest to self) and - (most opposite). In Christie and Geis' (1970) coding scheme, the highest Mach score (7) is awarded when a respondent chooses the Mach item as most like himself and the matched item (SD) as least like himself; the lowest score (1) is awarded for the reverse choice, i.e., M-SD+. The other possible choices are assigned scores as follows: (3) B-SD+, M-B+, and (5) M+B-, B+SD-. In the alternative coding scheme proposed by Rogers and Semin (1973), scores are assigned dependent only upon respondents' behavior toward the Mach item: i.e., (1) M-, (7) M+, and (4) if Mach item not chosen.

To control for acquiescence sets the Mach-V scale uses an equal number of positive and negative Mach items. The scoring for the negative items is reversed, and they are listed as "reversals" in the table.

of these relationships using a more adequate sample and more reliable methods.

METHOD

Subjects

Data from the amalgam survey conducted during January of 1963 by the National Opinion Research Center (NORC) were obtained for reanalysis. This sample (N=1482) was drawn from the universe of the total noninstitutionalized population of the continental United States aged 21 and over. Respondents were selected in a standard, multi-stage, area probability sample. Quota sampling for age, race, and employment status was used at the block level.

Interview Procedure

All respondents in the sample were contacted in their homes by NORC's field staff. Interviews began with eleven ques-

tions concerning each respondent's educational and occupational history and other demographic information. Subsequently, respondents answered 24 questions about their attitudes toward IQ testing (reported in Brim *et al.*, 1969), and then they were presented with ten items from the Mach-V scale.² Table 1 presents the portion of these items which expressed pro- or anti-Machiavellian sentiments.

Variables

Our analyses will employ eight variables which have been quantified as follows:

Occupational status (O, O_f, O_h). The occupations of all respondents, their fathers, and the husbands of married

² Items from the Mach-IV scale were also included in the survey; however, since these items are irretrievably confounded with social desirability artifacts, they were not included in our analyses.

women in the sample were coded using the seven-point Hollingshead (1957) scale of occupational prestige (n.b.: this is not to be confused with Hollingshead's "Index of Social Position," which is a composite score based on occupation, education, and area of residence). To facilitate interpretation, the usual scoring system was reversed so that a score of 7 on the scale corresponds to a highly prestigious occupation. The scale categories included:

- (1) Unskilled employees
- (2) Machine operators and semi-skilled employees
- (3) Skilled manual employees
- (4) Clerical and sales workers, technicians, and owners of businesses valued at less than \$6000
- (5) Administrative personnel, "minor" professionals, and owners of businesses valued at \$6000 to \$35,000
- (6) "Lesser" professionals, business managers in large concerns (i.e., value greater than \$100 thousand), and owners of businesses valued at \$35,000 to \$100,000
- (7) "Major" professionals, "higher" executives, and owners of businesses valued at more than \$100,000.

Income (I). Respondents were asked to report their total family income from all sources during 1962. Responses to this question were originally coded into nine categories representing incomes from \$0 to \$14,999; a tenth category identified subjects who reported incomes in excess of \$14,999. For our analyses, respondents have been assigned an income corresponding to the midpoint of the category into which they were originally coded; thus, a respondent identified as having an income of between \$8,000 and \$10,000 is assumed to earn \$9,000. Those subjects who were coded into the tenth category ($n = 27$) were assigned incomes of eighteen-thousand dollars, which is a rough approximation of the median income in 1962 of that segment of the national population which earned over \$15,000 (U.S. Bureau of Census, 1963).

Machiavellianism (M). Mach-V scores were computed in the normal manner and adjusted to take account of the shortened version of the scale used in the survey. A respondent's score was used in our analysis only if he answered at least 9 of

the 10 items included in the survey. The internal reliability of the scale as measured by Cronbach's coefficient alpha was 0.68.

Education (E). Educational attainment is measured as years of schooling (representing the midpoints of seven original coding categories).

Race (R). Coded 1 if the respondent was black, 0 otherwise (the racial composition of the sample was: Black-12.7%; White-86.5%; "Other"-0.8%).

Age (A). Respondents' ages were coded in years (representing the midpoints of seven original coding categories).

