A STUDY OF THE MACHIAVELLIAN ORIENTATION LOCUS OF CONTROL AND JOB SATISFACTION OF A SELECTED SAMPLE OF VIRGINIA PUBLIC SCHOOL SECONDARY LEVEL PRINCIPALS

by

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CHAPTER 1

Introduction

Machiavellianism may be regarded as the degree to which an individual believes that others may be manipulated to achieve one's own personal goals and the effectiveness with which the manipulator employs undetected tactics toward that end. The personality trait bears the name of the 16th century political theorist and author who has become famous for his advocacy of the use of deceit, guile and opportunism in interpersonal relations. Machiavellianism may also be viewed more clinically. Marks and Lindsay (1966) defined Machiavellianism as "a K-component vector having . . . cognitive, affective skill and interpersonal awareness parameters" (p. 234). In terms of Machiavellian orientation, behavior ranges along a continuum from low to high. Christie and Geis (1970) labeled the analytical detachment of the high Mach, "the cool syndrome", and the emotional and affective involvement of the low Mach--"the soft touch." The authors contended that:

> High Machs manipulate more, win more, are persuaded less, persuade others more, and otherwise differ significantly from low Machs as predicted in situations in which subjects interact face to face with others, others, when the situation provides latitude for improvisation ... and in situatuations in which affective involvement with details irrelevant to winning, distracts low Machs (p. 312).

Throughout the literature on this topic, high Mach adeptness at manipulating others has been shown to be contingent upon the presence of three situational variables--face to face interaction, latitude for improvisation and arousing irrelevant effect.

Christie and Geis (1970) proposed that the dispositional dissimilarities between high and low Machs which produce differences in behavior and outcome when these situational variables are present are a result of the high Mach's analytical detachment compared to the low Mach's openness to emotional involvement. Experimental evidence indicates that high Machs are substantially less likely to become emotionally involved with other people, with sensitive issues or with saving face under embarrassing conditions. Despite the data which demonstrate that their emotional detachment is only superficial, high Machs appear to be resistant to interpersonal involvements which might interfere with task achievement. Moreover, the aforementioned situational variables are signficantly related to the effectiveness of high and low Machs under experimental conditions, a fact which must be taken into account in any future research (Cristie & Geis, 1970).

Two instruments were formulated to determine an individual's degree of Machiavellianism and to indicate which perceptual, attitudinal and behavioral characteristics are

components of the personality dispositions. Their construction was considered by Christie, the author, to be a contribution to the study of power theory, leader behavior and decision making. Christie (1970) stated that although there is much literature on the characteristics of formally designated leaders, very little material has been generated on those who actually manipulate the followers--those persons who are crucial to the decision making process. The Mach IV and the Mach V Scales were produced to quantify Machiavellianism. The hypothetical role model of the effective manipulator, upon which the scales were devised, is based upon the following assumptions of the high Mach. They include--a relative lack of effect in interpersonal relationships, a lack of concern with conventional morality, a lack of gross psychopathology and low ideological commitment.

In his review, Lake (1973) contended that,

> in over 50 studies conducted by Christie, the Mach Scales have generally shown themselves to be useful for research purposes, being able to differentiate between high and low scorers in behavioral as well a perceptual terms (pp. 142-143).

Numerous studies of predictive validity demonstrated no significant relations between an individual's Mach score and measures of intellectual ability, political preference, anxiety or race relations (Christie & Geis,

1970). Several studies, however, support a relationship between an individual's manipulativeness and his locus of control. The latter variable refers to the degree to which an individual believes that he is personally responsible for rewarding events (regarded as reinforcements) in his life (Rotter, 1966). These investigations demonstrate siginficant relationships between a belief in low personal causality (external locus of control) as opposed to a belief in high personal responsibility (internal locus of control) (Solar and Bruehl, 1971; Russell, 1974; Levinson & Mahler, 1975; Prosciuk & Breen, 1976; Duffy, 1977).

Background of the Problem

The development of Machiavellianism theory coincides historically with the systematic study of industrial management and the study of leadership effectiveness. By the middle of the 20th century, research in industrial administration aimed at making management more productive in terms of human and economic ends, produced an abundance of data. Psychologists, sociologists and management theorists attempted to identify leadership qualities, to pinpoint effective organizational practices and to analyze the power tactics employed by corporate management. By the 1960's, industrial management principles, integrated with leadership study findings, were increasingly applied

in the public school setting in an effort to justify expenditures, make educators accountable, and to increase productivity.

The classification of the personality variable Machiavellianism and the development of the Mach Scales produced an enormous area for exploration in educational administration. Despite the numerous matrices, scales and questionnaires, studies in public school administration produced conflicting and often contradictory results which infrequently led to generalization. The development of the Mach Scales made it possible to measure the attitudinal and behavioral aspects of manipulation--a process by which one individual exercises unobtrusive control over another, ranging in degree of subtleness. Thus, educational researchers are able to probe the manipulative individual's effectiveness as an administrator, to assess the impact of his tactics upon those whom he supervises and to explore his limitations and vulnerabilities.

Thirty-eight studies in Machiavellianism, completed between 1959-69 were compiled and analyzed by Christie and Geis (1970). They probe the cognitive and perceptual differences between high and low Machs and the interaction of those variables with interpersonal and situational factors which contribute to different behavioral responses. The Mach Scales were used to test samples drawn from popula-

tions of educational administrators beginning in the early 1970's.

Although management effectiveness studies were not included in the early research compiled by Christie and Geis, the authors recognized that inquiry regarding the Mach orientation of administrators would be generated. With respect to the Machiavellianism of managers, they proposed that loosely structured situations provide high Machs with more opportunity to manipulate and to initiate structure. The authors refrained from predicting whether a high or a low Mach tends to make a more effective administrator. Rather, they identified those situations in which they predict the superior or inferior performance of high and low Machs, respectively. Christie and Geis hypothesize that the extreme low-Mach tends to become affectively involved with those whom he supervises. Consequently, he often lacks the detachment necessary to depersonalize his relationships with his subordinates when a cognitive analysis is warranted. At the opposite pole, the very high Mach might also prove to be an ineffective administrator. The extreme high Mach's disregard for individual needs, coupled with his unemotional analysis of organizational goals could precipitate morale problems. In conclusion, they speculate that very low Mach's are ill-suited to administrative positions in loosely struc-

tured organizations whereas very high Machs fare poorly in tightly structured organizations (Christie & Geis, 1970).

Numerous applied studies in educational administration which investigate the Mach orientation of public school principals followed between 1973-80. Andrea (1979) conducted one such study. His findings supported the predictions of Christie and Geis regarding the divergent abilities of high and low Mach administrators. Furthermore, he suggested that effective leadership involves not only meeting organizational goals but also meeting the needs of people in the organization (Andrea, 1979).

There has been no known research regarding the Machiavellian orientation of public school principals and the job satisfaction or the lack of job satisfaction they may experience in relation to their Mach orientation. Two studies investigating job satisfaction, job strain and upward mobility of managers were completed in 1972 and 1977 by Gemmill and Heisler. Contrary to their expectations, they found that the greater the Machiavellian orientation of the manager, the higher was his reported job strain and the lower was his reported job satisfaction (Gemmill & Heisler, 1972). Until the present study, the differences between high and low Mach educational administrators' perceptions of job-related satisfaction had not been examined.

Numerous researchers have also studied the relationships between Mach level and locus of control (Miller and Minton, 1969; McClay, 1971; Solar and Bruehl, 1971; Maroldo et al., 1976; Durand and Walter, 1976; Charlier, 1977; Duffy, 1977; Hegarty and Harvey, 1978). All but the last study have uncovered relationships worthy of generalization between manipulation and locus of control. Locus of control refers to the state-like construct (Rotter, 1966) which orders individuals on a continuum ranging from internal (a belief in high personal and social efficacy) to external (a belief in personal and general, social powerlessness). This variable which identifies a perception of power, is complementary to Machiavellianism (i.e., manipulation) which represents a more permanent trait. The thrust of these investigations has been to associate Mach level with a particular type of locus of control (i.e., externality or internality). Heretofore, no available research has attempted to construct a model of Machiavellianism and locus of control which accounts for the four alternative orientations: Low Mach-Internal (LMI), High Mach-External (HME), Low Mach-External (LME) and High Mach-Internal (HMI). Moreover, research is needed which explains the manipulative behavior of groups of individuals based upon Machiavellianism and locus of control and based also upon the job satisfaction or lack of job satis-

faction which may result from the application of these four contingencies (i.e., HMI, HME, LMI, LME) in the educational administration work setting.

The Study and Purposes

This study investigated the Machiavellian orientation, locus of control and the job satisfaction of all of the secondary level public school administrators in Virginia. The principals' level of Machiavellianism was measured by the Mach V Scale (Christie, 1970) for respondents and by the Mach IV Scale (Christie, 1970) for initial non-respondents (verbal respondents). Locus of control as measured by the I-E Scale (Rotter, 1966), and job satisfaction as measured by the Facet-free Job Satisfaction Questionnaire (Quinn and Shepard, 1974) were correlated with selected demographic variables. These included: age, race, place of adolescent residence, formal education level and years of professional experience. Furthermore, the aforementioned variables were correlated with several situational factors which included: level of the school, perceived level of formal control allowed by the school system and the location, enrollment and the grade levels of the secondary school. In order to gauge the principal's perceived level of formal control, two additional demographic questions were devised. These tapped the frequency of classroom

observation and the administrator's perceived level of formal control in his work setting.

Pursuant to these objectives, the study proceeded to collect and analyze the data to determine the relationship between the Machiavellian orientation of the administrators, their locus of control, job satisfaction and selected demographic variables.

Hypotheses

H_1 There are no significant relationships among the following variables:

The administrator's Mach orientation categorized as high Mach (measured by a score > 95 on either the Mach IV Scale for verbal respondents or the Mach V Scale for written respondents) or low Mach (measured by a score ≦ 95 on the Mach IV Scale for verbal respondents or the Mach V Scale for written respondents);

The administrator's locus of control categorized as external (measured by a score > 7.5 on the Rotter I-E Scale) or internal (measured by a score of ≦ 7.5 on the Rotter I-E Scale) and

The administrator's job satisfaction categorized as satisfied (by a score of > 4.0 on the Facet-

free Job Satisfaction Questionnaire) or less than satisfied (measured by a score of $\leq$ 4.0 on the Facet-free Job Satisfaction Questionnaire).

H_2 There are no significant relationships among the following variables:

The administrator's Mach orientation, locus of control, job satisfaction and selected biographical or personal variables which include: sex, age, race, geographic location of adolescent residence, level of formal education, years of teaching experience and years of administrative experience and

The administrator's Mach orientation, locus of control, job satisfaction and selected situational variables related to the work setting. These situational variables consisted of: level of the school, geographic location of school division, frequency of classroom observations, perceived level of formal control allowed by the school division, school enrollment and the grade levels within the school.

Significance of the Study

This investigation was designed to provide support for or rejection of existing Machiavellian theory, based on a particular sample of Virginia public school administrators. It is maintained that the field of educational administration provides a work setting which is appropriate for the study of Machiavellian theory and which is conducive to the production of useful information. This is plausible because the daily duties of the secondary school principal make certain schools reality-based environments in which the three situational factors of high Mach proficiency--face-to-face interaction, latitude for improvisation and arousing irrelevant effect may occur and interact.

A more important consequence of this research was its potential contribution to the study of public school administration. It was the intention of this investigation to obtain information worthy of generalization regarding the Mach orientation and locus of control of a sample of public school secondary level principals. Inkpen (1974) stated that the public school administrator's personal role orientation may be the single most important factor in determining the organizational climate of the schools.

High and low Machs demonstrate distinct skills and abilities related to their particular personality ori-

entations. The assumption is maintained that relatively high and low Machs each have valuable organizational contributions to make as a result of their divergent areas of expertise. Moreover, high Machs significantly outperform low Machs in situations where the three aforementioned conditions occur (Christie & Geis, 1970). The high Mach's propensity for cognitive analysis and his high task orientation may make him an asset to the educational enterprise. His proclivity for innovation and for the development of strategies is compatible with decisive administration. The high Mach's product emphasis (Andrea, 1979), ability to bargain successfully in ambiguous conditions (Benedict, 1972), resistance to the manipulative overtures of others and wide range of interpersonal strategies (Ezell, 1977), ability to gain more money in interpersonally frustrating conditions and his emotional reserve under the condition of task frustration (Weinberg, 1972), may make him valuable to educational management. In contrast, the low Mach's ". . . ever present regard for people . . . humanistic view of the world . . . frequent reference to honesty, sincerity, genuineness and fairness . . ." as well as the emphasis of his ". . . service role in meeting educational demands" (Volp and Willower, 1977, p. 261) make the low Mach an important educational administrator if the profession is to foster democratic ideals.

Of equal significance to school administration was the securing of data concerning the emotional responses of high and low Mach principals to their individual work assignments, measured by their job satisfaction scores. These findings could be of value to members of boards of education and educational executives. More data are needed by school officials to assist them in better understanding the personal adjustment of public school principals to their work. With these insights, school executives would be better prepared to recognize the dispositional and behavioral differences between high and low Mach administrators in order to place high and low Mach principals in positions where their particular proficiencies may be best implemented based upon clinical observation of staff members' behaviors. This would maximize the respective strengths of high and low Mach principals by facilitating their job satisfaction whenever possible.

Application of Mach theory to the scrutiny of staff and organizational needs is consistent with the theories of Getzels, Lipham and Campbell (1957). These authors propose that congruence between individual needs and organizational roles and expectations results in maximum benefit to the enterprise. The resulting advantages in applying such theory to educational leadership could be measured in terms of improved principal morale, less

attrition and a more positive organizational climate.

Definition of Terms

Administrator. The person responsible for the direction and the supervision of a particular attendance unit; the principal. Administrators sampled by this study are secondary principals (including middle school, intermediate school, junior high school and secondary school administrators) who are employed in the Commonwealth of Virginia.

Arousing irrelevant effect. Irrational, emotional distractions which occur in response to situations and/or interaction with others.

External locus of control. The belief that in life, reinforcements are contingent upon complex forces, luck, fate, chance or powerful others (i.e., external causality).

High Mach. Individuals who conform to the Machiavellianism personality disposition. Unless otherwise specified, a subject is categorized as high Mach if his Mach IV Scale score or Mach V Scale score is above the mean or the median for the group.

Internal locus of control. The belief that in life, reinforcements are contingent upon one's own behavior or upon one's own relatively permanent characteristics (i.e., internal causality).

Job satisfaction. The principal's general affective reaction to the job without any reference to specific job facets, i.e., hours, fringe benefits, co-workers, etc. Job satisfaction is also referred to as jobsat.

Low Mach. The personality disposition characterized by an orientation to and involvement with persons, susceptibility to social influence, and to arousing irrevelent effect as well as a tendency to accept and follow the structure imposed by others. Unless otherwise specified, a subject is categorized as low Mach if his Mach V Scale score or Mach IV Scale score is below the mean or the median for the group.

Machiavellianism. The personality variable which orders individuals according to their belief that other persons may be manipulated to achieve one's personal goals and their endorsement of manipulative strategies in interpersonal relations (i.e., manipulativeness).

Manipulation. The exercise of unobtrusive control over the behavior of another person, ranging in degrees of subtleness.

Study limitations

This study is limited by the following:

1. The population is limited to all secondary school principals employed in the Commonwealth of Virginia.

2. The measurement of Machiavellianism, locus of control and job satisfaction are limited by the acceptance of the limitations of the Mach IV Scale, the Mach V Scale, the I-E Scale and the Facet-free Job Satisfaction Questionnaire, respectively. These limitations consist of:

-- The validity and the reliability of the measures.
-- The non-standardization of the Mach IV and Mach V Scales and the I-E Scale.
-- The highly reactive nature of the Mach IV Scale, the Mach V Scale and the I-E Scale.
-- The extent to which respondents answered the questions honestly.

3. The generalization of the sampling data is limited to the extent that the respondents are representative of the overall population.

Overview of the Dissertation

Chapter 1 provided an introduction to the personality orientation, Machiavellianism. A theoretical perspective followed, which included a brief synopsis of prior knowledge as a background. A statement of the problem and the justification served as a logical frame of reference upon

which to base the formulation of two major hypotheses. Chapter 1 concluded with a definition of terms and a statement explaining the limitations of the study.

Chapter 2 presents a profile of the high Mach and a depiction of this individual's cognitive orientation, interpersonal acumen and affective techniques. Research is presented which reinforces the theoretical underpinnings of the Mach IV and V Scales along with those studies which fail to support such relationships. A synthesis of recent relevant applied studies in Machiavellianism as they relate to locus of control, job satisfaction and to public school administration conclude Chapter 2.

The methodology utilized in the study is furnished in Chapter 3. A restatement of the null hypotheses as research questions; a statement on the type of research design; the research instruments; a brief description of the pilot study, population, sample and subjects; the procedures for data collection; as well as an overview of the statistical analyses and data organization, constitute Chapter 3.

Chapter 4 is organized in the following manner. The introduction offers a consecutive summary of the study's progression from beginning to conclusion. A two phase pilot study, reported in detail, is followed by a short recapitulation of the investigation's objectives and the

analytic design. Descriptive analysis of the results include the examination of the respondent sample, broken according to the demographic components in terms of frequencies, percents, means and standard deviations. A restatement of the null hypotheses precedes an account of the outcome of the statistical analyses which test for the relationships or the lack of relationships predicted by the research questions. The findings of the Stepwise Multiple Regression Analyses and t tests, presented for the written respondent and verbal respondent studies, respectively, comprise the remainder of Chapter 4.

Chapter 5 presents a review of the findings in synthesis format and enumerates the succeeding conclusions. A discussion of the recommendations for future research are profferred, concluding Chapter 5.

CHAPTER 2

Review of Related Literature

Chapter 2 is organized in the following manner. Section one provides a profile of the high Mach. Included within this portrait is a depiction of this individual's cognitive orientation, interpersonal style and instances of Mach-related proficiencies. Those studies which empirically support the attitudinal and behavioral theories of the original authors of the Mach assessment instrument are contained in section one along with research which fails to support such relationships. The remainder of Chapter 2 is arranged as follows: sections two and three synthesize relevant applied studies as they relate to the locus of control and job satisfaction, respectively, and section four presents the results of recent studies in education.

A Profile of the High Mach

Because of the reactivity association with its nomenclature, the personality orientation, Machiavellianism, has frequently been confused with a political philosophy which is in conflict with democratic principles. Kanner (1974) cited numerous negative reactions to the political theory of Niccolo Machiavelli which contribute to a misunderstanding of Machiavellianism, in the experimental sense.

The degree to which an individual manipulates others, his Mach level, has therefore been confused with the espousal of fascist beliefs. Stereotypical assumptions regarding high Mach behaviors persist despite empirical evidence to the contrary. Christie (1970) stated, "The very mention of the term sets off a varied range of associations, most of which are not congruent with research results, among otherwise sophisticated researchers" (p. 35-36).

The Mach Scales were correlated to numerous psychometric and personality tests in order to determine whether high and low group scores on scales which tap manipulativeness could be explained by other factors such as authoritarianism, anxiety, or by one's political philosophy. A lack of correlation between the aforementioned measures and the Mach Scales refuted much of the common beliefs which were associated with or attributed to persons who manipulate others. Correlations between Machiavellianism and measures of intellectual ability, anxiety or political preference were unsupported (Christie, 1970).

Closely akin to authoritarianism, dogmatism and its relationship to Machiavellianism was investigated by Primavera and Higgins (1973) and Cryns and Finn (1973). Steininger and Eisenberg (1976) found that those who score higher in conservatism also score higher on dogmatism and

Machiavellian measures. Earlier, Primavera and Higgins (1973) discovered a significant relationship between dogmatism and Mach level. Cyrns and Finn (1973) held that student activism was associated with low authoritarianism, low dogmatism and low Mach score.

Contrary to expectations, Cole (1973) found that high Machs admitted to more participation in political demonstrations. No significant relationships between Machiavellianism and political extremism were discerned, however. This was attributed to the overall conservatism of those students sampled. These findings are in contrast to those of Gold, Friedman and Christie (1971). As anticipated, high Machs scored low on persuasibility and student activists were identified as low Machs who scored high on persuasibility. Likewise, Stone (1976) suggested that Mach level and radicalism are inversely related.

Conflicting research results indicated that the relationship between Machiavellianism and need achievement is still an open issue. Smith (1976) using the Mehrabian Achievement Motivation Questionnaire, found a significant negative correlation between Mach level and the need to achieve. Turner and Martinez (1977) examined the occupational attainment and unrelated to income attainment. They suggested that blue collar workers may underachieve

and be penalized by society in proportion to their Mach level. For women, Machiavellianism appeared to have a "facilitative effect" upon status attainment (p. 335).

Touhey (1973) encountered a peculiar interaction between Mach level, intelligence and socio-economic mobility, similar to the findings of Turner and Martinez (1977). Touhey ascertained that males who scored highly on both the Otis Intelligence Test and on a modified Mach Scale made the highest "intergenerational mobility in occupation status" (p. 34). The least upward mobility was reported by subjects who scored in the low intelligence--high Mach quadrant. Touhey (1973) inferred that high intelligence may enable the high Mach to identify situations where Mach tactics are effective. However, for the low intelligence male and particularly the low intelligence, low socio-economic status male, Machiavellianism appears not to be advantageous.

Steininger and Eisenberg (1976) discovered that high Machs, unlike their low Mach counterparts, have a negative view of themselves and others. For men, they found an "overlap" between dogmatism and Mach level which was attributed to an unflattering view of other people. Because the high Mach females were less willing to derogate

others, it was inferred that cultural pressure forces high Mach women to rationalize their negative opinions of others whereas high Mach males feel no such cultural pressures.

Similarly, Levinson and Mahler (1975) discerned sex-linked differences between high Mach males and females with respect to their self image. These high Mach females revealed that they regarded their Machiavellian attitudes toward others as a consequence of a personal flaw in their own character. The high Mach males demonstrated no such lowered self-esteem. Both Levinson and Mahler (1975) and Steininger and Eisenberg (1976) indicated that cultural pressures are exerted on the high Mach female as a result of her cynical view of others and she in turn regards herself as less worthy.

The validation studies revealed that the high Mach consistently demonstrates an interpersonal advantage over the low Mach in the presence of three situational parameters which include face-to-face interaction, latitude for improvisation and arousing irrelevant affect (Christie & Geis, 1970). Were it not for the social superiority which high Mach subjects display under these three conditions in studies primarily aimed at validating the Mach

IV and Mach V Scales' ability to tap manipulativeness, the personality orientation might have otherwise been disregarded by researchers. The validation studies, therefore, served a twofold purpose. First, they supplied ample evidence to support the theoretical jump made by the scales' authors. That is, that a subject who endorses Machiavellian precepts actually manipulates more frequently, ingeniously, successfully and consequently, enjoys manipulation more than does the low Mach counterpart (Geis, Christie & Nelson, 1970). In addition, the validation studies confirmed the theoretical framework of the high Mach's cognitive and behavioral style which thereafter was applied in numerous work settings. Ezell (1977) stated,

> The framework supports and legitimizes the existence of overt manipulative behaviors that exist in all individuals to varying degrees and which are reinforced or extinguished depending upon the system feedback and subjective expected utilities (p. 171).

The validation studies were aimed at dichotomizing the behaviors of individuals based upon their Mach Scale scores. Groups of subjects, usually undergraduate students of psychology, were tested. Depending upon their score on the Mach IV Scale and later the Mach IV and V Scales, high and low Machs were distinguished by sepa-

rating the scores at or above the means (the high Machs) from those who scored below the mean (the low Machs) or by similarly dividing the distribution using a median split.

The dichotomizing of high and low Machs by separating the scores at the mean or above and below the median precipitates a certain methodological problem which is addressed here. The Mach IV and the Mach V Scales are not standardized. There are no meaningful breaks, therefore, between groups of high and low Mach scorers across a variety of studies. This difficulty is not exclusive to Machiavellianism. The phenomenon also presents methodological difficulties for other personality variables which should be acknowledged. As a result, across a number of studies, upper low Machs and lower high Machs may resemble one another. This unavoidable inconsistency may account for conflicting results across a number of studies which prevent meaningful generalization with respect to certain hypothesized relationships. It is not the intention of this methodological aside to attempt to correct for this difficulty. Rather, it is appropriate to address this particular limitation which is inherent in any studies which measure personality dispositions with unstandardized measures.

In spite of the aforementioned difficulty resulting from a lack of standardization of the Mach IV and V Scales, the validation studies successfully generated empirical data worthy of generalization. In one such experiment in which high and low Machs played the role of the experimenter assigned to administer a personality test to a confederate posing as a student, the high Machs confirmed the supposition that they manipulate more frequently, more creatively and that they derive more satisfaction from their manipulations than do low Mach subjects (Geis, Christie & Nelson, 1970).

In a study in which subjects were asked to distract a confederate acting as a test-taker, McLaughlin (1970) confirmed the findings of Geis et al. (1970). When high and low Mach distractions were compared, it was concluded that high Machs employ significantly more manipulations including threats and disparaging comments. Furthermore, high Machs expressed greater desire to play the role of experimenter than low Machs and they "seemed to be less subject to the ethical qualms which are assumed to restrain low scorers from interpersonal manipulation" (p. 114).

In another experiment in which high and low Machs were induced to cheat by a confederate acting as an experimen-

tal subject, high Machs used eye-contact as a strategy of concealment while denying plagiarism more than did low Mach subjects (Exline, Hickey & Gumpert, 1961). The same investigation disclosed that high Machs resist the confederate's attempts to implicate them in cheating and lie more plausibly after being accused.

Falbo (1977) reinforced the findings of Exline et al. (1961) concerning facial manipulation in order to affect the target person. She commented that high Mach scorers admit the use of deceit "which includes flattery, lying or otherwise conning the target" (p. 546).

Harrell and Hartnagel (1976) ascertained that high Machs were significantly more apt to steal, to take advantage of a trusting supervisor and to "cover up" more than low Machs. Similarly, Blumstein and Weinstein (1969) theorized that high Machs utilize duplicity, opportunism and guile in a manner unrestrained by traditional morality.

When placed in a situation designed to produce cognitive dissonance (i.e., whereby one's actions are incongruous with one's beliefs) high and low Machs were induced to cheat by an attractive and unattractive partner (Geis, Bogard & Levy, 1967). The resulting attitude changes of

high and low Machs, following the cheating experience, indicated that high and low Machs seem to respond to two discrete theories of attitudinal change. Due to their emotional detachment, the high Mach's attitudinal change occurs in accordance with incentive theory while the low Mach's emotional investment in their partner indicate that their attitudinal changes conform to dissonance theory (Geis et al., 1967). A replication by Bogart (1968) revealed that high Machs cheat more frequently than low Machs. However, consistent with the aforementioned research by Geis et al. (1967), the high Machs complied with the attractive partner more often than they refused and the low Machs did not discriminate between the attractive and the unattractive partner.

Burgoon, Michael and Miller (1972) reported that when dissonance producing messages are received by high and low Machs under low-justification conditions, low Machs admit significantly greater self-persuasion than the high Machs who in turn report significantly more self-persuasion under high justification conditions. This supports the findings of Geis et al. (1967) and Bogart (1968). Burgoon et al. (1972) discuss the high and low Machs' responses to divergent attitudinal change models. They commented,

> Given high Machiavellianism, self-persuasion is more likely to occur under conditions calculated to produce positive incentives; when Machiavellianism is relatively low, dissonance producing circumstances appear to exert strong pressures for attitudinal change (p. 370).

In a follow-up study, Burgoon, Lombardi, Burch and Shelly (1979) reaffirmed the notion that the type of persuasive messages which predict attitudinal change differ for high and low Machs (p. 123). As expected, high Machs were found to be persuaded by authority-based assertions while low Machs were more receptive to non-authority based persuasion attempts. Burgoon, et al. (1979) speculated that the high Mach may actually enjoy communicating with persons of authority more than does the low Mach.

Inconsistent with the previous findings, Laux (1975) held that high Machs were more willing to comply with requests, regardless of the justification, for counter-attitudinal behavior. They also displayed less self-persuasion than did the low Machs.

Harris (1966) determined that high Machs have a negative, cynical view of others and that they also are willing to admit to socially undesirable statements about themselves. This finding prompted a number of investiga-

tions in Machiavellianism concerning aggression and related behaviors. Christie and Geis (1970), in an overview of their experimental studies stated, "In no instance that we can recall have high Machs appeared hostile, vicious or punitive towards others" (p. 306-307). Guterman, (1970) utilizing a modified Mach Index and six items from the need aggression scale of Edward's Personal Preference Schedule (EPPS) reported otherwise. He stated, "The higher a person is on aggression, the more likely he is to be Machiavellian" (p. 30). Touhey (1973) found a significant correlation between Machiavellianism and reported difficulties in self-control and aggression for men. For women, a significant relationship between Mach level and control difficulties was supported but no correlations between Machiavellianism and aggression were determined. Touhey (1973) commented that self-control difficulties in high Mach men ". . . may offset their capacity to manipulate others as an avenue to upward social mobility" (p. 650).

Perhaps self-reports of aggression are less than optimal when attempting to measure behavioral manifestations of aggression as related to Mach level. Gaeblein (1973) set up an experiment in which 40 high Machs and 40 low

Machs were instructed to suggest the intensity of electric shocks to be administered to an "opponent" by a confederate partner. Gaeblein stated, "Neither the main effect of Mach nor the interaction of Mach with the blocks, cooperation or money, approached significance at the .05 level" (p. 392). Wasserman (1974), in another electroshock experiment, found that in a dissimilar attitude condition (in which the high Mach was not induced to find the confederate partner attractive), high Machs shocked more intensely than their low Mach counterparts. Contrary to expectations, the condition " . . . in which attitude similarity manipulation differentially induced attraction toward the confederate . . . low Machiavellians shocked more intensely than the high Machs" (Wasserman, 1973, pp. 50-54). It is noteworthy that in neither instance were actual electroshocks administered. However, in both instances high and low Mach subjects were led to believe that their decisions caused shocks of varying intensity and duration to be administered to an unseen human subject. Wasserman (1974) provided a thought-provoking understatement which is disturbing to professionals in education and psychology who are dedicated to the dignity and worth of the individual and to society. He stated,

"Only two subjects who came to the laboratory refused to shock the learner" (p. 46).

Both of these studies support the supposition of Christie and Geis (1970) that high Machs are no more cruel than low Machs, or more willing to use direct aggression. Geis and Christie (1970) added, "Our hunch is that (high Machs) would be more likely to use hostility instrumentally, to achieve some desired goal . . . and, . . . they are adept at getting what they want from others without overt hostility" (p. 307). Blumstein and Weinstein (1969) indicated that low Machs attempt to correct an injustice (retaliate) more than high Machs do, supporting Christie and Geis (1970). On the basis of the evidence available, it appears that although the high Mach is more apt to admit his hostile feelings than is the low Mach, there is little reason to believe that he will act on his aggressive impulses in socially unacceptable ways any more than will the low Mach. On the other hand, there is some evidence to indicate that a low Mach whose sense of fairness has been violated, may in fact, retaliate.

Frustration theory was investigated by Weinberg (1977) in order to examine the nature of situations which would frustrate high and low Machs. Relative to the previous

discussion concerning Machiavellianism and aggression, Weinberg (1977) viewed aggression as one response selected by individuals from a repertoire of "instrumental acts" which may include fixation, regression, sublimation, rationalization, depression or increased motivation. Furthermore, these responses are chosen in "habit hierarchies" which vary with each person (pp. 15-18). It was hypothesized that due to their respective task and interpersonal goals, high and low Machs would respond differentially to goal and person-oriented frustration attempts. It was determined that high Machs experience greater frustration in task related frustration, use more repression than low Machs (except in the condition of interpersonal frustration) and that low Machs demonstrate " . . . a significantly higher rise in direct aggression" (Weinberg, 1977, p. 66).

Numerous researchers have investigated the contention that Machiavellianism and psychopathology are related. Smith and Griffith (1978) contended that psychopathology and extreme Machiavellianism are "converging dimensions" (p. 258). Since the high Mach is rational, these authors viewed the psychopath as the "logical extreme" based upon this society's values (Smith and Griffith, p. 258).

Christie and Geis (1970) maintained, however, that in order to manipulate effectively, the high Mach must be relatively free of emotional pathology. Other research supports Christie and Geis' (1970) position. Hacker and Gaitz (1970) asserted that the Mach V Social Desirability Score measures a "non-neurotic tendency" and that ones' Mach level is positively associated with rational actions such as making suggestions and giving lucid direction (p. 96). Schwendiman (1971) found that "Machiavellianism and psychopathic deviation were not related" (p. 61). DiMarco (1973) concluded that high Machs and self-actualizing persons share flexibility of values and a sensitivity to their own needs and to the needs of others. Moreover, he asserted that high Machs are self-accepting despite their admission of personal weaknesses. Jambor (1978) however, utilizing the Mach V Scale and subtests of the Person Orientation Inventory, found no significant relationships between actualization and Machiavellianism or existentialism and Mach level (p. 100). In the light of the aforementioned studies, it appears that Machiavellianism is unrelated to gross psychopathology although the extreme high Mach might be perceived as pathological by those who deplore his tactics (Christie & Geis, 1970, p. 340).

The preceeding discussion of hostility, aggression, frustration and psychopathology was offered in order to dispel the stereotypical labels which have indiscriminately been applied to individuals who manipulate others, when empirical evidence supports their rejection. The thrust of the prior arguments has therefore been intended to delimit those qualities which are not necessarily a function of one's Mach level. It was advanced therefore, that based upon the available data, the high Mach is no more overtly hostile or more prone to psychopathology than is the low Mach. His behavior may reveal an aggressive interpersonal strategy in bargaining, in the winning of points or money, or in order to initiate and control structure. However, it is improbable that the high Mach is more predisposed to direct aggression (in the clinical sense) in response to frustration than is the low Mach.

The aim of the ensuing paragraphs, conversely, is to sketch a profile of the high Mach's cognitive orientation. Labeling this orientation "the cool syndrome" Christie and Geis (1970) asserted that the high Mach is unresponsive to emotional involvements and that he is equally detached about his own attitudes and behavior (p. 294). They commented,

> In every laboratory study in which implicit assumptions concerning human relations, social values or ethical consi-

> derations could have interfered with task achievement, the high Mach appears to ignore them and operate instead according to the explicit cognitive definition of the situation (p. 301).

Guterman (1970) explained this phenomenon thusly. He proposed that one may view Machiavellianism from the perspective that stresses either the emotional detachment of the high Mach or his lack of concern for conventional morality (p. 4). The brief discussion which follows, makes no attempt to separate these facets.

The high Mach is depicted as an individual who rarely appears to be manipulating, follows self-directed goals, disregards the affective states of others, uses logic, approaches situations in terms of their perceived possibilities and acts in a manner intended to produce results (Christie & Geis, 1970, p. 350).

Abrahamson (1973) used the interpersonal tactics subscale from the Mach V Scale along with a counseling effectiveness rating scale with counselors in an interview rating situation. He found a large negative correlation between Mach tactics and empathy. Collaterally, Abrahamson concluded, that "It is unlikely that the high Mach individual who chooses to specialize in counseling will be effective with his clients" (p. 349).

These findings are in direct conflict with Klein (1969). He tested medical residents specializing in

internal medicine and psychiatry. The personality battery included Mach IV and V Scales, an alienation and intolerance of ambiguity measures and the Social Desirability Scale (MCSD) by Crowne and Marlow (1964). The psychiatry residents scored higher in Machiavellianism than did the internists. Klein (1969) reported that the high Machs (the psychiatrists) were less alienated and less authoritarian. However, contrary to expectations, they did not report more tolerance for ambiguity. Klein stated,

> In essence, psychiatrists (the high Machs) would appear to be individuals who . . . demonstrate a relatively close correspondence between personality, social interest and career choice which involves optimism and a commitment to dealing with unknown factors in a relatively amorphous area of intra and interpersonal dynamics (p. 221).

Okanes (1974), using the Rokeach Value Survey (1971) with the Mach V Scale, found a negative correlation between the equality, forgiving and honest dimensions of the Scale of Values and the Mach V Scale and a positive correlation between Mach level and the imaginative dimension of the scale.

Lamdam and Lorr (1975) discovered a negative correlation between Machiavellianism and the following dimension on the Interpersonal Style Inventory (Lorr and Youniss, 1973); expediency, withholding of help and mistrust and an inverse relationship between Mach level and defensiveness

(p. 302).

Much research has explored the relationship between bargaining effectiveness and Machiavellianism. In a three person bargaining coalition game in a conflict of interest situation, it was hypothesized that the high Mach would be more skillful at manipulating others and hence, he would obtain more of the rewards (Geis, 1964). A significant correlation was found between Machiavellianism and success at interpersonal manipulation. When more ambiguity was introduced into the bargaining situation, the average difference between high and low Mach scorers doubled. Additionally, both low and middle Machs in the bargaining triads directed most of their bargaining attempts to the high Mach and not to each other. In the bargaining process, low and high Machs revealed traits which were supported by subsequent research. Low Machs were observed to be more ego-involved while high Machs concerned themselves with the task. Moreover, low Machs appeared to respond to the value implications in the situation; high Machs were more attentive to a rational definition of the situation. When the low Machs appealed to fairness, they were disregarded by both the high and the middle Machs.

In another study, seven triads containing a high, middle and low Mach subject were instructed to form a coalition of two in order to divide the ten dollar prize.

The high Machs won, middle Machs drew and the low Machs lost (Christie & Geis, 1970). This supported the findings of Geis (1964). As predicted, when the stake was changed to currency en lieu of points, the high Mach was even more successful at out-negotiating the low Mach. Low Mach again, appealed to fairness.

In research which was supported by the National Science Foundation, a variation of the Prisoner's Dilemma game was conducted by Christie, Gergen and Marlowe (1970). Contrary to expectations, the high Machs adopted a cooperative strategy with the introduction of money into the game trials. High Machs became proportionately less exploitive as the rewards changed from points to pennies and finally to dollars.

Similarly, Gross (1975) remarked that cooperative behavior is a frequently utilized tactic by high Machs in order to gain control of a situation by feigning agreement with other group members.

Geis, Weinheimer and Berger (1966) conducted a seven person group game intended to test bargaining effectiveness in a low emotional involvement condition and in a high emotional involvement condition. It was anticipated that the high Machs would win in the high involvement condition but not in the low involvement condition as a result of the low Mach's distractability by irrelevant

affect. As expected, the high Machs out-bargained the low Machs in the emotional condition but they were no more effective in the neutral condition. It was further deduced that high Machs have a competitive advantage over low Machs in situations which are perceived as either more serious or more ego-involving.

Blumstein (1973) noted that interpersonal strategies differ depending upon the situation and the degree of Machiavellianism of the subject. He found that in the audience condition, high Machs ingratiate more, assume the identity in which they are cast and appear more comfortable in their role.

Cronen and Mihevc (1974) devised an experiment to ascertain whether Mach level changed following two types of experiences; conflict and non-conflict situations. Moreover, they tested the assumption that manipulative success and decision satisfaction would be significant predictors of Mach level change. Results indicated that in high conflict groups only, manipulative success proved to be a significant predictor of change.

Researchers have attempted to isolate the familial and societal factors which are responsible for the onset of Machiavellianism. Their lack of consensus indicates that this issue is both complex and unresolved. Contradictions among the findings of such studies prohibit generalization

at this time. Christie and Geis (1970) pointed out that an increase in Mach level beginning at age 10 and continuing through adolescence until it peaks approximately at age 17 (Christie & Geis, 1970).

Braginsky (1970) found an inverse relationship between the Mach level of the mother and child. She further held that the manipulative success of the child is inversely related to the Machiavellianism of the parents. Moreover, she speculated that high Mach children practice strategies at home with their naive parents, thereby increasing their effectiveness.

Kraut and Price (1976) found a positive relationship between the Mach level of the parents and their offspring's success at deceiving others but not between parental Mach level and the child's ability to recognize others' attempts at deception. This dualism prompted them to theorize that the child's manipulative behavior and belief system are separately learned (Kraut & Price, 1976).

Guterman (1970) executed a lengthy analysis of the origins of Machiavellianism including a detailed account of Freudian personality development, the theory of the Looking Glass Self (Cooley, 1956) and the macrosociological perspective characterized by the theories of Gemeinschaft and Gesellschaft (Toennies, 1957). Guterman

(1970) correlated the development of the high Mach personality with several family and societal factors. Consistent with psychoanalytic theory, "the greater the rapport the respondent had with his parents and the stricter they were, the less likely he is to be Machiavellian" (p. 129). Congruent with this finding, those subjects who perceived their parents as high Machs were more apt to be high Machs. Contrary to psychoanalytic theory, however, a positive relationship between parental punitiveness and Machiavellianism was discerned (Guterman, 1970, p. 129). Moreover, compatible with the Looking Glass Process (Cooley, 1956), Guterman (1970) held, the greater a person's need for social approval and the greater his proclivity for sympathizing with others, the less inclined he is to be Machiavellian (p. 129). Among those subjects whose family environment fostered high Mach attitudes, Guterman (1970) discovered a positive relationship between the urbanization of the locale in which the respondent resided during adolescence and his Mach level.