General Plan of Analysis

Following Touhey's strategy, we dichotomized our sample of men on the basis of their Machiavellianism scores and educational attainment. The four groups resulting from these splits were then compared as to their occupational attainment and income. Subsequently, a linear, additive model of the socioeconomic attainment process was fitted to our data for men with above- and below-median educations, and the coefficients representing the effects of Machiavellianism were compared. As a final step, the sensitivity of these coefficients to differential social desirability biases was assessed, and our analysis was extended to include women.

Our use of educational attainment in these analyses precludes an exact replication of Touhey's (1973) research design: unfortunately our data do not contain an explicit measure of intellectual aptitude. Even so, results from a wide range of studies (cf., Jencks *et al.*, 1972:325-327) indicate that IQ measures and educational attainment are highly correlated ($r = +0.6$ to $+0.7$), and thus our range of error in this regard may be smaller than that ordinarily incurred by unreliability in the measurement of respondents' Machiavellianism.

RESULTS AND ANALYSIS

Occupational Attainment of Men

Of the 716 men in the sample, 700 reported their occupation and education in

sufficient detail to permit coding; 662 of these respondents also completed at least 9 of the 10 Mach-V items.

Table 2 presents the occupational characteristics of the four subsamples obtained by concurrently dividing the entire sample at the approximate medians in Mach-V scores (93.5) and educational attainment (12 years). This analysis reveals that among the more educated respondents, higher Mach-V scores are associated with placement in more prestigious occupations [$t(315) = +2.18, p < .05$]. However, for less-educated subjects, an opposite result is found: men with higher Mach-V scores occupy *less* prestigious occupations than those with lower scores [$t(343) = -2.73, p < .01$]. The absolute difference in occupational attainment between high and low scorers is approximately 0.40 points on a scale that uses 7 points to cover the entire social spectrum. An analysis of variance³ for these data substantiates the significance of this interaction [$F(1,658) = 11.3, p < .001$].

Obviously, these analyses are not sufficient in themselves to support the notion that Machiavellianism is differentially associated with *mobility*. They might reflect nothing more than different levels of parental occupation, *i.e.*, the four subpopulations might be equally mobile (or stationary), but have had different "starting points." To examine this alternative explanation, the mean occupational status of the fathers of the four subpopulations was computed for the 483 respondents who reported knowing their father's occupation in sufficient detail to permit classification.⁴ These data revealed that an interpretation of Table 2 in terms of postulated differences in the occupational levels of the fathers of the four groups is untenable. There is no parallel finding of a

³ General linear model analysis using Scheffé's (1959) correction for disproportionate cell frequencies. Sample was split at median education (0-11 vs. 12+ years) and mean Mach score (0-93 vs. 94+).

⁴ Overall there was greater reporting of fathers' occupations among more-educated respondents, and among respondents scoring higher on the Mach-V scale. However, within none of the four subpopulations was there a significant difference between the occupation, education, or Mach-V scores of respondents reporting (vs. not-reporting) their father's occupation.

Table 2. Mean Hollingshead Prestige Ratings for Men's Occupations at Two Levels of Education and Machiavellianism.

Educational Level		Respondents' Machiavellianism	
		Low	High
Low (0-11 Years)	Mean	2.79	2.42
	Std. Dev.	1.33	1.16
	N	202	143
High (12+ Years)	Mean	3.92	4.33
	Std. Dev.	1.72	1.60
	N	149	168

strong interactional phenomenon in the parental data [$F(1,479) = 1.26, n.s.$], nor was there a main effect for offsprings' Machiavellianism [$F(1,479) = 0.00, n.s.$]. However, these data did exhibit the well-known association⁵ between parental occupation and sons' educational attainment [$F(1,479) = 56.3, p < .001$].

Having addressed an obvious objection to the interpretation of the interaction phenomenon in terms of mobility, one further explanation merits consideration. Given the crudeness of the median split technique, it is possible that the interaction evidenced in the attainment data could arise from an appropriate pattern of correlation between educational level and Machiavellianism within subpopulations, *i.e.*, among high-school graduates, more educated respondents might tend to give more Machiavellian responses, while the opposite trend might occur among subjects who had not finished high school. If such a pattern of association were found, one could parsimoniously interpret the results summarized in Table 2 as a further demonstration of the effect of education upon occupational attainment. To test the plausibility of this explanation, the product-moment correlation between educational level and Machiavellianism was computed separately for the low- and high-education groups. Both correlations were found to be weakly positive ($r = +.09$ and $+.10$, respectively), and this alternative explanation was rejected.