Aforementioned research suggests that there are attitudinal differences between high Mach males and females which may account for differences in their socio-economic statuses when Mach level is mediated by intelligence. There is also evidence to indicate that males and females possess divergent repertoires of inter-personal strategies

which produce the desired manipulations in a variety of social circumstances. Singer (1964) found a positive relationship between Machiavellianism and student grades when ability was held constant for males, but not for females. Additionally, later born males were more manipulative than females, and a significant partial correlation between attractiveness and grades was found for first born females.

Ames (1979) held that overall grade point averages were not significantly correlated with Machiavellianism. However, when grouped by the Bem Sex Role Inventory, a significant positive correlation was discovered between Mach level and grade point average for masculine-oriented females. Conversely, a significant negative correlation between Mach level and grade point averages for traditionally female-oriented females was obtained. However, in a study of bargaining effectiveness under the conditions of low and high emotional salience among an exclusively female sample, one researcher questioned the utilization of the Mach IV and V Scales with women (Rosenthall, 1978).

Domelsmith (1978) investigated the relationship between Machiavellianism and self-disclosure for male and female subjects. With males he found a negative correlation between Mach level and the willingness to use self-

disclosure as a strategy. The reverse was true for high Mach females. These results led to the supposition that self-disclosure may be an effective interpersonal strategy for high Mach women but not for high Mach men (Domelsmith, 1978).

Machiavellianism and Locus of Control

The earlier synthesis of studies which correlate Machiavellianism with other measures of personality omitted one particular variable, locus of control. This section of the review of relevant literature is delimited to include only those studies which investigate locus of control in relation to Machiavellianism. Rotter (1966) defined locus of control as follows:

> When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control. p. 1.

McClay (1971) found a significant relationship (r = .41, $p < .05$) between external locus of control and Machiavellianism (p. 41). He added, "Internals score signifi-

cantly lower in Machiavellianism than externals . . ." (p. 43).

Minton (1972) predicted that an individual with an internal locus of control is likely to be an "active, effective, influential and initiating person" in contrast to the external who, he generalized, has a passive orientation to his environment. Superficially, the descriptors for the internal would appear congruous with the high Mach personality variable. The research indicates otherwise, however. Christie and Geis (1970) reported a correlation of +.43 between Mach IV Scale and external locus of control. The remaining studies corroborate this finding.

Solar and Bruehl (1971) tested three independent samples using the Mach IV Scale and I-E Scale (Rotter, 1966). These researchers viewed locus of control and Machiavellianism as two divergent models of power theory. They explained that logically, a high Mach, similar to the high internal, would "exert more personal control over the environment" than does the low Mach subject (p. 1079). In all three samples, externals were significantly higher Mach than were the internals (Solar & Bruehl, 1971). They surmised "that high Mach subjects manipulate others out of a feeling of powerlessness and thus they should actually endorse external rather than internal beliefs in reinforcement" (p. 1080). Scrutiny of the internal items of

the I-E Scale reveal that the internal shows a preference for hard work and traditional values, for earning the respect of others and for honesty in interpersonal relations. The high Mach however, admits to flattery, lying, deviousness and deceit (Solar and Bruehl, 1970, p. 1081). Although the ends for both high Machs and high internals may be equal, the means by which they achieve these ends are dichotomous. Furthermore, "The extremes of internality and Machiavellianism may be mutually exclusive . . ." and ". . . external control subjects . . . are individuals who see themselves as powerless in a world ruled by chance, fate or luck" (Solar and Bruehl, 1970, p. 1081).

Prociuk and Breen (1976) tested 97 males and females using the Mach V Scale, the I-E Scale and dimensions of the Internal Control, Powerful Others and Chance Scales (Levinson, 1974). A significant negative relationship between the Mach V Scale and external control as measured by the I-E Scale was obtained for males only. This confirmed an earlier study by Russell (1974). Additionally, Prociuk and Breen (1976) held that Machiavellianism appears to be related to a specific type of external control (i.e., a belief in powerful others). This finding is in contrast to the conclusions of Levinson and Mahler (1975) who maintained that a significant positive correlation exists be-

tween Mach level and the Chance Scale. They stated, "Males scored high on Machiavellianism when they perceived that the world is relatively disorganized and that relationships between one's efforts and events are rather random" (Levinson & Mahler, 1975, p. 209).

The available research clearly supports a relationship between Machiavellianism and external locus of control based upon group scores. Solar and Bruehl (1971) stated, ". . . Machiavellianism is not merely another name for externality" (p. 1081). These researchers viewed Machiavellianism and locus of control as two divergent power models. Whether the high Mach's externality is based upon a belief in luck, fate, change or a belief in powerful others, is not clear. In addition, it was expected that high Mach individuals may range in degree from internal to high external locus of control. Similarly, a low Mach scorer may also report high internal to high external locus of control. However, when groups of high and low Mach respondents were examined, it was predicted that high and low Mach groups would report high external and high internal beliefs, respectively.

A hypothetical model demonstrating this relationship is provided at this point (Figure 1). The x-axis represents Machiavellianism, ranging in degrees from low to high Mach, cut at the median. The y-axis represents locus

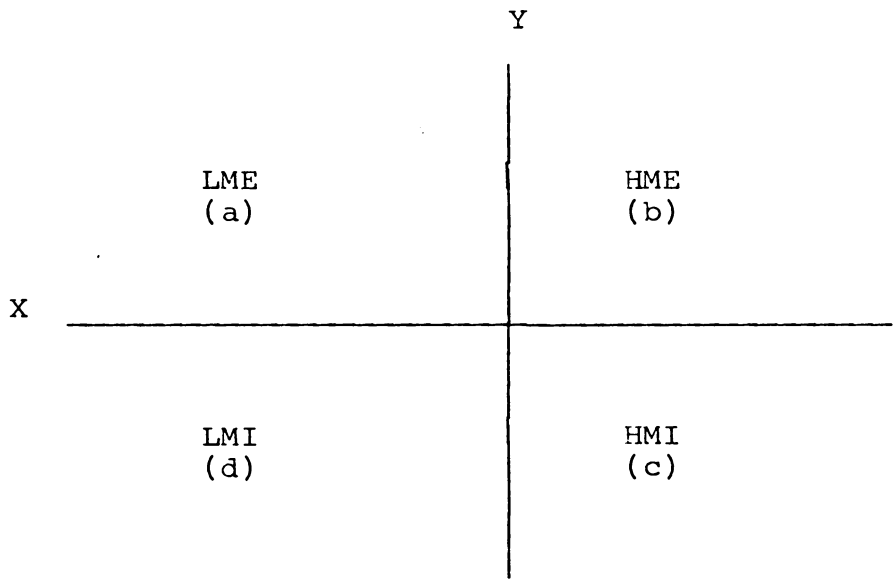

Figure 1

Mach-IE Matrix

of control. Locus of control is divided into quartiles, ranging in degrees from extreme internal to extreme external. This variable, unlike Machiavellianism, is normally not divided dichotomously into two discrete categories. Machiavellianism, however, is divided into high and low Mach categories, split at the median or mean in virtually all the existing research. The few studies which have exclusively examined the extremes in Machiavellianism (as measured by one or more standard deviations above or below the mean) have obviously first cut the distributions into high and low Mach categories. The plethora of locus of control literature indicates that this particular variable has not routinely been divided similarly.

By drawing a vertical line through the x-axis at the Mach median and a horizontal line through the y-axis at the second quartile (through the perpendicular erected at the Mach median), four quadrants are constructed. These quadrants represent the possible locations of any single response on both the Mach V and the I-E Scale (Figure 1). Quadrant A indicates low Mach-External (LME), Quadrant B represents high Mach-External (HME) and Quadrants C and D illustrate high Mach-Internal (HMI) and low Mach-Internal (LMI) respectively.

It was maintained that the conceptualization of the passive external (Minton, 1972) would fit the description

of the scorer who falls within Quadrant A; low Mach-External (LME) (Figure 2). It is likely that LME would perceive his destiny to be under the control of fate or predestination. Theoretically, he would not adopt a manipulative strategy since he would feel that he is incapable of effecting change. Logically, low Mach-External would therefore appear passive to others.

High Mach-External (HME) is the scorer who falls within Quadrant B. Theoretically, he is the stereotypical external who utilizes ambiguity to his advantage. HME perceives that society is based upon the principle of Social Darwinism and in order to survive, he compulsively attempts to exercise control. Solar and Bruehl (1971) stated, "In coping with external expectancies, Machiavellian attitudes would therefore be an almost necessary defense" (p. 1081). HME (high Mach-External) differs subtly from HMI (high Mach-Internal). While HMI manipulates assertively, HME manipulates from a defensive orientation in order to overcome his feeling of powerlessness, congruent with the findings of Horney (1937).

The high internal who corresponds to the conceptualization of the self-actualizing internal (Minton, 1972) would fall into Quadrant C; high Mach-Internal (HMI). Theoretically, HMI would adopt a manipulative strategy in order to accumulate power. In all likelihood, he would

LOW MACH EXTERNAL (LME) (a) - passive - feelings of powerlessness - controlled by fate	HIGH MACH EXTERNAL (HME) (b) - defensive manipulation - belief in Social Darwinism - extreme=psychopathology - stereotypical high Mach
LOW MACH INTERNAL (LMI) (d) - neither manipulative nor passive - open - live and let live philosophy - stereotypical low Mach easily carried away by effect	HIGH MACH INTERNAL (HMI) (c) - self-actualizing internal - belief in powerful-others - assertive manipulation

Figure 2

Mach-IE Matrix with Traits

profess a belief in key-power-people as suggested by Rotter (1966). Similar to HME, high Mach-Internal would utilize manipulation as a coping mechanism, in order to defend himself from "a hostile and politically unresponsive world" (Duffy, 1977, p. 217). Understandably, HMI would employ manipulative strategies in order to become politically efficacious, i.e., a "powerful other" (Rotter, 1966, p. 2). Unlike HME, HMI hypothetically utilizes manipulations assertively, with a strong belief that he can become an agent of power and control.

Proscuik and Breen (1976) stated, "Internals who feel that they can gain control of their environment at will would be neither Machiavellian nor passive" (p. 141). These respondents would hypothetically fall into Quadrant D, low Mach-Internal (LMI). LMI would have no need to adopt a Machiavellian strategy since a simple directive could effect the desired outcome. It was expected that the majority of the responses would fall into Quadrants B, high Mach-External; and D, low Mach-Internal.

It was the contention of this thesis that Machiavellianism is behavioral response which is adopted as a coping mechanism in relation to particular locus of control contingencies. This view differs from that of Solar and Bruehl (1971) in which Machiavellianism and locus of control were regarded as mutually exclusive power models.

The quadrant paradigm may explain why some high Machs profess a belief in chance (Levenson and Mahler, 1975) while others acknowledge a belief in powerful others (Proscuik and Breen, 1976). Although previous researchers have investigated locus of control and its relationship to Mach level, and other investigators have probed the societal and familiar factors which appear to precipitate the development of manipulative strategies, heretofore no known studies have proposed a model of Machiavellianism in relation to locus of control. It was expected that Quadrants B (high Mach-External) and D (low Mach-Internal) would contain the greatest number of cases and that Quadrants A (low Mach-External) and C (high Mach-Internal) would contain the least number of cases.

Machiavellianism and Job Satisfaction

Two studies which examine the relationship between Machiavellianism and job satisfaction have been found. Gemmell and Heisler (1972) conducted a study to ascertain the relationship between "Machiavellian orientation and several job related correlates among 150 manufacturers in a large manufacturing firm" (p. 51). They determined that Mach orientation is positively associated with job strain and lower perceived opportunity for formal control and negatively associated with job satisfaction (p. 51).

Heisler and Gemmell (1977) repeated their original study with two independent samples consisting of 34 managers of a small midwest manufacturing company and 52 government agency managers representing three administrative levels. Both the follow-up and original investigations utilized Mach IV Scale, and a job strain and job satisfaction measure adapted from those by Kahn et al. (1964).

The latter study corroborated the results of the first investigation. Machiavellianism was "consistently related to job satisfaction and job strain across a variety of organizational settings" (p. 592).

Gemmell and Heisler (1971) commented that there have been few empirical studies dealing with the Mach orientation in contemporary organizations. Presently, there are no available studies in educational administration which have explored the relationship between Machiavellianism and its relationship to job satisfaction.

Machiavellianism and Education

Black (1973) and Kanner (1974) explored the relationship between the Mach orientation of public school principals and its relationship to teacher perceptions of the Initiating Structure and Consideration dimensions of the Leader Behavior Description Questionnaire (LBDQ XII)

and the openness of the school climate as measured by the Occupational Climate Description Questionnaire (OCDQ). Additionally, the teachers' perceptions of the principals' authoritarian behavior, the principal's effectiveness and his detachment were tapped. Black (1973) sampled elementary administrators and Kanner (1974) measured secondary school principals. The latter study may therefore be regarded as a replication of the former one. Both investigations revealed a lack of significant relationships between the major variables under inspection. However, elementary schools with open climates were inversely related to Mach orientation and the authoritarianism of the principal (Black, 1973, p. 4). Furthermore, a significant relationship between one demographic variable and Mach level was discerned. "Cosmopolitans" were more Machiavellian than "local" school administrators (Black, 1973, p. 4).

Gross (1975) probed the influence of the Mach orientation of male professional employees in higher education and its relationship to male student perceptions of the employee. The Mach IV Scale was administered to a sample of 28 student-service workers in a large university. One hundred eighty-four questionnaires containing the Mach IV Scale were also returned from students who saw the male professionals on school-related business. The Mach V

Scale was used as a posttest. No significant relationships were found between high and low Mach university employees as perceived by high and low Mach students on the variables of personalism and competence (p. xii). Low Mach employees were perceived as less cognitively oriented by high Mach students than by low Mach students. In addition, low Mach students were more positive in their ratings of the university personnel and student counselors scored highest on the Mach V Scale.

Galfo (1975) constructed a modified Mach scale consisting of 26 items which included statements obtained from McGregor's (1960) Theory X and Theory Y. The Task Versus Human Relations Scale (TVH) was also formulated. These two instruments were utilized along with the Least Preferred Co-worker Scale (Fiedler, 1963). Fifty-seven Administrators and 1,158 teachers were sampled. The teachers were instructed to complete the same three questionnaires in terms of their perceptions of their superior's leadership style. A significant relationship between an administrator's score on the TVH and the Modified Mach Scale was obtained. Moreover, a significant relationship between the leader's TVH score and the subordinate's perceptions of the administrator's TVH score was determined.

Inkpen (1975) tested the relationships between the administrative style and personality of elementary prin-

cipals (as measured by the LBDQ XII, the Mach V Scale and the Choice of Dilemmas Scales) and teacher participation in decision making as measured by the Decisional Index. It was discerned that the level of teacher participation as perceived by the teachers, could be predicted from the variables of Machiavellianism, risk-taking and leader behavior (p. 1). Inkpen (1975) asserted, "The most significant predictor of teachers' perceived involvement was the independent administrator variable of Machiavellianism endorsements" (p. 62). Moreover, risk-taking was negatively related to Mach orientation and contrary to expectations, the person orientation of the principals was positively related to their Mach level. Inkpen (1975) stated,

> The finding that the principals' Mach scores was the most significant correlate of participative decision-making is congruent with the notion that covert strategies and manipulative tactics are used by managers to disguise their real intentions (p. 64).

Lubinsky (1976) administered the Mach V Scale, the Value Survey (Rokeach, 1968) and an administrative effectiveness questionnaire to 45 public school principals, to five of the principals' subordinates and to five of their administrative peers. The subordinates and administrative peers were requested to complete the identical two questionnaires with reference to one of the original 45 prin-

cipals. No significant differences between high and low Mach self-reports of leader effectiveness, were found. However, significant differences were obtained between peer-reported and self-reported values and between subordinate-reported and self-reported values. Low Machs were consistently more open and more transparent in exhibiting their values to subordinates and to peers alike. As expected, high Machs presented themselves differently to different people, were "situationally variable" and were "less known to others" (Lubinsky, 1976, p. 160).

Ahumada (1977) attempted to develop Mach V Scale norms for educational personnel in four areas of specialization. These included majors of elementary ($\overline{X}$ = 96.07) and secondary ($\overline{X}$ = 98.6) education, guidance and counseling ($\overline{X}$ = (97.55) and educational administration ($\overline{X}$ = 98.78) (p. vii). Among all four areas of specialization, the highest mean score was obtained by female secondary education majors. The total group mean score was 97.88 (p. 91). However, no significant differences in Mach orientation among the four areas of specialization were found. High Mach educational administration students were predicted probable later successes significantly more than their low Mach counterparts (p. vii). However, the general undergraduate male population scored significantly higher in Mach level than their male professional counterparts (p.

vii). Conversely, the general female undergraduate population scored significantly lower than their female educator counterparts (p. 91). Ahumada commented,

> The availability of norms for the Mach V Scale in the areas of administration, teaching and counseling is a step forward in Mach V's implementation as a conceptual tool for the selection, recruitment and placement of administrators and teachers (p. viii).

Chila (1977) attempted to demonstrate significant relationships between the Mach orientation of public school administrators and their occupational level by constructing a hierarchical model. A stratified random sample of 563 administrators were tested using the Mach V Scale. The hierarchical Mach order which was predicted in descending order, beginning with the superintendency and ending with the elementary principalship, was not supported. The Mach hierarchy which did result, occurred in the following descending order: high school principals, elementary school principals, superintendents and junior high school principals. Those respondents who reported adolescences spent in urban and suburban areas scored higher on the Mach IV Scale than those professionals who reported a rural residence during their teen years. Moreover, the highest Mach IV Scale mean scores were obtained by those principals who acknowledged a suburban adolescent background.

Ezell (1977) probed the Mach orientation of educational administrators, registered lobbyists and board of education members using the Mach Index developed by Gutterman (1970). Respondents were trichotomized into low, middle or high Mach categories. No significant relationships were obtained between Mach orientation and occupational categories. Although educational administrators scored the lowest of the three groups, Ezell stated, "Educators were equally manipulative as lobbyists and state officials, as measured by the Mach V Scale" (p. 164).

Volp and Willower (1977) researched the Mach orientation of public school superintendents and their perceptions of their own influence as well as school board members' and subordinate administrators' perceptions of the superintendent's influence. The Mach IV Scale and a modified influence measure by Tannenbaum (1968) were completed by 52 chief school administrators. The latter measure only was completed by the other school district personnel. In addition, interviews of two low Mach, one middle Mach and three high Mach superintendents were conducted.

No significant relationships were found on the paper and pencil measures. The superintendents' mean Mach score was 73.92, approximately 20 points lower than the scores

obtained in similar studies. Regarding the interviews, Volp and Willower (1977) commented, "the most striking characteristic of the low Mach superintendents was their ever present regard for people" (p. 261). In contrast, high Machs admitted to expediency, political behavior and made reference to envisioned threats to their control (Volp and Willower, 1977, p. 262).

Charlier (1977) investigated the relationships between locus of control as measured by the I-E Scale (Rotter, 1966), manipulative tendency as measured by the Mach V Scale and leadership style as measured by the Least Preferred Coworker Scale (LPC) (Fiedler, 1963). Fifty-five elementary school principals and their teachers were sampled. A significant positive relationship was discerned between locus of control and manipulativeness. However, no significant relationships were obtained between locus of control and leadership behavior or between manipulativeness and leadership style (Charlier, 1977, p. 85-86).

Andrea (1979) investigated the relationships between the Mach orientation of 65 elementary school principals, as measured by the Mach V Scale and leadership effectiveness as measured by the perceptions of 25% of their teaching staff by LBDQ XII. Significant linear relationships were obtained between the principal's perceived

leader effectiveness and his Mach orientation. As anticipated, high Mach prinicipals were reported to actively exercise leadership, to stress product output and to demonstrate less concern for the well-being and comfort of their teachers than their low Mach colleagues. Significant curvilinear relationships were discerned between five criteria of leader effectiveness and Machiavellianism. Administrators who scored extremely high or extremely low Mach were perceived by their staffs to be ineffective. For example, very high Mach principals were apt to disregard the concerns of their subordinates. It was surmised that leader effectiveness is twofold; i.e., the meeting of organizational and human goals. It was also speculated that certain administrators may augment their effectiveness by assuming a high Mach style. Moreover, contrasting organizational environments may require moderately high or moderately low Mach leaders, depending upon the particular needs of each situation. Manley (1979) studied the relationships between faculty perceptions of elementary school principals' leader behavior as measured by the Leader Behavior Description Questionnaire XII (LBDQ) and the principals' need-dispositions as measured by the Mach IV Scale and two political efficacy scales. As a group, the elementary school administrators expressed a low level of Machiavellianism and a high level of poli-

tical efficacy. A negative relationship was discovered between teacher perceptions of the administrators' leader behavior on the dimension of Consideration but not on the dimension of Initiating Structure on the LBDQ XII (Manley, 1979, pp. 100-102). Regarding future research, Manley (1979) recommended the study of secondary school principals and of principals who administer in urban centers (pp. 158-159).

Haggerty (1979) studied the relationships among the organizational climate generated by the elementary school principal as measured by the Organizational Climate Description Questionnaire (OCDQ), the leader situation structure as measured by the Leader Situation Description Questionnaire (LSDQ) and the principal's Mach orientation as measured by the Mach V Scale. A negative relationship was found between the Mach orientation of the administrator and the organizational climate of the school (Haggerty, 1979, p. 2). The task orientation of high Mach principals produced a negative effect upon the organizational climate and understandably, high disengagement was characteristic of teachers who reported to high Mach administrators (Haggerty, 1979, p. 3).

The inability of some educational studies to uncover relationships between Mach orientation and the major variables under investigation (Manley, 1979, Ezell, 1977,

Ahumada, 1977, Chila, 1977, Lubinsky, 1976, Gross, 1975, Kanner, 1974, Black, 1973) led several researchers to make specific recommendations for future study. One investigator attributed such inconclusiveness to the failure of his design to detect complex interrelationships (utilizing analysis of variance) and to adequately control for extraneous variables (Kanner, 1974). Others contended that the complexity of interactions between the principal, the staff and specific situations required designs which would permit situational analysis (Black, 1973, Galfo, 1975).

The weak associations among these studies which did obtain significant relationships are also confounding. Charlier (1977) found no relationships between leadership style and manipulativeness. Inkpen (1975), contrary to expectations, discovered a positive relationship between the principal's manipulativeness and his concern for the well-being of the staff. This phenomenon was not attributed, however, to the high Mach's actual concern for his staff but rather to his ability to project personal concern for his subordinates (Inkpen, 1975).

Andrea (1975) held that the high Mach's product emphasis underscored his low concern for staff needs, thereby agreeing with Haggerty (1979), Manley (1979) and Galfo (1975).

Haggerty (1979) suggested that future research include

secondary level administrators. It was noteworthy that only one study was limited exclusively to seconary school principals (Kanner, 1974).

Summarizing the recommendations for future study, it behooves current researchers to take into consideration:

1. The possibility of complex interactions between the variables under investigation.
2. The differences between occupational situations.
3. The study of secondary level principals.

Charlier (1977) added the following suggestions. He stated that a measure should be developed which taps:

4. The locus of administrative control.
5. The degree of situational structure afforded by the school division.

Studies are needed which exclusively tap the Machiavellianism of a large sample of secondary school administrators. Previous investigations have tested groups of elementary level principals with little generality. This study attempted to fill the void in educational research with respect to Machiavellianism and secondary school principals by surveying a sample which represents the entire secondary level administrative population of the Commonwealth of Virginia. This attempt sought to correlate the respondent's Mach level with his job satisfac-

tion. Studies are needed which investigate these two variables in educational administration. Morever, the Mach level of the secondary level principals was expected to conform to the quadrant model of locus of control with most scores falling in Quadrant B (high Mach-External) and Quadrant D (low Mach-Internal). Quadrant D (low Mach-Internal) was expected to contain significantly more cases than the other three quadrants combined. Lastly, Mach orientation, locus of control and job satisfaction were correlated to several demographic variables supplied by the respondents as well as with selected situational variables related to their work settings.

CHAPTER 3

Research Methodology

This chapter presents the methodology utilized in the study. Standard research techniques were employed throughout. Chapter 3 includes a restatement of the null hypotheses as research questions; a statement on the type of research design; the research instruments; a description of the population, sample, subjects and procedures for data collection; and an overview of the statistical analyses and data organization.

The purpose of this study was to investigate the Machiavellian orientation and locus of control of a random sample drawn from the population of all the Virginia public school secondary level principals and their general affective reaction to their job (i.e., job satisfaction). Measures of the principal's level of Machiavellianism and locus of control were correlated with certain demographic variables and with principal reports of job satisfaction.

The Research Questions

The rationale provided in the review of the related literature in Chapter 2 resulted in the formulation of two null hypotheses. Their restatement as research questions follows:

Research Question 1

What relationships (if any) are there among the following variables: the administrator's Mach orientation, categorized as high Mach or low Mach; locus of control, categorized as internal or external and job satisfaction, categorized as satisfied or less than satisfied?

Research Question 2

What relationships (if any) are there among the following variables: the administrator's Mach orientation, locus of control, job satisfaction and personal variables which include: sex, age, race, geographic location of adolescent resident, level of formal education, years of teaching experience and years of administrative experience or, among the administrator's Mach orientation, locus of control, job satisfaction and situational variables related to the work setting? These situational variables consist of level of the school, geographic location of the school division, frequency of classroom observation, perceived level of formal control allowed by the school division, school enrollment and the grade levels in the school.

The Type of Research Design

The research design for this study is survey of a random probability sample of secondary school principals in

the Commonwealth of Virginia. The survey instrument contained both test-like items and direct questions which will be described later. This study sought to establish relationships between the aforementioned variables, addressed in the research questions, through the use of a survey in the manner of an ex post facto research design.

The Research Instruments

Machiavellianism; Theoretical Perspective

As operationally defined in this study, Machiavellianism is most appropriately identified as a set of traits and abilities attributed to the high Mach. That is, high Mach is the possessor of a personality disposition characterized by analytical, cognitive orientation, emotional detachment, resistance to social influence and a tendency to initiate and to control structure (Christie & Geis, 1970).

Christie & Geis elaborated upon the psychological orientation of the high Machiavellian. Lake (1973) employed the above standpoint as his operational definition of the Machiavellian variable. That is, that the high Mach is one who impersonally and amorally views and evaluates others in terms of their usefulness for his own purposes. Implicit within these psychological analyses are the behavioral outcomes of the high Mach's endorsement of manipu-

lative strategies. Geis, Christie and Nelson (1970) proposed that if Machiavellianism has a behavioral definition, self-initiated manipulation should be its basis. This position, to a limited degree, is in conformity with the traditional view of the high Mach as an "operator" or "con artist" (Christie & Geis, 1970, p. 107) but not with non-judgmental assessment of Machiavellian behavior. The authors acknowledged that high Machs are considered to be interpersonal game players. However, they rejected the stereotypical models of Machiavellianism and refrained from judgmental assessment of interpersonal manipulation (Christie & Geis, 1970).

Geis (1964) asserted that to be labeled Machiavellian, attempts at interpersonal manipulation should be performed skillfully and effectively. Moreover, she defined successful manipulation as a process by which the manipulator obtains more of a reward than he could otherwise, without the use of manipulation. Christie reiterated her contention. He stated that the Mach IV and V Scales were aimed primarily at measuring effective manipulation (Christie, 1970).

The potential disparity between an attempt to measure effective manipulation and its relation to self-reports on a paper and pencil measure was recognized by Geis (1970). She stated that agreement with Machiavellian views of hu-

man nature and interpersonal relations leads to the implication that one would, therefore, attempt manipulation. Furthermore, she supported this contention by proposing that in order to endorse high Mach attitudes, one would possess the emotional detachment and amoral outlook requisite to the practice of interpersonal manipulation (Geis cited in Christie & Geis, 1970). Thus, she reconciled the two dichotomous constructs of Machiavellianism; attitudes and behavior, with a more obscure one; the high Mach's sense of abstract morality.

Christie regarded the high Mach as an individual whose utilitarian view of others cause him to adopt an unconventional moral code. This utilitarian standpoint, rooted in Machiavelli's philosophy, is at odds with Judeo-Christian morality and with Oriental and Arab teachings. The commonality of these ideals is reflected in the Golden Rule. The "do unto others . . ." ethic is in obvious contrast to Machiavellianism. Mayer (1973) concurred that this ethic and Machiavellianism are in conflict. He stated that according to Machiavelli, "The end justifies the means; the issue is not virtue or vice but success or failure" (p. 182).

The intent of this study was the measurement of Machiavellianism in order to determine the degree to which Virginia secondary school principals believe that others

are manipulable and to assess their endorsement of manipulative strategies in interpersonal relations. This work also investigated whether there are significant relationships between the secondary school principal's personal and situational variables and their Mach level. Locus of control, considered to be a factor which explains Mach level, was measured, using the I-E Scale (Rotter, 1966). Therefore, this study probed the relationships between the secondary school principals' personal and situational variables, their Mach level, locus of control and their job satisfaction.

The Mach IV and V Scales

A list of 71 items regarded as representative of Machiavelli's statements in The Prince and The Discourses was compiled by Christie and others and was then placed in a Likert-format questionnaire. The instrument was labeled Mach I prior to editing and Mach II following its revision. Of the 71 items, 32 dealt with inter-personal tactics, 28 were concerned with views of human nature and 11 were intended to tap abstract or generalized morality. Part-whole correlations were obtained to determine the instrument's power of discrimination. The resulting 20 items measure was titled Mach IV Scale. It was scored on a seven-point Likert scale. Statements worded in a pro-

Mach direction ranged from strong agreement, seven; to strong disagreement, one. Those statements worded in a non-Machiavellian direction were scored in the reverse order. That is, seven indicated strong disagreement with the non-Machiavellian remark and one indicated strong agreement (Christie & Geis, 1970).

Following the administration of the Mach IV Scale and Edward's Scale of Social Desirability to two samples of medical students, correlations of -.35 and -.45 were obtained between the two scales. Another sample of college females yielded an even higher negative correlation. The Mach V Scale was formulated, using the same 20 items as the Mach IV Scale. A forced-choice format was devised, however, to avoid the effects of social desirability. A copy of the Mach V Scale is located in Appendix A. Using Stewart's technique, three responses were presented from which the subject was to choose two. One item was keyed for Machiavellianism. It was matched with another, unrelated to the Mach variable, but equal in social desirability. The third response was a buffer. If the two keyed items were high in social desirability, the buffer was low. If the Mach and social desirability choices were low in social desirability, the buffer was high. The respondent was required to indicate which item was most and which item was least characteristic of him. Christie

(1970) contended that the triad method of scoring made it difficult for the average respondent to determine the socially correct answer between the keyed and the matched statements. For each question, a lack of correlation between the Mach and social desirability items was therefore built into the scoring system in order to reduce the overall effects of social desirability for the measure itself. As a result, external measures of social desirability have demonstrated no significant correlation with the Mach V Scale (Christie & Geis, 1970).

The original scoring system for the 20-item Mach V Scale produced a possible range of scores from zero to twenty. Agreement with the Mach statement worded in a positive direction or disagreement with the Mach statement worded negatively, scored one point for the triad. A score of 10 on the Mach V Scale was at the theoretical neutral point whereby agreement and disagreement with pro-Mach and non-Mach items counter-balanced one another. A revised scoring system for the Mach V Scale was constructed for two reasons. The adjustment in scoring made the theoretical neutral point and the range of the newer instrument equivalent to the Mach IV Scale. Furthermore, a weighted scoring system pinpointed the degree of Machiavellianism in a respondent's answer pattern. That is, the high Mach was most apt to admit that the Mach item was

most similar and the item matched in Social Desirability was least to him. A weighted scoring system, from one to seven per triad, was devised to more effectively measure differences in degree of Machiavellianism. The range over 20 items was from 20 to 140. When a constant of 20 was added, the adjusted range of from 40 to 160, with 100 as a theoretical neutral point, resulted.

A score obtained on the Mach V Scale is best understood in the context of what it measures, compared to that of the Mach IV Scale. Christie (1970) indicated that a Mach IV Scale. score taps Mach orientation not only because respondents agree with Machiavelli but also because they are willing to endorse socially undesirable statements. A score on the Mach V Scale, however, represents the willingness of a respondent to agree with Machiavelli when the tendency to endorse socially undesirable statements is removed. Research in educational administration utilizes the Mach V Scale or the Mach IV Scale to measure Machiavellianism. Included within the Mach V Scale are nine questions regarding "Views of Human Nature," nine questions concerning interpersonal "Tactics" and two questions which probe "Abstract Morality" (Christie, 1970, p. 14).

Christie (1970) offered support for the superiority of the Mach V Scale over the Mach IV Scale in the written

condition. He stated that the Mach V Scale's scoring pattern reduced the effects of the social desirability and response set variables; two distinct test biases. The former, social desirability, has already been discussed at length. The latter variable, response set, refers to the ability of the test taker to determine the actual purposes of a measure due to the nature and format of the response pattern. The author contended that the complicated scoring system and the obscure nature of the forced choices made it difficult for the average respondent to decide which answer was correct (Christie & Geis, 1970). The response set variable differs subtly, therefore, from social desirability. Response set concerns the test taker's ability to falsify the test with respect to the personality dimension under scrutiny whereas social desirability refers to the respondent's attempt to choose the more socially correct answer.

The modification of the Mach IV Scale in order to construct a measure which was more relevant to the respondent's behavior, lowered the Mach V Scale's reliability. Its authors stated that the first nine samples tested on the Mach IV Scale had a mean split half reliability of .79 whereas the reliability of Mach V Scale was reported in the .60's (Christie & Geis, 1970). Thus, the authors decided to reduce the internal consistency in

order to devise a scale which would discriminate more meaningfully among individuals' behavior. Recent studies support the use of the Mach IV Scale and the Mach V Scale individually or in combination. The two scales have also been utilized as pretest and posttest measures. A copy of the Mach IV Scale is located in Appendix B.

Following the instruments' construction, 38 studies of the predictive validity of the Mach IV and V Scales were analyzed and reviewed by Christie and Geis. In 13 of 14 situations in which face-to-face contact, latitude for improvisation and irrelevant affect were present, high Machs won more, were persuaded less, persuaded others more, or significantly behaved as predicted, compared to their low Mach counterparts (Christie & Geis, 1970). Robinson and Shaver (1973) supported Christie's position. Lake (1973) also concurred. He stated that in over 50 studies, the scales have discriminated between groups of high and low Machs in terms of behavioral and perceptual differences. Vleeming (1979) analyzed and reviewed 34 studies between 1970-1979 following those 38 earlier investigations reviewed by Christie and Geis. He concluded that these later studies also generally supported their findings concerning the predictive validity of the Mach IV and V Scales.

Job Satisfaction and Mach Level

Christie and Geis (1970) referred to the conditions in which they would predict low job satisfaction for a high Mach administrator. They stated, "The crucial point is the structure of the organization, not whether it is classified as educational or not" (p. 356). They proposed that in a tightly structured organization in which role relationships and administrative procedures are clearly defined and in which the major responsibility of the manager is organizational maintenance, a high Mach administrator might feel stifled (i.e., experience low job satisfaction). They did not suggest specifically which aspects of the job would cause the least satisfaction. Hence, they do not refer to such facets as the content of the work itself, supervision, relations with co-workers, promotions, etc. Their concern was with a generalized feeling of dissatisfaction. As a result, the authors predicted that a dissatisfied high Mach, lacking other outlets for his energies could resort to interpersonal game-playing with his subordinates.

Christie and Geis' prediction that high Machs would experience feeling of being stifled under certain conditions, is consistent with a view of facet-free job satisfaction offered by Quinn and Shepard (1974). These authors discussed global job satisfaction "in terms of

worker's general affective reaction to the job without reference to specific job facets" (p. 50). This approach is also congruent with Christie and Geis (1970). Feelings of being stifled clearly constitute a "general affective reaction" resulting in an overall negative reaction to one's job. It is with this approach that the present study investigates job satisfaction as it relates to high and low Mach principals. Therefore, the operational definition of job satisfaction is the principal's general affective reaction to the job without reference to any specific job facets.

Gemmill and Heisler (1972) probed the high Mach's job satisfaction with respect to the perceived level of formal control that the system allows the manager. Their results indicated that Christie and Geis (1970) were conservative in their estimation that high Machs would experience low job satisfaction only in tightly structured organizations. The variable "Perceived Opportunity for Formal Control" referred to the categorization of six organizational processes; leadership, motivation communication, decision making, goal setting and control (Gemmill & Heisler, 1972, p. 54). For each of these components, managers were asked to describe their organization in terms of four distinct organizational types, ranging in degree of openness. Contrary to their expectations, high Mach administrators

experienced more job strain and less job satisfaction at all levels of perceived opportunity for formal control (i.e., regardless of the perceived organizational structure). Moreover, they concluded that to the extent that high job satisfaction, low job strain and high opportunity for formal control were considered desirable by the managers, the results demonstrated that the high Machs fared worse than low Mach administrators (Gemmill & Heisler, 1972). Their follow up study, which sampled managers of two organizational settings, different from the original organizational setting, support these findings (Heisler & Gemmill, 1977). It was predicted, therefore, that the high Mach principals in this study would report lower job satisfaction than their low Mach counterparts.

The Facet-free Job Satisfaction Questionnaire

The Facet-free Job Satisfaction Questionnaire is a five item measure designed to tap the respondent's general affective reaction to the job without reference to specific job facets (Quinn & Shepard, 1974). It was included with other interview measures in two national studies conducted in 1969 and 1973. The results of the surveys were published in The 1972-73 Quality of Employment Survey (Quinn & Shepard, 1974). The measure was presented verbally in an interview situation. The five items had been utilized with various modifications in numerous earlier

studies. Quinn & Shepard (1974) stated, "Their precise origins are lost in antiquity" (p. 52). Regarding the internal consistency of the measure, the authors reported a reliability of .72 (p. 69).

The five-item measure is located in Appendix C. Facet-free job satisfaction consists of the arithmetic mean of the five questions. Each response category was assigned a numerical value ranging from 5, indicating high job satisfaction; to 1, indicating low job satisfaction. Job satisfaction scores range, therefore, from 1.0 to 5.0.

Locus of Control; Theoretical Perspective

Social institutions provide individuals with a frame of reference with which to perceive significant events in their lives, which are regarded as reinforcements. How an individual chooses to view such reinforcements seems to be culturally dependent as well as dependent upon the nature of the events themselves. Regardless of their societal membership, human beings experience the need to explain the world and thus explain important life events in understandable terms. The notion, locus of control, refers to the degree to which individuals assume personal responsibility (i.e., internal locus of control) for reinforcements in life or, the degree to which individuals feel that these reinforcements are the result of uncontrollable, extrinsic forces (i.e., external locus of control).

Locus of control is a construct which also originated in the discipline of social psychology. It orders individuals along a continuum ranging from extreme internal to extreme external. Whether locus of control is a personality trait or whether it is a psychological state is a question which was addressed by Bielby and Siegler (1977). They concluded that locus of control is a state-like construct which is situationally determined and capable of change, unlike a trait, which is relatively unaffected by events.

The I-E Scale (Rotter, 1966) is one of several measures which test for the I-E (internal-external) construct. Locus of control orders individuals on a continuum according to the degree to which they believe that they are personally responsible for the reinforcements which occur in life. MacDonald (1976) attributed the wide application of the I-E Scale to its "social relevance" and "wide range of generalizability" (p. 170). Its prolific use may be attributed to the concern of social scientists for the negative societal consequences which result when groups of individuals (especially the disadvantaged) profess an external locus of control. The author added that the environmental factors which foster adoption of particular locus of control contingencies may be "episodic antecedents" or "accumulative antecedents" (MacDonald, 1976, pp.

171-173). The former term refers to a significant, cataclysmic event which an individual may experience in a relatively short period during his or her lifetime which produces an external orientation. The latter and less defined causal factors, which may account for an external outlook, imply longer duration. Social discrimination, prolonged incapacitation and external child rearing practices appear to encourage externality. More data are needed however, in order to empirically explain the acquisition of a particular locus of control contingency.

Despite the contention that it is preferable in our society to possess an internal locus of control, there is reason to believe that an external orientation need not necessarily be regarded as negative or destructive to the individual. Rotter (1975) addressed this issue. He stated that psychologists should not hastily assume that an internal orientation is automatically a preferable state. Moreover, he added that the assumption that internal is synonymous with good and that external is synonymous with bad, is an erroneous one. MacDonald (1976) offered an example for this contention. He surmised that as a consequence of an overly-protected childhood with non-punitive parents, an external individual might emerge who perceives of extrinsic controlling forces as beneficient. This particular external locus of control per-

spective may be infrequent, however. In an exhaustive search of the locus of control literature, Welsh-Hill (1981) stated:

> To summarize, studies investigating the relationship of locus of control to personal well-being, have shown that internality relates to positive adjustment, good self-concept, high levels of self-esteem and general personal well-being (p. 33).