These results led us to consider one further attainment variable: yearly income. If the interaction phenomenon is

⁵ *E.g.*, Blau and Duncan (1967) report a linear correlation of $+0.44$ for their 1962 national sample.

Table 3. Mean Family Income in 1962 for a National Sample of Men at Two Levels of Education and Machiavellianism.

Educational Level		Respondents' Machiavellianism	
		Low	High
Low (0-11 Years)	Mean	\$4575	\$4790
	Std. Dev.	3070	3266
	N	199	141
High (12+ Years)	Mean	\$7100	\$8286
	Std. Dev.	3782	4600
	N	145	166

Note. \$1.00 in 1962 had the same purchasing power as \$1.99 in May, 1977.

truly pervasive, we would expect it to be reflected in the average family incomes of the four subpopulations of men. Table 3 presents the relevant analysis. Among more-educated respondents, we find that high scorers on the Mach-V scale have family incomes which are \$1186 higher than their less-Machiavellian colleagues [$t(309) = 2.59, p < .01$], while among less-educated men, there is no significant difference between the incomes of low- and high-Machs [$t(338) = 0.61, n.s.$].⁶

Interaction in a Linear Equation Model

Given the preceding evidence, it should be possible to provide a formal demonstration of this interaction phenomenon by employing a structural equation model of the type commonly used in studies of status attainment (c.f., Goldberger and Duncan, 1973). The model we employ specifies a son's occupational attainment (O) as a linear, additive function of his father's occupational level (O_f), and his own educational achievement (E), age (A), race (R), and Machiavellianism (M). That is,

$$O = b_{0O_f}O_f + b_{OE}E + b_{OA}A + b_{OR}R + b_{OM}M + e \quad [1]$$

where the b_{ij} terms are beta weights (standardized partial regression coefficients), and the variables are assumed to be in standard form.

In estimating the parameters of equation [1], our effective sample size is reduced to the number of respondents ($N = 474$) for whom we have complete information. Matrices of intercorrelation estimates for the six variables employed in the model equation were computed separately for the low- and high-education groups, and were adjusted to correct for attenuation assumed to arise from random measurement errors.⁷ Ordinary least-squares procedures were then employed to estimate the b_{ij} terms; these estimates are presented in Table 4.

⁷ Correlations for Machiavellianism, race, age, education, and son's occupation were estimated from data for all cases containing complete information on these variables ($N = 662$); correlations involving father's occupation were computed from those cases containing complete information on all six variables ($N = 474$). Standard errors were estimated using the smaller N as sample size. A comparison of the correlations obtained for our sample to the available data from the 1962 OCG survey (reported in Blau and Duncan, 1967) shows considerable similarity ($r_{O_fO} = 0.39$ vs. 0.41 ; $r_{OE} = 0.54$ vs. 0.59 ; $r_{EO_f} = 0.39$ vs. 0.44).

Reliability estimates were derived from Siegel and Hodge (1968) for education ($r_{EE} = 0.93$) and occupation of son ($r_{O_fO} = 0.87$), from Jencks (1972) for fathers' occupation ($r_{O_fO_f} = 0.77$), and finally, from Christie and Geis' report (1970) of a reliability of about 0.65 across several studies for Mach V. We have assumed that age and race are measured with insignificant errors (i.e., $r = 1.0$), and that the reliability of wives' reports of their husbands occupations is as high as that of self reports. These estimates have been used to purge the correlation matrix of the presumed effects of random measurement errors employing a standard technique described by Johnston (1963) and suggested for this purpose by Bowles and Nelson (1974). Unlike the latter authors, however, we have assumed that intravariation measurement errors are uncorrelated, and we also assume that our NORC measurements are of the same quality as those used to generate our reliability estimates (mainly Census-CPS). Because of the conservative nature of these assumptions and the fact that the less-comprehensive Hollingshead occupation codes (rather than Duncan scores) and a shortened version of the Mach scale were used in the NORC survey, we suspect that our procedures may understate the degree of attenuation which arises from measurement error in these data.