She contended that internals have a time perspective which enables them to delay gratification, a higher level of aspiration and a preference for skill situations in which they are able to exercise control. In addition, internals are less blaming following failure, and are less influenced by extrinsic stimuli. Welsh-Hill (1981) added that internals are more sociable, achievement oriented, assertive and goal-oriented. Conversely, externals are more prone to anger, aggression, anxiety, depression or anomia and they appear more hostile, suspicious or anxious. However, in a study investigating the expectancies of black and white subjects, Lefcourt and Ladwig (1965) found that black persons had "lower expectancies for internal control of reinforcements both in attitude and behavior measures" (p. 380). They asserted that, as a result of social discrimination, these subjects had acquired an external orientation.

Parallels have been drawn between Machiavellianism and

locus of control resulting in the view that each concept offers separate and equivalent power model alternatives. As a consequence of the identification of these two variables, an abundance of validation data has been amassed for each model, respectively. A review of the literature beginning with the original definitions of the two constructs reveals differences between the two variables themselves and subsequently between the intent of the Rotter I-E and Mach IV and V Scales. These differences are addressed at this point.

Christie (1970) contended that Machiavellianism (i.e., manipulation) is a personality trait. Other researchers have generally concurred with Christie using the terms personality trait, need disposition, behavior orientation or personality orientation. Unlike other measures of personality, the Mach IV and V Scales were developed from a hypothetical role model which also identified attitudinal and amoral prerequisites of manipulative behavior. Correlation between manipulativeness and other personality measures followed along with a compilation of specific instances of high Mach behaviors.

Rotter (1966) plainly maintained that locus of control is a state-like variable, less permanent than a trait and subject to change as a consequence of short-term or long-term exposure to misfortunes which are regarded as signi-

ficant events. The scale's validation studies demonstrate that the Rotter I-E Scale has been correlated to other measures of pesonality but not frequently to specific instances of locus of control-related behaviors. The lack of correlation between locus of control and specific behavior is not attributed to any fault in the model or in the I-E measure itself. Unlike Christie, Rotter's intention was not to construct a model which would explain a personality trait in specific behavioral outcomes. Charlier (1977) did, however feel that the low predictibility of "specific criteria" is a limitation of the construct itself and that an explanation for this "weak predictability" is found "in a more complex interpretation of locus of control" (p. 34).

The Rotter I-E Scale

MacDonald (1976) stated that "over fifty percent of the internal-external locus of control investigations have employed the Rotter scale" (p. 228). This accounts for wide acceptance of the measure's validity in clinical and applied studies.

Rotter (1966) offered a detailed account of the construction of the I-E Scale. James (1957) revised an original I-E measure (Phares, 1957) by adding 26 more I-E statements and fuller items to the Phare's scale which

also contained 25 diads. The composite scale was validated in numerous studies on the basis of behaviors which were observed in skill and chance conditions. An attempt to develop subscales in the areas of social and political attitudes, affection and achievement resulted in a 60 item measure which was factor and item analyzed. The latter analysis revealed that the subscales correlated with each other but were not capable of discriminating, individually. Further wording changes were made. Items were eliminated which were found to have a non-significant relationship with other statements, a correlation approaching zero on validation criteria, or items in which one of the two choices was chosen more than 85% of the time. Thus, the Rotter I-E Scale (1966) was devised.

The I-E Scale (Rotter, 1966) is composed of 29 forced-choice items. Six of these items are unrelated to locus of control. These are dispersed throughout the remaining 23 statements and serve as buffers in order to reduce response set bias. The other 23 pairs consist of one internal and one external remark. For each pair, the test-taker is required to select one statement with which he agrees. Scores range from zero (most internal) to 23 (most external). No credit, therefore, is given for an internal response. One point results from each external choice. Rotter (1966) reported an overall mean score of

8.4 for three samples of college students and 9.05 for a sample of black undergraduates. Welsh-Hill (1981) reported a pre-test mean score of 9.925 for a mixed-sex and racially mixed sample of Adult Basic Education students. Although Rotter (1966) did not dichotomize internals and externals on the basis of an arbitrary numerical score, researchers have differentiated between internals and externals in one of two ways.

More commonly, scores are separated at the mean, thereby identifying externals as those who score above the mean and internals as those who score below the mean. In other studies, a subject who scores one standard deviation above the mean is considered external and the respondent who scores one standard deviation below the mean is recorded as internal.

The methodological difficulty addressed in Chapter 2 for Machiavellianism also applies to the I-E Scale. Because the I-E Scale is nonstandardized and because there are no meaningful breaks across a variety of studies, moderately external scorers in one study may resemble moderately internal scorers in other samples. Since individuals are categorized as external or internal, this phenomenon appears even more salient for the I-E Scale than for the Mach IV Scale and the Mach V Scale. Whereas Machiavellianism is ordinarily regarded as the same trait

(i.e., manipulativeness) present in all individuals ranging in degree along a continuum, locus of control is normally regarded as an either/or proposition (i.e., internal versus external) even though this is not congruent with Rotter's original contention. Despite this difficulty and the inevitability of response set bias, the Rotter I-E Scale is regarded as a measure which discriminates between externals and internals, by virtue of the numerous validation studies which have used the instrument.

Another issue which must be addressed if meaningful interpretation of the scale's results is to take place, concerns the number of factors which the I-E Scale measures. MacDonald (1976) stated that although correlations with a social desirability scale have been low (Marlow Crown; -.07 to -.35) concern over the findings of factor analysis have been raised. He added " . . . results of factor analyses are varied and difficult to compare" (MacDonald 1976, p. 229). Such analyses have revealed that the I-E Scale measures two factors. One factor pertains to control related to people in general and phrased in the third person. Another factor targets the individual and his personal view of control. The second factor is prominent on the items with the highest factor loadings and these are phrased in the first person singular. Moreover, they explain most of the variance in the I-E Scale

(MacDonald, 1976). Despite the aforementioned methodological difficulties, the I-E Scale (Rotter, 1966) is widely utilized in behavioral science studies. Its prolific use may be attributed to the concern of social scientists for the negative social consequence which follow when groups of individuals adopt an external locus of control within a society which rewards those individuals who possess an internal locus of control.

The issues of dimensionality, response set, social desirability and non-standarization are diminished by the I-E Scales' ubiquitous application. MacDonald (1976) succinctly addressed this contention. He stated:

> It is clear that there are methodological problems to be resolved in the I-E Area and that Rotter's scale is not as pure as it was believed to be. However until such time as the issues are resolved, Rotter's scale is still to be recommended as a measure of generalized I-E expectancy (p. 229).

A copy of the modified I-E Scale (i.e., the I-E questions minus the buffer items) is located in Appendix D.

The Population, Sample, Subjects and Data Collection

The population consisted of all the secondary level public school principals employed in the public schools of Virginia. The principals comprised a sample of approximately 225 middle school, intermediate school, junior high school, high school, secondary school and combined school

administrators. Assistant and sub-school principals were not included in this research.

The randomization of the sample was conducted as follows. A master label list of all of the secondary level principals employed in the Commonwealth of Virginia, was secured from the Virginia Association of Secondary School Principals (V.A.S.S.P.). The labels were consecutively numbered from 1-512. Using the table of random numbers (available in any statistics textbook) a consistent interval was used to randomly select 225 numbers which were between 1 and 512. From the 225 numbers, drawn at random in this manner, the sample was selected.

Each administrator received by mail, an envelope containing the following materials. A cover letter introduced the researcher and explained the purposes of the investigation. The respondent was assured confidentiality. An individual serving of instant coffee was attached to the letter to motivate the respondent to answer and return the questionnaire in a stamped, self-addressed envelope. The Mach V Scale (Christie, 1970), the I-E Scale (Rotter, 1966) and the Facet-free Job Satisfaction Questionnaire (Quinn and Shepard, 1974) which was embedded within the bibliographic section, comprised the measure which was titled The Educator's Inventory.

Confidentiality was provided in the following manner.

Each principal was assigned a numeral. The test booklet was coded with the respondent's numeral. A list of the subjects and their return numerals was kept separated from the tests. Upon receipt of the returned questionnaires, tabulation was made. After approximately one week, those administrators who had not returned the Educator's Inventory (i.e., the Mach V Scale, the I-E Scale, the Facet-free Job Satisfaction Questionnaire and the demographic questionnaire) were mailed a follow-up letter requesting their compliance. Two weeks later, a new instrumentation package was mailed to all non-respondents. The second envelope contained the same materials as the first mailing with one exception. A new cover letter requesting the administrator's participation in the investigation was attached to the Educator's Inventory. A copy of the letters of permission to use the instruments are located in Appendix E. The instrument, cover letters and follow-up letter are located in Appendix F. Five weeks later, 37 non-respondents were contacted by telephone and surveyed. The Mach IV Scale (Christie, 1970) and I-E Scale (Rotter, 1966) the Facet-free Job Satisfaction Questionnaire (Quinn and Shepard,1974) were administered. The Mach IV Scale was used in place of the Mach V Scale in the verbal respondent study because of its administration facility. The Likert format of the former measure was judged to be

superior in the verbal condition to the Stewart's forced-choice format of the Mach V Scale. The verbal respondent study was completed in June, following three weeks of telephone calls to the non-respondents.

The non-respondent (i.e., the verbal respondent) study was conducted because it was anticipated that a subject's compliance or noncompliance with the written questionnaire might have been dependent upon his or her Mach level. For this reason, an attempt was made to contact as many non-respondents as possible by telephone instead of contacting only a small proportion (i.e., 10%) of these principals. Those administrators who initially refused to comply with the written questionnaire but elected to participate in the telephone survey, were termed verbal respondents.

The Statistical Overview and Data Organization

The statistical analyses were conducted as follows. Descriptive statistical analyses were utilized in order to obtain raw scores, frequencies, percents, means and standard deviations. Stepwise Multiple Regression Analyses were used to test for significant relationships among the three major variables: Machiavellianism, locus of control, and job satisfaction as well as for the personal and situational factors which comprised the demographic variables. The level of significance was set at the .05 level.

The data were prepared and organized as follows. Data from the returned questionnaire were coded onto standard IBM cards. The information was key punched using formats recommended by SPSS: Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975). Raw scores, means, standard deviations, F ratios and probabilities were computed for the variables under investigation utilizing subprograms: Frequencies, Breakdown, t tests crosstabs and Stepwise Multiple Regression Analysis.

Summary

Kanner (1974) attributed the inconclusiveness of his research to failure of the design to detect complex interrelationships between Machiavellianism and the major variables under investigation using Analysis of Variance. Andrea (1979) and Haggerty (1979) specified that the manipulativeness of high school administrators be tested in order to discern the organizational and human outcomes which occur in the staff as a consequence of the behavioral trait. Both Black (1973) and Kanner (1974) suggested that the geographic background of the principal and its relationship to Mach level be scrutinized. Furthermore, Andrea (1979) maintained that the geographic location of the administrator's school division and par-

ticularly those principal's who administer in urban centers, be studied. After Charlier (1977) found a positive relationship between locus of control and Machiavellianism, he suggested that a measure which taps the locus of administrative control be developed. Christie and Geis (1970) reflected that empirical studies probing the administrator's affective reaction to the work situation are warranted. Finally, Gemmill and Heisler (1971) held that manipulativeness is positively associated with a lower perceived opportunity for formal control and negatively associated with job satisfaction. They recommended that empirical studies probing Mach level and these criterion variables be investigated in contemporary organizations.

CHAPTER 4

The Results of the Study

Introduction

A random sample (n = 225) of Virginia public school secondary level principles was selected from a population (n = 512) of all the public school secondary level principals employed in the commonwealth. Sample size was determined using the sample size table developed by Krejcie and Morgan (1970). As was discussed earlier, randomization of the master list of all the secondary school principals was accomplished by numbering the label list from 1-512. Using a table of random numbers, 225 numbers (between 1 and 512) were drawn. Each of these randomly chosen numbers corresponded to those on the principals' master list. Those principals whose label number corresponded to a randomly drawn number were included in the random sample. Each administrator received by mail a questionnaire packet which consisted of the following materials. A cover letter explained the nature of and the purpose of the investigation, promised the respondent confidentiality and requested the recipient's participation in the study. The Educator's Inventory consisted of three instruments; the Mach V Scale (Christie, 1970) the I-E Scale (Rotter, 1966) and the Facet-free Job Satis-

faction Questionnaire (Quinn and Shepard, 1974). The latter measure was embedded in the demographic section in order to reduce response set bias. Also included in the packet were a stamped return envelope and a single serving of instant coffee. A first mailing was sent to the subjects in February. One week later, a follow-up letter was mailed to all who had failed to respond at that time. This letter was followed by a second mailing of the entire questionnaire packet. By June, 174 usable questionnaires (77%) were obtained.

Telephone calls were made to 37 of the 51 remaining non-respondents (i.e., verbal respondents) in May. The telephone survey which took approximately 15 minutes, consisted of the following measures. As was discussed earlier, the non-respondent (or verbal respondent) study was conducted because it was expected that compliance or failure to comply with the written questionnaire was dependent upon a subject's Mach level. The Mach IV Scale (Christie, 1970) was utilized en lieu of the Mach V Scale. The Mach V Scale was deemed to be too confusing for oral administration due to the complexity of the Stewart's forced-choice answer pattern. The Likert scale response pattern of the Mach IV Scale, however, was judged to be more appropriate in the verbal condition. The I-E Scale (Rotter, 1966) and the Facet-free Job Satisfaction

Questionnaire (Quinn & Shepard, 1974) which was embedded in an identical demographic questionnaire, were administered verbally to the 37 verbal respondents who elected to participate in the verbal respondent study by telephone.

The Pilot Study

A pilot study which was conducted in two phases in fall 1980, prefaced the actual study which took place in spring 1981. The purpose of the pilot study was threefold. Its primary purpose was to ascertain whether the Mach V Scale (Christie, 1970), the Facet-free Job Satisfaction Questionnaire (Quinn & Shepard, 1974) and the demographic questionnaire were efficient to administer and facile for the respondents without verbal instructions. A second purpose was to determine whether the items in the Mach V Scale (Christie, 1970) were highly reactive due to the low social desirability of certain triads. Lastly, the pilot study was attempted in order to accomplish a trial run of the statistical procedures and the computer programs to test for the relationships or the lack of relationships predicted by the null-hypotheses. It should be noted, however, that because of the non-randomization of the pilot study's sample, (n = 34) no attempts were made to address the hypotheses proposed in the dissertation.

The questionnaire packet in the pilot study differed from the final questionnaire utilized in the actual study in several respects. The measure consisted of the Mach V Scale (Christie, 1970) and the Facet-free Job Satisfaction Questionnaire (Quinn and Shepard, 1974) preceded by a briefer demographic section. The job satisfaction measure, presented in its entirety, was not embedded in the personal status section. A short answer sheet was provided. The answer sheet is located in Appendix G. Later, the use of an answer sheet was rejected in order to avoid the likelihood of errors or response to sets which might result from the use of a separate answer form. Lastly, the I-E Scale (Rotter, 1966) was not included in the first phase of the pilot study.

Phase 1 was conducted in October 1980. The pilot instrument was administered to 34 public school elementary, secondary level, special education and higher education administrators including principals, assistant principals, sub-school principals and one high school counselor from five adjacent states in the middle Atlantic region of the U.S.A., by the researcher and volunteers. Omitted from the pilot sample were public school secondary level principals (i.e., middle school, intermediate school, junior high school, high school and secondary school) employed in Virginia. These professionals were

eliminated from participation in the pilot study so that the population of the actual study was protected from bias which might occur if a principal were selected for the pilot study and randomly selected again in the actual investigation.

The results of Phase 1 of the pilot study were as follows. The researcher and volunteers obtained immediate verbal feedback from the subjects. It was determined that the Mach V Scale, although regarded negatively by some pilot study respondents, was neither too difficult nor too reactive. Means and standard deviations were secured and subprograms Condescriptive, Breakdown and Regression Analyses (Nie et al., 1975) were performed. No significant relationships among the variables under consideration, were found. As a consequence of the pilot study, major revision of the entire questionnaire (i.e., the Educatory's Inventory) took place. Format alterations included elimination of certain categorical responses, enlargement of the demographic section to contain items concerning the work situation, formal level of administrative control allowed by the respondent's school division, one question regarding the subject's ethnic membership and the dispersal of the job satisfaction questions throughout the demographic section, which was placed at the end of the survey.

The feasibility of including selected items, extracted from the I-E Scale (Rotter, 1966) was explored in Phase 2 of the pilot study in December 1980. Earlier, the Phase 1 subjects did not complain that the Educator's Inventory was too lengthy when they were asked. Therefore, 12 of the most discriminating items of the I-E Scale (Rotter, 1966) which had part-whole correlations of .22, were chosen for inclusion in the actual study. A sample of 50 graduate students from a variety of academic disciplines at the Virginia Tech Northern Virginia Graduate Center were asked to complete the brief 12 item test in Phase 2 of the pilot study. The only purpose of this questionnaire administration was to obtain feedback from the respondents concerning the modified I-E Scale's transparency with respect to response set bias. Many Phase 2 respondents verbally stated that the 12 items which were selected were merely restatements of the same question. When the final version of the Educator's Inventory was prepared, all 23 items of the I-E Scale were selected minus the seven buffer questions. It was felt that the inclusion of 11 less discriminating diads (thereby increasing the length of the second subtest) would not discourage the respondents from completing the entire measure because of its length. Furthermore, it was reasoned, that the incorporation of the remaining questions would vary

the I-E Scale's item contents sufficiently, so that any possible response set bias would diminish.

Based upon the aforementioned recent recommendations for future study, it was the task of this research to investigate the Mach orientation and locus of control of a random sample of a population of Virginia public school secondary level principals and their general affective reaction to their job (i.e., job satisfaction). It was maintained that the administrator's Mach orientation could be best explained by specific loci of control. It was also held that the literature in Machiavellianism and locus of control contained adequate theory to empirically support a matrix of these two social psychological variables. It was proferred that the quadrant model could explain certain philosophical orientations (loci of control) which are behaviorally manifested in degrees of manipulativeness (i.e., Machiavellianism) and that these two variables act in conjunction to predict the subjects' satisfaction or lack of satisfaction with their work situation as a consequence of certain situational variables. Also, based upon recent literature in Machiavellianism, it was expected that certain personal status variables (i.e., race, sex, level of formal education and place of adolescent residence) would predict Mach level.

Data Analysis

Two research questions were entertained. These were:

Research Question 1

What relationships (if any) are there among the following variables: the administrator's Mach orientation categorized as high Mach or low Mach, locus of control categorized as internal or external and job satisfaction categorized as satisfied or less than satisfied?

Research Question 2

What relationships (if any) are there among the following variables: the administrator's Mach orientation, locus of control, job satisfaction and personal variables which include: sex, age, race, geographic location of adolescent resident, level of formal education, years of teaching experience and years of administrative experience or, among the administrator's Mach orientation, locus of control, job satisfaction and situational variables related to the work setting? These situational variables consisted of level of the school, geographic location of the school division, frequency of classroom observation, perceived level of formal control allowed by the school division, school enrollment and the grade levels in the school.

These research questions were tested using a sample which is described in the following paragraph prior to the reporting of the tests of the two hypotheses.

The Analytic Design

The planned analytic design consisted of a random probability sample of Virginia public school, secondary level principals. A sample of 225 out of a total population of 512 was selected randomly, using the table of random numbers, and surveyed through the use of three test-like instruments as well as through the use of direct, demographic questions. Of the written responses, 174 (77%) usable questionnaires were obtained. Of the verbal respondents, (n = 51) 31 oral responses (60.7%) were acquired by telephone. An *ex post facto* research design was employed. Descriptive statistics including frequencies, mean scores, percents and standard deviations were secured. Multivariate and univariate Regression Analyses and t tests were executed.

Descriptive Statistics

The following narrative provides the general descriptive statistics for the respondent sample. Of a total sample of 174 subjects, 96.0% (n = 167) were male and 4.0% (n = 7) were female. Black persons comprised 17.9% (n = 31), white principals constituted 79.9% (n = 139), while

the remaining ethnic membership categories, the American Indian and Hispanic groups, added 2.2% (n = 4) to the sample size. Table 1 shows frequencies and percents for the variable, sex. Table 2 shows frequencies and percents for race.

The personal variable, age, produced the following configuration. The youngest administrators (i.e., those between ages 30-34) totaled 9.8% (n = 17) and those between the ages of 35-39 made up 30.4% (n = 53) of the sample. Another 20.1% (n = 35) of the subjects comprised the group between the ages 40-44 and 19.6% (n = 32) reported ages from 45-49. Lastly, 9.8% (n = 19), 8.0% (n = 14) and 2.3% (n = 4) were between 50-54 years, 55-59 years and 60-64 years of age, respectively. Table 3 shows these frequencies and percents.

The situational variable, level of the school, yielded six categories which broke down into the following three combined groups. Middle school, intermediate and junior high school principals comprised 39.7% (n = 69) of the distribution which was slightly less than 41.4% (n = 72) of the respondents who administer at the high school level. Only 15.5% (n = 27) of the respondents headed secondary schools and 3.4% (n = 6) were in charge of combined schools, or schools which included adult basic education

Table 1

Sex of the Respondents

Sex	Frequency	Percent
Male	167	96.0
Female	7	4.0
Totals	174	100.0

Table 2

Race of the Respondents

Race	Frequency	Percent
Black	31	17.9
White	139	79.9
American Indian	2	1.1
Hispanic	2	1.1
Totals	174	100.0

Table 3

Age of the Respondents

Age	Frequency	Percent
30-34	17	9.8
35-39	53	30.4
40-44	35	20.1
45-49	32	19.6
50-54	19	9.8
55-59	14	8.0
60-64	4	2.3
Totals	174	100.0

students as part of their pupil population. Table 4 shows these frequencies and percents. It should be noted that due to certain irregularities on the master list of all the secondary school principals in the Commonwealth of Virginia (obtained from the Virginia Association of Secondary School Principals), two oddities were randomly selected from the master list. These included one principal of a military school and one administrator of an adult basic education program. These subjects' questionnaires were labeled according to the irregularity and the responses were then tabulated.

The geographic location of the adolescent residence generated the following proportions. As expected, 56.9% (n = 99) resided in open country, farming areas or in small towns during their adolescence. Subjects reporting medium-sized city or the suburb of a medium-sized city of adolescent environment, comprised 31.6% (n = 55) of the total group. As expected, only 11.5% (n = 20) of the respondents reported living in large cities, very large cities or in the suburbs of very large cities. Table 5 shows these frequencies and percents.

Similarly, the geographic location of the respondent's school division produced the following ratios. Those working in open country, farming country or small-town areas composed 50.6% (n = 88) and those respondents who

Table 4

Level of the School

School Level	Frequency	Percent
Middle school	26	14.9
Intermediate school	11	6.3
Junior high school	32	18.4
High school	72	41.4
Secondary school	27	15.5
Other*	6	3.4
Totals	174	100.0

* K-8th grade, K-12th grade, Adult basic education, etc.

Table 5

Geographic Location of Adolescent Residence

Location	Frequency	Percent
Open country or farming	56	32.2
Small town	43	24.7
Medium-sized city	38	21.8
Surburb of a medium-sized city	17	9.8
Large city	12	6.9
Very large city	2	1.1
Suburb of a very large city	6	3.4
Totals	174	100.0

reported employment in medium-sized cities or the suburbs thereof, comprised 25.9% (n = 45) of the group. Only 12.6% (n = 22) of the administrators reported that their school divisions were located in large cities while the remaining 10.9% (n = 19) administered in very large cities or in the suburbs of very large cities. Table 6 shows these frequencies and percents.

When asked how frequently the administrator observed his teachers, the following responses were reported. Out of a total group of 174 respondents, 60.3% (n = 105) stated that they observed once or more on a weekly basis, 20.7% (n = 36) acknowledged observing 2-3 times per month, 9.2 (n = 16) indicated that they made routine observations once or more per month and 5.2% (n = 9) stated that they observed less than once each month. Moreover, 4.6% (n = 8) reported that they observed irregularly ranging from never to two or more times each day. Table 7 shows these frequencies and percents.

The perceived level of formal control allowed by the subjects' school division was asked of the respondent along with the frequency of observations in order to ascertain whether the perceived opportunity of formal control was positively related to Machiavellianism, locus of control or job satisfaction. The principal was requested to check any or all of the nine duties in which he felt

Table 6

Geographic Location of the School Division

Location	Frequency	Percent
Open country or farming	44	25.3
Small town	44	25.3
Medium-sized city	28	16.1
Surburb of a medium-sized city	17	9.8
Large city	22	12.6
Very large city	2	1.1
Suburb of a very large city	17	9.8
Totals	174	100.0

Table 7

Frequency of Teacher Observations

Regularity of Observation	Frequency	Percent
Once or more per week	105	60.3
Two or three times per month	36	20.7
Once or more per month	16	9.2
Less than once per month	9	5.2
Other	8	4.6
Totals	174	100.0

that he had sufficient autonomy to be effective. The following proportions resulted. Only 5.7% (n = 10) indicated that they had the least amount of control that was needed (2 checks or less) and 70.2% (n = 122) acknowledged that they possessed moderate autonomy (3 to 6 checks marked). Of the remaining 42 cases, 13.2% (n = 23), 5.7% (n = 10) and 5.2% (n = 9) checked the most control categories (i.e., 7, 8, and 9 respectively). Table 8 shows these frequencies and percents.

The secondary principals surveyed, reported their pupil enrollment as follows. As expected, 42.0% (n = 73) administered in schools in which the pupil population was less than 700 students. Moderately-sized schools (with a pupil enrollment between 700-1,200) were acknowledged by 37.3% (n = 65) of the respondents. Of the larger school categories, 5.8% (n = 10) worked at schools with pupil populations consisting of 1,250-1,466 students, 6.9% (n = 12) administered at schools between 1,525-1,765 students, 5.9% (n = 10) reported enrollments between 1,900-3,000 students and student populations between 4,000-5,320 were acknowledged by 2.3% (n = 4) of those samples. Table 9 shows these frequencies and percents.

The following information was reported by the principals polled, regarding the level of their formal education. Curiously, 1.1% (n = 2) claimed that they were the

Table 8

Perceived Level of Formal Control
As Reported by the Principals

Control	Frequency	Percent
0-2	10	5.7
3-6	122	70.2
7	23	13.2
8	10	5.7
9	9	5.2
Totals	174	100.0

Table 9

The Enrollment of the School

Enrollment	Frequency	Percent
0-700	73	42.0
701-1,200	65	37.3
1,250-1,466	10	5.8
1,525-1,765	12	6.9
1,900-3,000	10	5.8
4,000-5,320	4	2.2
Totals	174	100.0

possessors of no undergraduate degree. None of the respondents acknowledged either a bachelors degree or a bachelors degree with some graduate credits. Understandably, 73.0% (n = 127) held a master's degree and 16.1% (n = 28) possessed a sixth year specialist degree. Moreover, 9.8% (n = 17) had obtained a doctorate. Table 10 shows these frequencies and percents.

It should be noted that the responses from two schools indicate a fact which appears to contradict the certification regulations of the Commonwealth of Virginia. Two respondents indicated that they were the possessors of no degree. This may have been due to an error in reporting their level of formal education or due to an error in the frame which generated the computerized label list of all those schools which are regarded as public schools in Virginia (similar to the inclusion of one military school and one adult basic education program as a school), as was discussed previously.

The years of teaching experience yielded much variation in classroom experience prior to the onset of administrative duties, ranging from less than one year to more than 49 years. Understandably, 35.06% (n = 61) had 5 or less years of classroom teaching experience, followed by another 39.1% (n = 68) who possessed from 6-10 years experience. In addition, 12.0% (n = 21) were credited

Table 10

The Principal's Formal Level of Education

Level	Frequency	Percent
No degree	2	1.1
Masters degree	127	73.0
C.A.G.S.	28	16.1
PhD	17	9.8
Totals	174	100.0

with 11-15 years of pedagogical practice followed by 9.9% (n = 17) who had 16-20 years tenure. Lastly, 3.5% (n = 6) had accrued from 21-30 years of teaching service and 1 remaining respondent (.6%) had taught for 50 years before entering administration. Table 11 shows these frequencies and percents.

The last situational variable, the years of administrative experience, netted the following results. Of the 174 respondents, 10.9% (n = 19) had been administrators from 1-4 years and 29.3% (n = 51) held administrative posts from 5-9 years. In addition, 33.4% (n = 58) possessed from 10-14 years of administrative tenure, 18.9% (n = 33) reported 15-19 years and 5.2% (n = 9) claimed from 20-25 years of administrative duties. Finally 2.3% (n = 4) had logged from 26+ years of administrative practice. Table 12 shows these frequencies and percents.

Test of Hypothesis 1

The statistical procedures used to test the hypotheses and to investigate corollary relationships are reported in the order of their importance to the overall testing of the hypotheses. For Hypothesis 1, hierarchical Regression Analyses were conducted to investigate the interrelationships between Machiavellianism, locus of control and job satisfaction. The actual analytical model imposed was a

Table 11

Years of Teaching Experience of the Principals

Years Taught	Frequency	Percent
0-5	61	35.0
6-10	68	39.1
11-15	21	12.0
16-20	17	9.8
21-30	6	3.4
50	1	.6
Totals	174	100.0

Table 12

Years of Administrative Experience

Years	Frequency	Percent
1-4	19	10.9
5-9	51	29.3
10-14	58	33.4
15-19	33	18.9
20-25	9	5.2
26-41	4	2.3
Totals	174	100.0

series of regresssion runs. These were executed in order to test for the combined relationships and to partial out univariate relationships. In all, three significant regression runs were executed. These were as follows. First, the dependent variable, locus of control, and the two independent variables, Machiavellianism and job satisfaction, were entered hierarchically into Steps 1 and 2 of a Stepwise Multiple Regression Analysis. The criterion variable, Machiavellianism, and the predictor variables, locus of control and job satisfaction were entered into the second multiple regression equation. Finally, the independent variables, Machiavellianism and locus of control, were hierarchically entered into a linear equation with the dependent variable, job satisfaction. Table 13 shows the criterion and predictor variables and the percent of the variance explained for the three multivariate analyses.

For the dependent variable locus of control, two independent variables, Machiavellianism and job satisfaction, were hierarchically entered into Stepwise Regression Analysis in Steps 1 and 2. Machiavellianism explained 10.0% ($p < .005$) of the variance and job satisfaction accounted for the remaining 3.6% ($p < .005$) of the variance in locus of control. Both independent variables, Machiavellianism and job satisfaction combined, explained 13.6% of the

Table 13

Multivariate Regression Analyses for the Three Criterion Variables of Hypothesis 1

Criterion Variable	% of Variance Explained	Predictor Variable(s)
Locus of control	13.6%	Machiavellianism Job satisfaction
Machiavellianism	12.7%	Locus of control Job satisfaction
Job satisfaction	9.7%	Machiavellianism Locus of control

variance in locus of control. These findings suggest that Machiavellianism and job satisfaction act in conjunction to provide a low predictive relationship for locus of control. Table 14 shows the variance partitions and F ratios for these results. Table 15 provides the correlations and significance.

For the criterion variable, Machiavellianism, two predictor variables, locus of control and job satisfaction were hierarchically entered into Stepwise Regression Analysis in Steps 1 and 2. Locus of control was found to explain 10.0% ($p < .005$) of the variance and job satisfaction accounted for the additional 2.7% ($p < .005$) variance in Machiavellianism. These results indicate that both locus of control and job satisfaction act in conjunction to provide a weak predictive relationship with Machiavellianism. Table 16 shows the variance partitions and the F ratios for these findings. Table 17 provides the correlations and significance.

Stepwise Multiple Regression Analysis was performed for the dependent variable, job satisfaction, and the independent variables, Machiavellianism and locus of control which were hierarchically entered in Steps 1 and 2. Machiavellianism explained 5.9% ($p < .005$) and locus of control accounted for an additional 3.8% ($p < .005$) of the variance in job satisfaction. These results indicate that

Table 14

Analysis of Variance for Regression Analysis Showing the Prediction of Locus of Control by Machiavellianism and Job Satisfaction

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	2.	377.81582	188.90791	13.45917
Residual	171.	2400.09223	14.03563	*

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Mach	0.1355397	0.26854	0.03698	13.437
Jobsat	-0.8080940	-0.19600	0.30205	7.158
(Constant)	-2.223234			

* $p < .005$

Table 15

The Correlations and Level of Significance for Locus of Control with Machiavellianism and Job Satisfaction

Variable	Correlation	Significance
Machiavellianism	.32	$p < .005$
Job satisfaction	-.26	$p < .005$

Table 16

Analysis of Variance for Regression Analysis Showing the Prediction of Machiavellianism by Locus of Control and Job Satisfaction

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	2.	1386.65736	693.32868	12.45618
Residual	171.	0518.10126	55.66141	*

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Locus of control	0.5375129	0.217129	0.14663	13.437
Jobsat	-1.398639	-0.17122	0.60458	5.352
(Constant)	98.90975			

* $p < .005$

Table 17

The Correlation and Level of Significance for Machiavellianism with Job Satisfaction

Variable	Correlation	Significance
Job satisfaction	-.24	$p < .005$

manipulativeness and locus of control act in conjunction in order to provide a weak predictive relationship for job satisfaction. Table 18 shows the variance partitions and F ratios for these findings.

As a result of three Stepwise Multiple Regression Analyses which were performed in order to test the combined and individual relationships between the three major variables under investigation (Machiavellianism, locus of control and job satisfaction) the first experimental hypothesis is validated. These multivariate relationships are listed in Table 19.

Test of Hypothesis 2

Hypothesis 2 was tested using the following set of statistical analyses. First, multivariate relationships were sought for the three major variables under investigation (i.e., Machiavellianism, locus of control and job satisfaction) with each other and with 13 biographical variables. Using univariate and multivariate Regression Analyses, significant relationships were obtained for each linear combination which had been hierarchically entered into the regression formulas. The results of these six multivariate Regression Analyses are reported in succeeding paragraphs in the order of their respective importance to the testing of Hypothesis 2, determined by the total percent of the variance explained for each dependent

Table 18

Analysis of Variance for Regression Analysis Showing the Prediction of Job Satisfaction by Machiavellianism and Locus of Control

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	2.	15.75253	7.87626	9.12112*
Residual	171.	147.66177	0.86352	

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Mach	-0.2169819D-01	-0.17725	0.00938	5.352
Locus of Control	-0.4971667D-01	-0.20498		7.158
Control (Constant)	6.4971667D-01 6.596475			

* $p < .005$

Table 19

The Multivariate Relationships
Addressed in Hypothesis 1

Criterion Variable	Predictor Variable(s)
Locus of control	Machiavellianism Job satisfaction
Machiavellianism	Locus of control Job satisfaction
Job satisfaction	Machiavellianism Locus of control

variable. Table 20 shows the six Stepwise Multiple Regression Analyses.

Univariate relationships were analyzed for each of the three major criterion variables; Machiavellianism, locus of control and job satisfaction and for each biographical criterion variable. In instances where the relationships were not clear, cross breaks were used to provide insight into the relationships. Concomitent relationships, in some cases, were investigated for Mach level, locus of control and for job satisfaction. Others simply addressed the hypothetically most related variable. In all, 39 univariate Regression Analyses were performed. The nine univariate Regression runs which successfully accounted for significant percentages of the variance for each major criterion variable (i.e., Machiavellianism, locus of control and job satisfaction) are reported in the following order. The three significant univariate Regression analyses for locus of control are reported individually, followed by a reporting of the 10 remaining non-significant findings for locus of control. One significant univariate regression analysis for the dependent variable Machiavellianism, is then reported, followed by a synthesis of 12 non-significant univariate Regression Analyses. Finally, the significant univariate Regression Analyses for the criterion variable, job satisfaction and four significant

Table 20

Multiple Regression Analysis

Dependent Variable	Independent Variable
Machiavellianism	Locus of control Level of formal education School enrollment Years of administrative experience Years of teaching experience
Machiavellianism	Locus of control Geographic location of adolescent residence Age Race Sex
Job satisfaction	Machiavellianism Locus of control Years of administrative experience Level of formal education
Job satisfaction	Machiavellianism Locus of control Age
Job satisfaction	Perceived level of formal control School enrollment Geographic location of the school district Level of the school Years of administrative experience Formal level of education
Locus of control	Formal level of education Years of administrative experience Years of teaching experience Age Race Sex

independent variables are reported and followed by the nine remaining non-significant findings.

Crosstabulation of Mach V Scale scores (classified as high Mach and low Mach) and I-E Scale scores (categorized as internal or external) in order to address the corollary to the experimental hypotheses, are reported last.

For the dependent variable Machiavellianism, five independent variables were entered hierarchically into Stepwise Multiple Regression Analysis in the following order. Locus of control was determined to be the best predictor of Mach level, explaining 10.0% ($p < .005$) of the variance and the level formal education was the next best predictor, accounting for an additional 3.3% ($p < .005$) of the variance. School enrollment and the years administrative experience entered in Steps 3 and 4 respectively, explained .11% ($p < .005$) and 2.8% ($p < .005$) of the variance in manipulativeness. Teaching experience, entered in Step 5, contributed to .04% ($p < .005$) of the remaining variance in Mach level. All five variables showed a significant linear relationship, explaining 16.2% ($p < .005$) of the variance. These findings suggest that the five predictor variables; locus of control, formal level of education, school enrollment, years of administrative experience and years of teaching experience act in conjunction to provide a weak predictive relationship

with the criterion variable, Machiavellianism. Table 21 shows the variance partitions and F ratios for these findings. Table 22 provides the correlations and significance.

For the criterion variable Machiavellianism, five predictor variables were entered into the equation in the following order. Locus of control was found to be the best predictor of Machiavellianism, explaining 10.0% ($p < .005$) of the variance and geographic location of adolescent residence was the next best predictor of manipulativeness, accounting for an additional .20% ($p < .005$) of the variance. The age and race of the subjects, entered on Steps 3 and 4 respectively, explained an additional 1.0% ($p < .005$) and .14 ($p < .005$) of the variance in Machiavellianism. Sex also contributed further to .10% ($p < .005$) of the variance. Thus, all five variables showed a significant relationship, explaining 11.4% in Mach level.

These findings indicate that when the variables were entered in a linear combination form, a significant relationship was found for the criterion variable Machiavellianism and all five predictor variables. As expected, locus of control, geographic location of residence during adolescence, age, race and sex, therefore, act in combination to provide a weak predictive relationship with Machiavellianism. Table 23 shows the variance partitions and F ratios for these findings. Table 24 provides the correla-

Table 21

Analysis of Variance for Regression Analysis Showing the Prediction of Machiavellianism by Five Independent Variables

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	5.	1745.21812	349.04362	6.41406
Residual	166.	9033.47392	54.41852	*

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Locus of control	0.6243769	0.31514	0.14706	18.026
Education	1.490053	0.18201	0.83175	5.441
Enrollment	-0.1271678D-03	-0.01107	0.00086	0.222
Admin./Exper.	-0.2239698	-0.17450	0.09445	5.623
Teaching Exper.	0.2746844D-01	0.02177	0.09430	0.085
(Constant)	86.55114			

* $p < .005$

Table 22

The Correlations and Level of Significance for the Dependent Variable, Machiavellianism and Four Predictor Variables

Variable	Correlation	Significance
Level of formal education	.12	$p < .005$
School enrollment	-.02	$p < .005$
Years of administrative experience	-.24	$p < .005$
Years of teaching experience	-.07	$p < .005$

Table 23

Analysis of Variance for Regression Analysis Showing the Prediction of Machiavellianism by Locus of Control, Geographic Location During Adolescence, Age, Race and Sex

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	5.	1213.00581	242.60116	4.20533*
Residual	168.	9691.75291	57.68900	

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Locus of control	0.5668016	0.28608	0.14973	14.329
Geographic location	-0.2619840	-0.05052	0.38178	0.471
Age	-0.9217064D-01	-0.08898	0.07777	1.405
Race	-0.4660592	-0.03294	1.05681	0.194
Sex	1.276213	0.03168	2.99566	0.181
(Constant)	97.13679			

* $p < .005$

Table 24

The Correlations and Significance for the Dependent Variable, Machiavellianism and Four Biographical Variables

Variable	Correlation	Significance
Geographic location of residence during adolescence	-.08	$p < .005$
Age	-.14	$p < .005$
Race	-.05	$p < .005$
Sex	.07	$p < .005$

tions and significance for these variables.

Stepwise Multiple Regression Analysis was performed for the dependent variable, job satisfaction, and the independent variables, Machiavellianism, locus of control, years of administrative experience and level of formal education, hierarchically entered in Steps 1-4. A significant relationship ($p < .005$) emerged for all four variables. Manipulativeness, entered in Step 1, explained 5.9% ($p < .005$) of the variance and locus of control, entered in Step 2, accounted for an additional 3.8% ($p < .005$) of the variance in job satisfaction. When administrative experience and educational level were entered into the equation, a continuing signficant relationship ($p < .005$) resulted which explained an additional 1.3% of the variance. The findings suggest that manipulativeness, locus of control, administrative experience and education act in conjunction to provide a weak predictive relationship with job satisfaction. Table 25 shows the variance partitions and F ratios for these findings. Table 26 provides the correlations and significance for these variables.