⁶ Data for married women in the NORC sample suggest that approximately 24.8 percent of the men would have had working wives. Thus it could be argued that these family income data might reflect a differential trend for High Machs to have working wives. Although this hypothesis cannot be directly tested with the available data, one further analysis is germane to this question: Replicating the income analysis for *unwed* men we find a pattern which is roughly parallel to the finding for the total sample (High Education: $\bar{X}_{HiMach} - \bar{X}_{LoMach} = \$1819, t(65) = 1.53$; Low Education: $\bar{X}_{HiMach} - \bar{X}_{LoMach} = \$1089, t(46) = 0.86$).

Table 4. Standardized Coefficients for Structural Equation Model of Occupational Attainment Estimated for Men at Two Levels of Education

Independent Variable	Coefficient	Low Education (0-11 Years)	High Education (12+ Years)
Father's Occupation	b_{OO}	.159 (.160 ± .068)	.034 (.034 ± .045)
Education	b_{OE}	.129 (.059 ± .031)	.716 (.641 ± .040)
Race	b_{OR}	-.183 (-.638 ± .231)	-.144 (-.985 ± .275)
Age	b_{OA}	.162 (.014 ± .006)	.042 (.005 ± .005)
Machiavellianism	b_{OM}	-.124 (-.014 ± .007)	-.079 (.011 ± .005)
R ²		.142	.610

Notes. Unstandardized coefficients appear in parentheses with the standard errors of their estimates.

From these results we note a substantial variation across educational levels in the power of the model to predict occupational attainment, and in the estimated role of the social variables in the attainment process. Although the weak effect of education at its lower levels is seldom noted by researchers using regression methods to study occupational attainment, a similar finding is implied by Blau and Duncan's plot (1967; fig. 4.3) of occupational attainment as a function of educational level in the national population. At or above the level of "high school graduate," each additional year of schooling is associated with a substantial increment in occupational attainment, while below this level the increment associated with an additional year of schooling is negligible.

The coefficients representing the influence of age and father's occupational status upon attainment also vary between samples. The estimated values of these coefficients are substantial for men with less than a high-school education, but they are effectively zero for men who have twelve or more years of schooling. These results suggest that while formal education is the major influence upon the occupational attainment of the better-educated half of the population, intergenerational status inheritance and job tenure advantages (e.g., through on-the-job training or seniority systems for promotion) play an important role in the achievement of less-educated men. We also note that the coef-

ficient representing the net disadvantage of black men in the labor market is large and does not vary significantly between samples.

To test for the existence of the Mach-interaction phenomenon, we pose the following question: Do the estimated partial regression coefficients for Machiavellianism (b_{OM}) in equation [1] vary with the educational level of the population? Inspection of Table 4 reveals a pattern which is consistent with Touhey's (1973) findings and our own median split analysis: a positive association between Machiavellianism and attainment (controlling for education, age, race, and father's occupation) is found for the high-education group, while a negative association is found for the less-educated subsample. Under the assumption that the measurement error in these data is essentially random and of a magnitude similar to that found in other studies, the t-test values for the coefficients for Machiavellianism are sufficiently large (i.e., $t = -2.0$ vs. $t = +2.2$) to engender some confidence in our result.⁸ In terms of absolute

⁸ It is recognized (see Schoenburg, 1972) that the meaningful cross-sample comparison of such parameters requires (a) unstandardized coefficients, (b) variables that are identically measured in both samples, and (c) an appropriate accounting for measurement errors. Table 4 attempts to satisfy these requirements, and thus provide a meaningful basis for contrasting the effects of Machiavellianism in the two samples (while simultaneously controlling for the other independent variables). Unfortunately, sampling theory does not provide an explicit guide to

magnitude, the difference (at each level of education) between the predicted occupational attainment of men ranking in the 5th (vs. 95th) percentile on Machiavellianism is approximately one-half unit on a scale that uses only seven points to represent the entire occupational distribution.