For the criterion variable, job satisfaction the predictor variables Machiavellianism, locus of control and age were entered hierarchically into Stepwise Multiple Regression Analyses in the following order. When Mach level was entered in Step 1, 5.9% of the variance ($p < .005$) was

Table 25

Analysis of Variance for Regression Analysis Showing the Prediction of Job Satisfaction by Machiavellianism, Locus of Control, Administrative Experience and Education

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	4.	17.85540	4.46385	5.18272*
Residual	169.	145.55890	0.86130	

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Machiavellianism	-0.2427872D-01	-0.19833	0.00970	6.258
Locus of control	-0.4242810D-01	-0.17493	0.01926	4.854
Administrative Experience	-0.1620419D-02	0.01031	0.01185	0.019
Education	0.1530651	0.11730	0.09816	2.432
(Constant)	6.111806			

* $p < .005$

Table 26

The Correlations and Level of Significance between the Dependent Variable, Job Satisfaction and Two Biographical Variables

Variable	Correlation	Significance
Years of administrative experience	.10	$p < .005$
Level of formal education	.13	$p < .005$

explained. Locus of control, entered in Step 2, was the next best predictor of job satisfaction, accounting for an additional 3.8% ($p < .005$) of the variance. Age, entered in Step 3, explained the remaining 1.2% ($p < .005$) of the variance. All three variables accounted for 10.9% of the total variance in job satisfaction. Table 27 shows the variance partitions and F ratios for these findings. Table 28 provides the correlation and significance.

For the dependent variable job satisfaction, the independent variables perceived level of formal control, school enrollment, geographic location of the school district, level of the school, years of administrative experience and the principals' level of formal education were hierarchically entered in Levels 1 through 6. The perceived level of formal control, entered in Step 1, was the best predictor of job satisfaction, explaining 4.6% ($p< .01$) of the variance. When the school enrollment and the geographic location of the school were entered in Steps 2 and 3 respectively, they accounted for 1.3% ($p < .025$) and 2.4% ($p < .025$) of the additional variance in job satisfaction. The level of the school and the years of administrative experience entered in Steps 4 and 5, respectively explained only 1.0% ($p < .01$) and 1.0% ($p < .01$) of the variance in job satisfaction. The level of formal education of the principal, entered in Step 6 explained

Table 27

Analysis of Variance for Regression Analysis Showing the Prediction of Job Satisfaction by Machiavellianism, Locus of Control and Age

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	3.	17.66440	5.88813	6.868
Residual	170.	145.74990	0.85735	*

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Mach	-0.2047298D-01	-0.16724	0.00938	4.762
Locus of control	-0.4517428D-01	-0.18625	0.01876	5.796
Age	0.1404629D-01	0.11077	0.0094	2.230
(Constant)	5.835191			

* $p < .01$

Table 28

The Correlation and Significance between the Dependent Variable, Job Satisfaction and Age

Variable	Correlation	Significance
Age	.17	$p < .01$

the remaining 1.0% ($p < .01$) of the variance in job satisfaction. Thus, of the six independent variables entered hierarchically, the perceived level of formal control explained the most variance followed by the geographic location of the school. Table 29 shows the variance partitions and F ratios for these findings. Table 30 provides the correlations and significance.

For the criterion variable, locus of control, six predictor variables were hierarchically entered into the equation in the following order. The formal level of education, entered in Step 1 explained 3.3% ($p < .025$) of the variance. The years of administrative experience entered in Step 2 was found to be the best predictor of locus of control, explaining 4.0% ($p < .005$) of the variance. The years of teaching experience, entered in Step 3 and age, entered in Step 4 accounted for an additional 1.0% ($p < .005$) and 1.0% ($p < .005$) of the variance in locus of control. Race, entered in Step 5, explained 1.0% ($p < .005$) more variance. Sex, entered in Step 6, explained only .17% ($p < .01$) of the variance in locus of control. Table 31 shows that variance partitions and F ratios for these findings. Table 32 shows the correlations and significance.

Univariate Regression Analyses were performed for the dependent variable, locus of control, and the principal's

Table 29

Analysis of Variance for Regression Analysis Showing the Prediction of Job Satisfaction by Six Job-Relevant Variables

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	6.	17.16809	2.86135	3.268
Residual	166.	145.30162	0.87531	*

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Control	0.1302279	0.24689	0.3914	11.070
Enrollment	0.4136211D-04	0.02942	0.00012	0.118
Geo./School	0.7735478D-01	0.15006	0.04267	3.286
Level of School	-0.5917964D-01	-0.08168	0.05463	1.174
Admin. Exper.	0.1275425D-01	0.08117	0.01174	1.180
Level of Education	0.184461	0.10610	0.09939	1.940
(Constant)	2.610112			

* $p < .01$

Table 30

The Correlations and Level of Significance for the Dependent Variable, Job Satisfaction and the Six Job-Relevant Variables

Variable	Correlation	Significance
Perceived level of formal control	.22	$p < .01$
School enrollment	.10	$p < .025$
Geographic location of the school division	.16	$p < .025$
Level of the school	.07	$p < .01$
Years of administrative experience	.10	$p < .01$
Formal level of education	.13	$p < .01$

Table 31

Analysis of Variance for Regression Analysis Showing the Prediction of Locus of Control by Six Biographical and Job-Relevant Variables

Analysis of Variance	Degrees of Freedom	Sum of Squares	Mean Square	*F* Ratio
Regression	6.	271.22917	45.20486	3.01291
Residual	166.	2490.62160	15.00374	*

Variables in the Equation

Variable	B	Beta	Standard Error of B	*F* Ratio
Education	-1.067623	-0.19845	0.41421	6.644
Admin. Exper.	-0.7437382D-01	-0.11481	-0.05944	1.566
Teaching Exper.	-0.5306807D-01	-0.8333	0.05255	1.020
Age	-0.5750835D-01	-0.10999	0.05016	1.315
Race	-0.6183344	-0.08658	0.054152	1.304
Sex	0.8619709	0.04239	1.56121	0.305
(Constant)	16.31752			

* $p < .01$

Table 32

The Correlations and Level of Significance for the Dependent Variable, Locus of Control and Six Demographic Variables

Variable	Correlation	Significance
Level of formal education	-.20	$p < .025$
Years of administrative experience	-.20	$p < .005$
Years of teaching experience	-.10	$p < .005$
Age	-.20	$p < .005$
Race	-.10	$p < .005$
Sex	.10	$p < .01$

personal variables. These personal variables include the sex, age, race, geographic location of adolescent residence, the level of formal education, years of teaching experience and the years of administrative experience for each respondent. In addition, univariate Regression Analyses were performed for the dependent variable, locus of control, and the administrative situational variables related to the work environment. These situational variables include level of the school, geographic location of the school division, frequency of classroom observation, perceived level of formal control allowed by the school division, school enrollment and the grade levels housed within the school. Only three demographic variables significantly explained the variance in locus of control when entered individually. These are discussed in the ensuing paragraphs according to the order of their importance.

Univariate Regression Analysis was performed for the dependent variable, locus of control, and the independent personal variable, age. When compared to other independent variables entered individually, age was the best single predictor of locus of control explaining 3.9% ($p < .025$) of the variable. Table 33 shows the correlation and significance for this finding. This finding suggests that the personal predictor variable, age, provided a

Table 33

The Correlation and Level of Significance for the Dependent Variable, Locus of Control and Age

Variable	Correlation	Significance
Age	-.20	$p < .05$

miniscule predictive relationship with locus of control.

Univariate Regression Analysis was executed for the criterion variable, locus of control, and the personal predictor variable, years of administrative experience. When compared to other independent demographic variables, entered individually, the years of administrative experience was the next best predictor of locus of control, explaining 3.85% ($p < .01$) of the variance. Table 34 shows the correlation and significance for this finding.

Univariate Regression Analysis was performed for the dependent variable, locus of control, and the independent variable, level of formal education. When compared to the previous two independent demographic variables, entered individually, the level of formal education was least predictive of locus of control, accounting for 3.3% ($p < .05$) of the variance. Table 35 shows the correlation and significance for this finding.

These findings suggest that the three independent variables, age, years of administrative experience and the level of formal education, individually provide minutely predictive relationships with locus of control.

Univariate Regression Analyses were accomplished for the criterion variable locus of control and the 10 remaining demographic variables. None of these independent variables were singly predictive of locus of control.

Table 34

The Correlation and Level of Significance for the Dependent Variable, Locus of Control and Years of Administrative Experience

Variable	Correlation	Significance
Years of administrative experience	-.20	$p < .01$

Table 35

The Correlation and Level of Significance for the Dependent Variable, Locus of Control and Level of Education

Variable	Correlation	Significance
Level of formal education	-.18	$p < .025$

Table 36 shows the correlations and significance for these findings.

Univariate Regression Analyses were performed for the dependent variable, Machiavellianism, and the principal's personal and situational variables related to the work setting. Only one situational variable was predictive of Machiavellianism. This independent variable, years of administrative experience, accounted for 5.7% ($p < .005$) of the variance in manipulativeness. This suggests that the years of administrative experience provide a small predictive relationship with Mach level. The correlation and significance for this finding are shown in Table 37. The correlations and significance for the dependent variable, Mach level and 12 non-significant variables are shown in Table 38.

Univariate Regression Analysis was executed for the criterion variable, job satisfaction and the personal predictor variable, perceived level of formal control allowed by the school division. When compared to other predictor variables entered into univariate Regression Analysis, perceived level of formal control was the best single predictor of job satisfaction, explaining 4.63% ($p < .005$) of the variance.

This suggests that the perceived level of formal control provides a weak predictive relationship with job

Table 36

The Correlations and Levels of Significance for the Dependent Variable, Locus of Control and Ten Independent Variables Entered Into Univariate Regression Analysis

Variable	Correlation	Significance
Grade levels in the school	.12	ns
Location of geographic residence during adolescence	-.12	ns
School enrollment	-.11	ns
Geographic location of the school division	-.11	ns
Sex	.10	ns
Race	-.09	ns
Years of teaching experience	-.07	ns
Perceived level of formal control	.07	ns
Level of the school	.06	ns
Frequency of teacher observations	.03	ns

Table 37

The Correlation and Level of Significance for the Dependent Variable, Machiavellianism and Administrative Experience

Variable	Correlation	Significance
Years of administrative experience	-.24	$p < .005$

Table 38

The Correlations and Levels of Significance for the Dependent Variable, Machiavellianism and Twelve Independent Variables Entered Into Univariate Regression Analyses

Variable	Correlation	Significance
Grade levels in the school	.09	ns
Age	-.14	ns
Level of formal education	.12	ns
Geographic location of adolescent residence	-.08	ns
Sex	.07	ns
Years of teaching experience	-.07	ns
Perceived level of formal control	-.06	ns
Race	.05	ns
Level of the school	.05	ns
Geographic location of the school	-.04	ns
School enrollment	-.02	ns
Frequency of teacher observation	-.02	ns

satisfaction. Table 39 shows the correlation and significance for this finding.

Univariate Regression Analysis was performed for the criterion variable, job satisfaction, and the personal predictor variable, geographic location of adolescent residence. The latter variable was the second best predictor of job satisfaction, accounting for 4.03% ($p < .01$) of the variance. This finding indicates that the independent variable, geographic location of adolescent residence, provides a weak predictive relationship with job satisfaction. Table 40 shows the correlation and significance for this finding.

Univariate Regression Analysis was accomplished for the dependent variable, job satisfaction, and the independent variable, age. Age was found to explain 2.95% ($p < .025$) of the variance in job satisfaction. This suggests that age provides a minutely predictive relationship with job satisfaction. Table 41 offers the correlation and significance for this finding.

Univariate Regression Analysis was executed for the predictor variable, geographic location of the school division and the criterion variable, job satisfaction. Of all four demographic variables which were individually predictive of job satisfaction, geographic location of the school division contributed least (2.48%, $p < .05$) to

Table 39

The Correlation and Level of Significance for the Dependent Variable, Job Satisfaction and Perceived Level of Control

Variable	Correlation	Significance
The perceived level of formal control	.22	$p < .005$

Table 40

The Correlation and Level of Significance for the Dependent Variable, Job Satisfaction and Location of Adolescent Residence

Variable	Correlation	Significance
Geographic location of adolescent residence	.20	$p < .01$

Table 41

The Correlation and Level of Significance for the Dependent Variable, Job Satisfaction and Age

Variable	Correlation	Significance
Age	.17	$p < .025$

the variance in job satisfaction. This finding implies that the geographic location of the school division provides a miniscule predictive relationship with job satisfaction. Table 42 shows the correlation and significance for this finding.

Univariate Regression Analysis were accomplished for the criterion variable, job satisfaction, and the nine remaining predictor variables. None of these independent variables individually were predictive of job satisfaction. Table 43 shows the correlations and significance.

In order to test Hypothesis 2, six multivariate and 39 univariate Regression Analyses were executed to test the combined and individual relationships between the three major variables (i.e., manipulativeness, locus of control and job satisfaction) and 13 demographic variables. As a result, the second experimental hypothesis is validated for the predictor and criterion variables listed below.

For the criterion variable, Machiavellianism, the following predictor variables were significant:

1. Level of formal education
2. School enrollment
3. Years of administrative experience
4. Years of teaching experience
5. Geograhic location of adolescent residence
6. Age

Table 42

The Correlation and Level of Significance for the Dependent Variable, Job Satisfaction and Geographic Location of the School Division

Variable	Correlation	Significance
Geographic location of the school division	.16	$p < .05$

Table 43

The Correlations and Level of Significance for the Dependent Variable, Job Satisfaction and Nine Independent Variables

Variable	Correlation	Significance
Grade levels in the school	-.06	ns
Level of formal education	.13	ns
Years of teaching experience	.12	ns
Sex	-.11	ns
Frequency of teacher observation	-.10	ns
School enrollment	.10	ns
Years of experience as an administrator	.09	ns
Level of the school	-.07	ns
Race	.01	ns

7. Race
8. Sex

For the criterion variable, job satisfaction, the following predictor variables were significant:

1. Years of administrative experience
2. Level of formal education
3. Age
4. Perceived opportunity for formal control
5. School enrollment
6. Level of the school
7. Geographic location of the school division
8. Geographic location of adolescent residence

For the criterion variable locus of control, the following predictor variables were significant:

1. Level of formal education
2. Years of administrative experience
3. Years of teaching experience
4. Age
5. Race
6. Sex

Following an examination of the literature in Mach theory as it relates to recent studies in locus of control, four distinct personality types were synthesized. As a corollory to the two experimental hypotheses it was proffered that recent studies support the construction of a

personality matrix which explains why particular internal or external individuals may endorse interpersonal manipulation while others may not. Within the context of locus of control, manipulativeness is regarded as a behavioral trait which may or may not develop in response to either locus of control contingency. These four contingencies are classified according to the dichotomies of both the I-E and Mach Scales and are presented in Table 44.

Crosstabulation of Mach V Scale and I-E Scale scores was executed to test the aforementioned corollary. It was suggested that the low Mach-Internal (LMI) and high Mach-External (HME) dimensions would contain the greatest frequencies. Moreover, it was offered that the low Mach-Internal (LMI) category would contain the greatest number of cases. Crosstabulation of Mach V Scale scores categorized as high and low Mach and I-E Scale scores, categorized as internal or external, resulted in a matrix which consisted of four quadrants. These four partitions represent the possible locations of any single response on both the Mach V Scale and the I-E Scale. This matrix is presented in Figure 3.

Quadrant A represents a low Mach-External (LME). Quadrant B represents high Mach-External (HME) and Quadrants C and D illustrate high Mach-Internal (HMI) and low Mach-Internal (LMI), respectively. The matrix differs from the

Table 44

The Four Contingencies for Mach Level and Locus of Control

Classification	Abbreviation	Mach Scale	I-E Scale
Low Mach-Internal	LMI	Low Mach	Internal
High Mach-External	HME	High Mach	External
Low Mach-External	LME	Low Mach	External
High Mach-Internal	HMI	High Mach	Internal

Low Mach-External LME (a)	High Mach-External HME (b)
Low Mach-Internal LMI (d)	High Mach-Internal HMI (c)

Figure 3

Mach-IE Matrix

model offered in Chapter 2 in one respect. Instead of separating I-E scores on the basis of quartiles, as suggested in Chapter 2, the dichotomizing of I-E Scale scores was accomplished by separating the scores at or below 7.5 which were then classified as internal and by grouping the remaining scores together which were subsequently labeled, external. The following frequencies and percents were obtained.

For the low Mach-Internal (LMI), 47 scores (27%) were obtained. The high Mach-External category (HME) yielded 23 scores (13.2%) and the high Mach-Internal (HMI) category resulted in 64 cases (36.8%). Lastly, 40 scorers (22.9%) were identified as low Mach-External (LME). These percents are located in Figure 4. Thus, the expected percents, per quadrant, did not result.

Since responses were gained for 77.33% (n = 174) of the total sample (n = 225) obtained from a total population of 512, a verbal respondent study was conducted which consisted of 73.0% (n = 37) of the remaining 51 cases. Relational analyses were therefore limited to univariate Regression Analyses due to the small sample size of the verbal respondent study.

The following analyses were conducted for the verbal respondent study:

1. t tests were executed to ascertain differ-

Low Mach-External LME (a) (n = 40, 22.9%)	High Mach-External HME (b) (n = 23, 13.2%)
Low Mach-Internal LMI (d) (n = 47, 27%)	High Mach-Internal HMI (c) (n = 64, 36.8%)

Figure 4

Mach-IE Matrix With Percents

ences between the respondent and the verbal respondent sample distributions for Machiavellianism, locus of control and job satisfaction.

2. three univariate Regression Analyses were performed for each of the three major variables under investigation (i.e., Machiavellianism, locus of control and job satisfaction), individually relating one major variable to each of the two remaining major variables.

3. thirty-nine univariate Stepwise Regression Analyses were executed for each of the three major variables under investigation (i.e., Machiavellianism, locus of control and job satisfaction and 13 personal and situational variables (i.e., sex, age, race, geographic location of adolescent residence, level of formal education, years of teaching experience, years of administrative experience, level of the school, geographic location of the school division, frequency of classroom observation, perceived level of formal control allowed by the school division, school enrollment and the grade levels within the school.

The findings of these analyses are be reported in the above sequence (i.e., 1 through 3) and categorized according to the order of their importance.

In order to ascertain whether significant differences existed between written respondent and verbal respondent

distributions for the major variables under investigation, t tests were executed. The results indicated that there were no significant differences between written respondent and verbal respondent distributions for the major criterion variable, locus of control. Table 45 shows the frequencies, mean scores, standard deviations and standard errors of estimate for locus of control. Table 46 provides the F value, probability, pooled t value, degrees of freedom and significance for locus of control.

A t test indicated that for the written respondent and verbal respondent distributions, no significant difference was found for the major criterion variable, job satisfaction. Table 47 shows the frequencies, mean scores and standard deviations and the standard errors of estimate for job satisfaction. Table 48 provides the F value, probability, separate t value, degrees of freedom and significance for job satisfaction.

A t test revealed a significant difference between written respondent and verbal respondent distributions for the major criterion variable, Machiavellianism. Table 49 shows the frequencies, mean scores, standard deviations and standard errors of estimate for Machiavellianism. Table 50 shows the F value, probability, separate t value, degrees of freedom and significance for Machiavellianism. Verbal respondents as a group, appeared to be lower on the

Table 45

The Frequencies, Mean Scores, Standard Deviations and Standard Errors of Estimate for Locus of Control for Written Respondent and Verbal Respondent Distributions

Group	Frequency	Mean Score	Standard Deviation	Standard Error of Estimate
Written Respondent	174	7.64	4.007	.304
Verbal Respondent	37	6.51	4.312	.709

Table 46

The F Value, Probability, Pooled T Value, Degrees of Freedom and Significance for the Locus of Control Variable Across the Written Respondent and Verbal Respondent Groups

F Value	2 Tail Probability	Pooled T Value	Degrees of Freedom	Significance
1.16	.529	1.54	209	.126 (ns)

Table 47

The Frequencies, Mean Scores, Standard Deviations and Standard Errors of Estimate for Job Satisfaction for Written Respondent and Verbal Respondent Distributions

Group	Frequency	Mean Score	Standard Deviation	Standard Error of Estimate
Written Respondent	174	4.11	.0972	.074
Verbal Respondent	37	3.78	1.32	.216

Table 48

The F Value, Probability, Separate T Value, Degrees of Freedom and Significance for Job Satisfaction across the Written Respondent and Verbal Respondent Groups

F Value	2 Tail Probability	Separate T Value	Degrees of Freedom	Significance
1.83	.011	1.41	44.71	.166 (ns)

Table 49

The Frequencies, Mean Scores, Standard Deviations and Standard Errors of Estimate for Machiavellianism for Written Respondent and Verbal Respondent Distributions

Group	Frequency	Mean Score	Standard Deviation	Standard Error of Estimate
Written Respondent	174	97.28	7.939	.602
Verbal Respondent	37	81.70	12.771	2.100

Table 50

The F Value, Probability, Separate T Value, Degrees of Freedom and Significance for Machiavellianism across the Written Responent and Verbal Respondent Groups

F Value	2 Tail Probability	Separate T Value	Degrees of Freedom	Significance
2.59	.000	7.13	42.10	.000*

* significance

Machiavellian Instrument than was observed in the responding sample.