The role of social desirability. In a recent critique, Rogers and Semin (1973) drew attention to social desirability artifacts in the scoring of the Mach-V scale. While the format of this scale was designed to control such artifacts (by requiring forced choices between Mach and non-Mach items of equivalent social desirability), Rogers and Semin argue that the six-category scoring system used by Christie and Geis (1970) relies upon discriminations between non-Mach items,⁹ and that thus it reintroduces social desirability artifacts into the measurement of Machiavellianism. The potential implications of this artifact are noteworthy; Rogers and Semin conclude that,

At best this [scoring system] introduces random error. Further, if for any reason (e.g., different populations) the social desirability matching was invalid, Christie and Geis' [scoring system] makes no sense at all. (Rogers and Semin, 1973:34)

Since there is a considerable literature documenting social class differences in attitudes and tolerance of non-conformity, it is not implausible to suspect that our findings may be contaminated by such artifacts. In order to test the sensitivity of our conclusions to this potential bias, we rescored the Mach-V protocols using a three-fold scoring system proposed by Rogers and Semin (1973). This system re-

formal hypothesis testing after corrections for measurement errors have been introduced—except in the special case treated by Lord (1960). For this reason the t-statistics for the two coefficients for Machiavellianism (b_{0M}) cannot be assigned their normal meaning (i.e., $p < .05$).

⁹ Christie and Geis' (1970) six-category scoring grid was designed, in their words, "to take full advantage of the fact that it is probably more Machiavellian to say that the Mach item is most like and the (social desirability) matched-item least like oneself—a two-step difference—than to say that the Mach item is most like and omit the matched item or omit the Mach item and say that the matched item is least like oneself—a one-step difference" (Christie and Geis, 1970: p. 30).

lies only upon respondents' choices regarding the Mach element of an item (see example in Table 1). Comparing the two scoring methods, we found them to yield highly similar measures of Machiavellianism ($r = 0.91$), and we obtained virtually identical coefficient estimates when the linear equation model of attainment was re-estimated using the revised scores.

Status attainment and women's Machiavellianism. Although Touhey (1973) did not study women, we have attempted to extend our analyses to include them. In doing so, certain preliminary considerations deserve note.

Only a small proportion (26%) of the women in our sample were engaged in paid, full-time employment. Almost sixty percent of the women in our sample classified themselves as "housewives"; conventional occupational prestige scales do not include codes for the occupation of "housewife." Rather, traditional notions of status attainment view women as attaining social and economic status by marriage rather than by their own occupational achievements. While this formulation has come to be regarded as deficient as a general statement, one suspects that such sex-role stereotypes may capture aspects of social reality which merit consideration in a sample such as ours (born circa 1890–1942).

Initially we repeated our median split analyses for women's occupational attainment. The results of this analysis revealed both a positive relationship (at both levels of education) between Machiavellianism and occupational attainment among women, and significant positive correlations between women's Machiavellianism and the level of their father's occupations. The latter finding precluded an interpretation of the attainment data in terms of differential *mobility*. To provide a basis for such interpretations we then fit our linear equation model of attainment to the data for women.¹⁰ We estimated this

¹⁰ (a) Procedures used to estimate equations for high-education and low-education groups were similar to those used for the male sample. Because few women in our sample were employed fulltime [$n = 68$ (low ed); 117 (high ed)], it was not possible to carry out separate analyses for this group. In estimating the correlation matrix for the combined female sam-

Table 5. Standardized Coefficients for Model Predicting Status Attainment of Women as Reflected in the Level of their Own and their Husbands' Occupations

Independent Variable	Coefficient	Dependent Variable	
		Own Occupation	Husbands' Occupation
Occupation of Women's Father	b_{OF}	.118 (.126 ± .035)	.278 (.308 ± .048)
Women's Education	b_{OE}	.696 (.346 ± .017)	.387 (.199 ± .022)
Women's Race	b_{OR}	-.125 (-.613 ± .145)	-.131 (-.670 ± .197)
Women's Age	b_{OA}	.281 (.032 ± .004)	.080 (.010 ± .004)
Women's Machiavellianism	b_{OM}	.102 (.015 ± .004)	.060 (.009 ± .006)
R^2		.644	.388

Note. Unstandardized coefficients appear in parentheses with the standard errors of their estimates. Minimum sample size for estimate of any bivariate correlation was 418.

model separately for women with above- and below-average educations, using two dependent variables: (1) the occupational level the respondent reported for herself, and (2) the occupational level she reported for her husband. Analysis of the latter variable was undertaken to provide some insight into the plausibility of attainment-by-marriage effects.

Examination of the model coefficients for Machiavellianism estimated in the high- and low-education subsamples revealed that there were no substantial differences between the effect of Machiavellianism on either dependent variable in the two subsamples. Thus, for our purposes, the attainment data can be adequately represented by a single set of coefficients estimated for all women. Estimating these coefficients (see Table 5) we found that Machiavellianism appears to play an important role ($t = 2.75$) in facilitating the occupational attainment of women. In terms of magnitude, the net effect of Machiavellianism upon occupational attainment is marginally greater for women than it is for men with above-average educations (unstandardized $b = +.015$ vs. $+.011$). The evidence presented in Table 5

does not, however, support the notion that Machiavellianism has an effect upon women's status attainment via marriage.

DISCUSSION

The foregoing results suggest that personality variables may have important and systematic effects upon socioeconomic achievement. At the most general level our work suggests that advances in our ability to account for variations in social attainment may result from the inclusion of personality variables in models of status attainment. While some work (Elder, 1968; Duncan *et al.*, 1972; Turner, unpublished) in this direction has been undertaken, our results suggest that a wider range of personality variables should be considered, and that careful attention should be given to the possibility that relationships which hold for one subgroup (*e.g.*, one sector of the work force) may not hold, or indeed may be reversed, for other subgroups.

As to the specific personality variable—Machiavellianism—considered in the present study, our results lend qualified support to Touhey's findings. Both the positive relationship between Machiavellianism and occupational attainment for men with above-average educations and the negative relationship for those with below-average educations emerge in the national survey data. For

ple. pairwise deletion of cases was used: as with the men, the major source of missing data was nonreport of father's occupation.

(b) Only 28 of the women in the sample reported that they had never been married

women, however, there is no evidence of a similar interaction. Considering the available data upon women's occupations, we found Machiavellianism to have a substantial facilitative effect upon women's occupational attainment, and we found no support for the interaction hypothesis.

While our results suggest that Machiavellianism may influence attainment, its role, nonetheless, is not overwhelming. Even though we have made substantial allowance for unreliability in the measurement of Machiavellianism, our analyses show that the influence of this personality variable is considerably weaker than that of education. Nonetheless, our results do indicate that this variable may have effects which are sometimes larger than those of other variables, such as father's occupation, which have a recognized place in the literature on status attainment. Overall, we believe our results warrant rejection of Christie and Geis' (1970) conclusion that there is no relation between Machiavellianism and socioeconomic achievement. The problem now is to make sense of the relationships we have found.

Given only the present cross-sectional data, it would be impossible to decide whether these findings arise from the causal effect of Machiavellianism upon attainment, or whether they reflect the role of socioeconomic achievement in the development of the Machiavellian personality. The substantial body of laboratory findings which document the achievements of people *previously* identified as Machiavellian support the former interpretation, that is, that personality influences achievement. Indeed, given that almost all of this laboratory evidence is derived from studies of college populations, there is no inconsistency in our finding that Machiavellianism is not positively correlated with attainment for *less-educated* men.¹¹

¹¹ A review of the 50 laboratory studies reported in Christie and Geis (1970) reveals that 46 employed only college students or college graduates as subjects. Of the four remaining studies, two used mixed samples composed primarily of college students.

Some laboratory evidence that the role of Machiavellianism can vary for different segments of the population is found in studies of children's per-

To explain such interaction phenomena, Touhey (1973) suggested that manipulative skills may be valuable only if a person is intelligent enough to conceal them; i.e., if the manipulator is of low intelligence his machinations may "backfire" because they are obvious to others and invite retribution. While Touhey's speculations are plausible, they do present some problems. In particular, since there is no evidence that accuracy of social perception is related to either education or IQ (within the "normal" range), it is unclear why less-educated Machiavellians would not learn that their machinations were counterproductive and alter their behavior. Furthermore, if Touhey's interpretation were correct, we would have expected to find a similar interaction in the data on women's attainment. None was found in our analyses.

An alternative interpretation of these findings¹² follows from the fact that the

formance in dyadic bargaining games (Turner and Martinez, unpublished). In this research each subject was classified as either high- or low-Mach and high- or low-IQ, and the four quadrants of the resultant matrix were compared in terms of their relative winnings. Although the sample size was small (24 dyads), the results reached significance ($P < .05$) in support of the interaction hypothesis. A parallel investigation consisting of a secondary analysis of data collected by Braginsky (1970) produced similar, but somewhat weaker, evidence of an interaction effect.

¹² One further category of possible interpretation deserves note. As in all studies which do not obtain objective verification of self-report measures, it is possible to argue that measurement errors are responsible for the pattern of results we have obtained. We have attempted to control for the implications of random errors of measurement in the analyses presented in Tables 3 and 4, but it should be realized that our results are not independent of the assumptions we have made concerning the nature of these errors. The assumption of *randomness* is particularly crucial. Although very recent work (Bielby *et al.*, 1977) suggests that response errors in the measurement of common socioeconomic variables (e.g., education, occupation, income) are essentially random for nonblack respondents, no parallel evidence is available for measurements of our personality variable. Thus, it remains possible to interpret our findings in terms of nonrandom response errors. For example, one might plausibly argue that our results reflect an association between respondents' Machiavellianism and their willingness to *misreport* their occupational status and income.

Similarly, although our reliability estimate for Machiavellianism ($r = 0.65$) is buttressed by internal evidence in the NORC survey (i.e., Cronbach's

division of the national population on the basis of sex and educational qualifications creates subgroups which contain different proportions of white-collar and blue-collar workers. Women and more educated workers are more likely to be found in white-collar jobs, while blue-collar occupations contain relatively larger numbers of men and those with below-average educations. Thus, in effect, our results show Machiavellianism to have a positive effect on occupational attainment in the two groups which have the greatest number of white-collar workers, i.e., men with above-average educations and women.

Converging lines of evidence on intergenerational and intra-career mobility between occupations, patterns of residential segregation, and the formation of friendship networks (Blau and Duncan, 1967: ch. 2; Vanneman, 1977) show a significant degree of isolation between workers in blue-collar and white-collar jobs and a relatively low degree of mobility *between* these two types of occupations. Moreover, characterizations of the nature of white-collar and blue-collar employment frequently draw attention to essential differences in the organization of work and the modes of worker control in such occupations (cf. Edwards *et al.*, 1975; Bowles and Gintis, 1975; Doeringer and Piore, 1971). The conditions of work in white-collar occupations are said to be more highly bureaucratized and to engender modes of worker control which are typically exercised through systems of performance evaluation and the subsequent award (or denial) of promotions

and pay increases. In contrast, blue-collar work places are generally less bureaucratized, and control is often exercised through explicit standards (e.g., assembly-line quotas, seniority systems for promotion) and often coercive disciplinary measures (e.g., dismissal).

These differences are relevant to our understanding of the effects of Machiavellianism upon attainment. Past laboratory research has shown that, in order to succeed, high-Machs require situations which provide considerable latitude for improvisation and interpersonal manipulation; these conditions appear to be more characteristic of white-collar, rather than blue-collar, jobs. Thus, it might be reasonable to expect that the proportion of a group employed in white-collar jobs would determine the extent to which Machiavellianism would be positively correlated with occupational mobility. Viewed from this perspective, the truly novel aspect of our findings is the suggestion that blue-collar workers may underachieve or be penalised in proportion to their Machiavellianism.

REFERENCES

- alpha for scale = 0.68), our assumptions concerning this estimate and the others used in our analysis are of consequence to our conclusions. While the basic assumption—that errors in the measurement of socioeconomic variables are considerably smaller than those involved in the measurement of psychological variables—appears warranted, it is important to realize that radically different assumptions would lead to different conclusions. For example, if we were to assume that all our measurements were error-free (i.e., $r_{ii} = 1.0$), we would be led to conclude that the interaction effect for men was of insubstantial magnitude (when controls for race, age, father's occupation, and education were applied), although we would still observe a modest positive effect of Machiavellianism upon women's occupational attainment.
- Bielby, W., R. Hauser, and D. Featherman
1977 "Response errors in models of the transmission of socioeconomic status." *American Journal of Sociology* 82 (May):1242-1288.
- Blau, P., and O. D. Duncan
1967 *The American Occupational Structure*. New York: Wiley.
- Blumstein, P., and E. Weinstein
1969 "The redress of distributive injustice." *American Journal of Sociology* 74:408-414.
- Bowles, S., and H. Gintis
1975 "The problem with human capital theory—a Marxian critique." *American Economic Review* 65 (May):74-82.
- Bowles, S., and V. Nelson
1974 "The 'Inheritance of IQ' and the intergenerational reproduction of economic inequality." *Review of Economics and Statistics* 56:39-51.
- Braginsky, D.
1970 "Machiavellianism and manipulative interpersonal behavior in children." *Journal of Experimental Social Psychology* 6:77-79.
- Brim, O., D. Glass, J. Neulinger, and I. Firestone
1969 *American Beliefs and Attitudes Toward IQ Testing*. New York: Russell Sage

- Christie, R., and F. Geis
1970 *Studies in Machiavellianism*. New York: Academic Press.
- Cronbach, L., and L. Furby
1970 "How should we measure change—or should we?" *Psychological Bulletin* 74:68–80.
- Doeringer, P. B., and M. J. Piore
1971 *Internal Labor Markets and Manpower Analysis*. Lexington: D. C. Heath.
- Duncan, O. D., D. Featherman, and B. Duncan
1972 *Socioeconomic Background and Achievement*. New York: Seminar Press.
- Edwards, R., M. Reich, and D. Gordon (eds.)
1975 *Labor Market Segmentation*. Lexington: D. C. Heath.
- Elder, G.
1968 "Achievement motivation and intelligence in occupational mobility." *Sociometry* 31:327–354.
- Goldberger, A., and O. D. Duncan (eds.)
1973 *Structural Equation Models in the Social Sciences*. New York: Seminar Press.
- Hollingshead, A.
1957 *A Two-Factor Index of Social Position*. New Haven: Privately printed. (Summarized in A. Hollingshead and F. Redlich (1958), *Social Class and Mental Illness*. New York: Wiley.)
- Jencks, C., M. Smith, H. Acland, J. H. Bane, D. Cohen, H. Gintis, B. Heyns, and S. Michelson
1972 *Inequality: A Reassessment of the Effect of Family and Schooling in America*. New York: Basic.
- Johnston, J.
1963 *Econometric Methods*. New York: McGraw Hill.
- Korda, M.
1975 *Power: How To Get It and How To Use It*. New York: Random House.
- Lord, F.
1960 "Large sample covariance analysis when the control variable is fallible." *Journal of the American Statistical Association* 55:307–321.
- Maccoby, M.
1977 *The Gamesman*. New York: Simon & Shuster.
- Rim, Y.
1966 "Machiavellianism and decisions involving risk." *British Journal of Social and Clinical Psychology* 5:30–36.
- Rogers, R., and G. Semin
1973 "Mach V: an improved scoring system based on a triadic choice model." *Journal of Personality and Social Psychology* 27:34–40.
- Scheffe, H.
1959 *The Analysis of Variance*. New York: Wiley.
- Schoenberg, R.
1972 "Strategies for meaningful comparison." Pp. 1–35 in H. Costner (ed.), *Sociological Methodology: 1972*. San Francisco: Jossey Bass.
- Sewell, W., and R. Hauser
1975 *Education, Occupation and Earnings*. New York: Academic Press.
- Siegel, P., and R. Hodge
1968 "A causal approach to the study of measurement error." Pp. 28–59 in H. Blalock and A. Blalock (eds.), *Methodology in Social Research*. New York: McGraw Hill.
- Singer, J.
1964 "The use of manipulative strategies: Machiavellianism and attractiveness." *Sociometry* 27:128–50.
- Taubman, P. and T. Wales
1974 *Higher Education and Earnings*. New York: McGraw Hill.
- Touhey, J.
1973 "Intelligence, Machiavellianism and social mobility." *British Journal of Social and Clinical Psychology* 12:34–37.
- Turner, C.
Un-Longitudinal and Experimental Perspectives on the Social Psychology of Status Attainment: A Proposal to the National Science Foundation (NSF: 75–21409). 1975.
- Turner, C., and D. Martinez
Un-Social attainment, cognitive ability and publ. Machiavellianism. Unpublished manuscripts Columbia University, 1975.
- U.S. Bureau of Census
1963 *Current Population Reports (Consumer Income); Income of families and persons in the United States: 1962*. Series p-60m No. 41 (October).
- Vanneman, R.
1977 "The occupational composition of American classes." *American Journal of Sociology* 82:783–807.