Three univariate Regression Analyses were performed for each of the three major criterion variables, Machiavellianism, locus of control and job satisfaction, in order to partial out the univariate relationships between these variables for the verbal respondent study. In all, three successful regression runs were executed. These are listed according to their order of importance to the overall testing of Hypothesis 1 in Table 51.

H_1 There are no significant relationships among the following variables:

> The administrator's Mach orientation categorized as high Mach (measured by a score > 95 on either the Mach IV Scale for verbal respondents or the Mach V Scale for written respondents) or low Mach (measured by a score $\leq$ 95 on the Mach IV Scale for verbal respondents or the Mach V Scale for written respondents);
>
> The administrator's locus of control categorized as external (measured by a score > 7.5 on the Rotter I-E Scale) or internal (measured by a score of $\leq$ 7.5 on the Rotter I-E Scale) and

Table 51

Three Univariate Regression Analyses for the Major Criterion Variables

Criterion Variable	Predictor Variable	% of Variance Explained	Significance
Machiavellianism	Locus of control	40.25	*
Locus of control	Job satisfaction	2.50	---
Machiavellianism	Job satisfaction	.73	---

* $p < .005$

The administrator's job satisfaction categorized as satisfied (by a score of > 4.0 on the Facet-free Job Satisfaction Questionnaire) or less than satisfied (measured by a score of $\leq$ 4.0 on the Facet-free Job Satisfaction Questionnaire).

For the criterion variable, Machiavellianism, and the predictor variable, locus of control, univariate Regression Analysis was performed. Locus of control was found to account for 40.25% ($p < .005$) of the variance in Machiavellianism. This finding indicates that locus of control provides a considerable predictive relationship with Machiavellianism. Table 52 shows the correlation and level of significance.

The remaining univariate Regression runs did not yield significant relationships among the major predictor variables under investigation. Table 53 shows the respective dependent and independent variables, the percent of the variance explained, and level of significance.

As a result of the univariate Regression Analyses which were performed for the three major variables under investigation, Machiavellianism, locus of control and job satisfaction, experimental Hypothesis 1 is validated for the following variables:

Table 52

The Correlation and Level of Significance for the Dependent Variable, Machiavellianism with Locus of Control

Variable	Correlation	Significance
Locus of control	.63	$p < .005$

Table 53

The Correlations, Level of Significance and the Percent of Variance Explained for the Dependent Variables; Locus of Control, and Machiavellianism and the Independent Variable, Job Satisfaction

Dependent Variable	Independent Variable	% of Variance Explained	Correlation	Significance
Locus of control	Jobsat	2.50%	-.16	ns
Mach	Jobsat	.73%	-.09	ns

Criterion Variable	Predictor Variable
Machiavellianism	Locus of control

The experimental Hypothesis 1 is rejected for the following variables:

Criterion Variable	Predictor Variable
Locus of control	Job satisfaction
Machiavellianism	Job satisfaction

For the verbal respondent study, 39 univariate Regression Analyses were executed for the three major criterion variables, job satisfaction, locus of control and Machiavellianism with 13 biographical variables in order to test Hypothesis 2 which is restated below.

H_2 There are no significant relationships among the following variables:

> The administrator's Mach orientation, locus of control, job satisfaction and selected biographical or personal variables which include; sex, age, race, geographic location of adolescent residence, level of formal education, years of teaching experience and years of administrative experience and

The administrator's Mach orientation, locus of control, job satisfaction and selected situational variables which are related to the work setting. These situational variables consist of: level of the school, geographic location of the school division, frequency of classroom observations, perceived level of formal control allowed by the school division, school enrollment and grade levels within the school.

For the dependent variable, locus of control and the independent variable, race, univariate Regression Analysis was performed. Race as found to explain 23.32% ($p < .005$) of the variance in Machiavellianism. This suggests that the race of the verbal respondent provides a moderate predictive relationship with locus of control. Table 54 shows the correlation and significance for this finding.

Univariate Regression Analysis was executed for the dependent variable, locus of control and the 12 remaining independent variables. None of these independent demographic variables were individually predictive of locus of control. Table 55 provides the correlations and significance for these results.

Univariate Regression Analysis was accomplished for the dependent variable job satisfaction, and the independent

Table 54

The Correlation and Level of Significance for the Dependent Variable, Locus of Control and Race

Variable	Correlation	Significance
Race	-.48	$p < .005$

Table 55

The Correlations and Level of Significance for the Dependent Variable, Locus of Control and Twelve Independent Variables

Variable	Correlation	Significance
Sex	.29	ns
Frequency of teacher observations	.25	ns
Level of formal education	.25	ns
Years of teaching experience	.23	ns
Grade levels in the school	-.15	ns
School enrollment	-.20	ns
Age	.15	ns
Geographic location of the school division	-.14	ns
Level of the school	-.10	ns
Geograhic location of adolescent residence	-.07	ns
Perceived level of formal control	-.04	ns
Years of administrative experience	-.02	ns

variable, perceived level of formal control allowed by the school division. The results of this analysis showed that perceived level of formal control explained 19.84% ($p < .01$) of the variance in job satisfaction. This finding suggests that the perceived level of formal control provides a moderate predictive relationship for job satisfaction. Table 56 shows the correlation and level of significance for this finding.

Univariate Regression Analysis was performed for the dependent variable, job satisfaction, and the independent variable, level of formal education of the principal. The administrator's level of formal education explained 15.95% ($p < .025$) of the variance in job satisfaction. This finding suggests that principals' level of formal education provides a small predictive relationship for job satisfaction. Table 57 shows the correlation and level of significance for this finding.

Univariate Regression Analysis was performed for the criterion variable job satisfaction, and the predictor variable, geographic location of the school division. The results of this analysis showed that geographic location of the school division accounted for 15.87% ($p < .025$) of the variance in job satisfaction. This finding indicates that geographic location of the administrator's school division provides a small predictive relationship for job

Table 56

The Correlation and Level of Significance for the Dependent Variable, Job Satisfaction and Perceived Level of Formal Control

Variable	Correlation	Significance
Perceived level of formal control	.45	$p < .01$

Table 57

The Correlation and Level of Significance for the Dependent Variable, Job Satisfaction and Level of Formal Education

Variable	Correlation	Significance
Level of formal education	-.40	$p < .025$

satisfaction. Table 58 shows the correlation and significance for this finding.

Univariate Regression Analyses were executed for the dependent variable, job satisfaction, and the remaining 10 independent variables. None of these independent variables were individually predictive of job satisfaction. Table 59 shows the correlations and significance for these results.

For the dependent variable, Machiavellianism, and the independent variable, race, univariate Regression Analysis was performed. Race was found to account for 12.59% ($p < .05$) of the variance in Machiavellianism. This indicates that the race of the verbal respondent provides a small predictive relationship for Machiavellianism. Table 60 shows the correlation and significance for this finding.

Univariate Regression Analyses were executed for the dependent variable, Machiavellianism, and the 12 remaining independent variables. None of these biographical variables individually were predictive of Machiavellianism. Table 61 shows the correlations and significance for these findings.

As a result of 39 univariate Regression Analyses which were performed for the three major variables, under investigation, locus of control, job satisfaction and Machiavellianism, the experimental Hypothesis 2 is validated for the following variables:

Table 58

The Correlation and Level of Significance Between Job Satisfaction and the Geographic Location of the School Division

Variable	Correlation	Significance
Geographic location of the school division	.40	$p < .025$

Table 59

The Correlations and Level of Significance for the Dependent Variable, Job Satisfaction and Ten Independent Variables

Variable	Correlation	Significance
Race	.30	ns
Grade levels in the school	.17	ns
School enrollment	.26	ns
Frequency of teacher observations	-.14	ns
Geographic location of adolescent residence	.12	ns
Years of teaching experience	-.11	ns
Level of the school	-.09	ns
Years of administrative experience	.08	ns
Age	.04	ns
Sex	-.06	ns

Table 60

The Correlation and Level of Significance for the Dependent Variable, Machiavellianism and Race

Variable	Correlation	Significance
Race	-.35	$p < .005$

Table 61

The Correlations and Level of Significance for the Dependent Variable, Machiavellianism and Twelve Independent Variables

Variable	Correlation	Significance
Years of teaching experience	.33	ns
Frequency of teacher observations	.28	ns
Level of the school	-.25	ns
Grade levels in the school	-.18	ns
Level of formal education	.20	ns
Age	.20	ns
School enrollment	-.19	ns
Perceived level of formal control	-.16	ns
Geographic location of the school division	-.13	ns
Years of administrative experience	.07	ns
Geographic location of adolescence residence	-.01	ns
Sex	.01	ns

Criterion Variable	Predictor Variable
Locus of control	Race
Job satisfaction	Perceived level of formal control
Job satisfaction	Level of formal education
Job satisfaction	Geographic location of the school division
Machiavellianism	Race

The experimental Hypothesis 2 is rejected for the major criterion variables, locus of control, job satisfaction, Machiavellianism and for 34 biographical predictor variables, not addressed in the above list.

For the written respondent sample, a total Mach V Scale mean score of 97.28, a total Rotter I-E Scale score of 7.64, and a total group mean score of 4.11 on the Facet-free Job Satisfaction Questionnaire were obtained. For the verbal respondent study, a total Mach IV Scale mean score of 81.70, a total Rotter I-E Scale score of 6.51 and a total group mean score of 3.78 on the Facet-Free Job Satisfaction Questionnaire were obtained.

The above scores and the relationships discussed in Chapter 4 are best understood in relation to those scores and correlations obtained in recent literature in Machiavellianism, locus of control and job satisfaction, respectively. The total group mean score obtained in this

study ($\overline{M}$ = 97.28) was consistent with the total group mean score which Ahumada (1977) found ($\overline{M}$ = 98.78) in a study which attempted to develop norms for the Mach V Scale. Also consistent with the findings of Ahumada (1977) the female administrators in the present study obtained higher mean scores ($\overline{M}$ = 100.00) than did the male administrators ($\overline{M}$ = 97.16).

With respect to sex differences and locus of control, Rotter (1977) reported "minimal" sex differences in two of three university settings (p. 14), inconsistent with the present study. However, higher I-E Scale scores for the black administrators in the present study ($\overline{M}$ = 8.52) than for the white principals ($\overline{M}$ = 7.47) is consistent with the findings of Lefcourt and Ladwig (1965). Moreover, the negative correlation between externality and job satisfaction obtained by the present study (r = -.26, p < .005) is consistent with the findings of Bhagat and Chassie (1978) concerning externality and personal life satisfaction (r = -.24, p < .01) (p. 321).

Likwise, the total group mean score for job satisfaction, obtained in the present study ($\overline{M}$ = 3.78), is consistent with the scores obtained by Quinn and Shepard (1974) in two national studies which were representative of a cross-section of occupations in 1969 ($\overline{M}$ = 3.75), and in 1973 ($\overline{M}$ = 3.79), using the Facet-free Job Questionnaire

(Quinn & Shepard, 1974, p. 69). Thus, the secondary school principals surveyed by this study, appeared to be as satisfied with their occupation as were those surveyed in a national sample, who were representative of a cross-section of workers in a variety of work settings.

CHAPTER 5

Summary and Conclusions

Review of the Rationale

This study attempted to ascertain whether relationships between two personality constructs could be determined for a sample of secondary level public school principals and if such relationships were identified, whether these factors would predict the administrator's general affective reaction to the work setting. It was reasoned that the verbal and written respondents' locus of control (i.e., the extent to which they feel personally and socially efficacious) would constitute an underlying philosophical framework upon which to base their endorsement or rejection of interpersonal manipulation (i.e., Machiavellianism), which is the second personality construct that this investigation measured.

The field of public school administration and the public school principal in particular, have been scrutinized by behavioral scientists, educational scholars and industrial consultants in order to uncover which personal, stylistic and philosophical determinants would predict effective leadership, healthy staff relations, measurable student benefit and, as a consequence--a more agreeable tax-paying clientele. As a result, after decades of data-gathering, the single most meaningful generalization which has been reiterated throughout the literature in

educational administration has been the commonality of inconclusiveness of the vast majority of the findings. The intention of this study was not to remediate this theoretical void with a prediction formula, which would provide the profession with a more meaningful set of attitudinal and behavioral factors upon which to generate more inquiry. The intention of this study was, however, to select two key factors which are theoretically anathema to the ideals of American education (i.e., the exercise of covert control over the behavior of others--Machiavellianism, and a deterministic or fatalistic view of one's own history and the history of humanity--external locus of control). Based upon this personality trait/state relationship, it was expected that secondary school executives would express a feeling of positive work reinforcement proportional to the degree which they reject manipulativeness and espouse internality. Similarly, it was deduced that the secondary school principal would express a less-than-satisfied feeling toward his or her work setting, proportional to the degree which he or she endorses manipulativeness and externality. The underlying assumption here is that both manipulativeness and externality are theoretically at odds with the democratic ideals of a profession dedicated to the preservation of personal freedom and to

the ability of individuals to singularly or collectively affect personal or societal change.

It is the contention of this thesis that neither manipulativeness nor externality are necessarily negative in and of themselves. It is advanced, however, that interpersonal manipulation as an individual and group trait can be linked to societal, familial and other demographic data. It was surmised that public school principals and secondary school administrators particularly, would express ambivalence toward their work satisfaction as they admitted to the use of an interpersonal device which is in conflict with the idealism which once attracted these professionals to educational leadership. One female nonrespondent who also refused to participate in telephone survey serves as an example. When asked why she did not reply to the written request, she replied that she ". . . was up to (her) waist in alligators." She defended interpersonal manipulation, stating that one must be manipulative to get the job done. When asked to self-report her locus of control she demurred, stating her response would reflect her forthcoming involuntary transfer. Such verbal asides during the 15-30 minute telephone surveys provided valuable feedback. Those administrators who professed low Mach high-Internal (LMI) orientations also professed satisfaction with their job and firm commitment to educational

ideals. Surprisingly, those who complied by telephone were willing to put aside end of the year duties such as graduation rehearsals, assemblies and school closing details in order to devote time to an educational survey. It is noteworthy that 62.13% (n = 23) of the verbal respondents were low Mach-Internal (LMI).

High Mach-External verbal respondent administrators (n = 3, .08%) impressed the researcher with their candidness and willingness to admit to socially less-acceptable statements. The few HME (high Mach-External) principals who were surveyed were distinctly different from their LMI (low Mach-Internal) counterparts. Their honest appraisal and depiction of their daily duties as well as their cognizant perception of the gap between the reality versus the ideals of their profession were noteworthy. Moreover, HME expressed a keen interest in the purpose of the study and interspersed comments with sardonic humor.

Summary of the Results

The statistical analyses which were presented in detail in Chapter 4 are summarized as follows. A significant relationship between the criterion variable, Machiavellianism and five predictor variables; locus of control, level of formal education, school enrollment, years of administrative experience, and years of teaching ex-

perience explained the greatest proportion of the variance (16.19%) than any other linear combination for any of the three major criterion variables investigated. Therefore, when the predictor variables; locus of control, location of adolescent residence, age, race and sex were entered for the predictor variable, Machiavellianism, only 11.24% of the variance was explained. Thus, the latter prediction equation for the dependent variable, Machiavellianism, (i.e., locus of control, geographic location of adolescent residence, age, race and sex) explained 4.95% less variance in Machiavellianism, than did the formula which consisted of locus of control, level of formal education, school enrollment, teaching and administrative experience. Moreover, when the two independent variables, locus of control and job satisfaction were hierarchically entered into Stepwise Multiple Regression Analysis for the dependent variable, manipulativeness, the linear combination which resulted, explained 12.7% of the variance in Mach level. Thus, the interrelationship between the two major variables (i.e., locus of control and job satisfaction) was found to be a more powerful predictor of Mach level than was the linear combination composed of the locus of control and four personal variables (i.e., geographic location of adolescent residence, age, race and sex). However, the independent variables, locus of control and

job satisfaction, entered hierarchically together, were the next best predictor of manipulativeness when compared to the equation which consisted of locus of control, level of formal education, school enrollment and professional experience. It is noteworthy that only one univariate Regression Analysis was significantly related to manipulativeness. A significant negative correlation ($r = -.24$, $p < .005$) in univariate Regression Analysis between Mach level and administrative experience was discerned. This occurence is consistent with the findings of Christie and Geis (1970) regarding the decline of Mach scores as one ages (since years of service are age-related). Therefore, although the independent variable, age, did not approach univariate significance it did show a significant negative correlation ($r = -.14$, $p < .005$) in multivariate analysis. Likewise, the age-related predictor variable, years of teaching experience, although insignificant in univariate analysis, did significantly correlate with Machiavellianism ($r = -.07$, $p < .005$) in multivariate analysis. This suggests, that for this sample, which is representative of the population of secondary school principals in the Commonwealth of Virginia, the years of experience devoted to administering in the educational setting contribute to a lessening of manipulativeness. For reasons other than age or the years of experience, per se (as exemplified by

a larger negative correlation and univariate significance attained by years of administrative experience) the years of educational leadership encourage lowering of Mach orientation. Also, it was ascertained, that for the over-all population of the secondary school principals in Virginia, a less-than-satisfied attitude toward the work setting ($r = -.24$, $p < .005$) and an external locus of control were significantly and negatively correlated ($r = -.26$, $p < .005$) with manipulativeness.

Multivariate and univariate Regression Analysis uncovered more independent variables which were significantly related to the dependent variable, job satisfaction, than for either of the other two major criterion variables, Machiavellianism or locus of control. It is noteworthy, that for job satisfaction, the work-related variables (i.e., perceived opportunity for formal control, school enrollment, geographic location of adolescent residence and level of the school) entered hierarchically in Steps 1 through 4, when combined with two remaining biographical variables (i.e., years of administrative experience and level of formal education) significantly explained the largest proportion of the variance (11.3%). The combined linear equation which consisted of the above four work-related variables (and the two biographical variables) was a better predictor of job satisfaction than were the two

other multivariate prediction formulas in which Mach level, locus of control and one biographical variable were hierarchically entered in Steps 1 through 3. It was concluded, therefore, that the equation which contained the four work-related situational variables, significantly explained more variance in job satisfaction because these predictors inadvertently acted as facet-specific job satisfaction criteria.

As was predicted, both locus of control and Machiavellianism were negatively correlated with job satisfaction. Locus of control explained 6.8% ($p < .005$) of the variance and showed a mild negative correlation ($r = -.26$) with jobsat. Manipulativeness was slightly less predictive of jobsat, accounting for 5.9% of the variance ($p < .005$). Manipulativeness also demonstrated a small negative correlation ($r = -.24$) with jobsat which is consistent with the slightly lower percent of the variance which it explained. Evidence shows, however, that both externality and manipulativeness result in lower job satisfaction for these secondary school administrators which prompts them to become less manipulative as their years of administrative experience increases. The findings also suggest however, that these principals, regardless of Mach level, feel a sense of job satisfaction proportional to the degree to which they perceive that they have sufficient

autonomy or control over the nine job related duties (r = .22, $p < .005$) which they were asked to examine with respect to their own effectiveness. As expected, therefore, the perceived opportunity for formal control explained a proportion of jobsat (4.6%, $p < .005$) which was bested only by locus of control (6.8%, $p < .005$) and manipulativeness (5.9%, $p < .005$).

The univariate and multivariate relationships for locus of control yielded only one significant multivariate linear combination and three significant univariate Regression Analyses for the predictor variables; age, years of administrative experience and level of formal education, respectively. Age was the best univariate predictor of locus of control, explaining 3.9% ($p < .05$) of the variance. Age also showed a low negative correlation (r = -.20) with externality. This particular inverse relationship is in contrast to recent locus of control literature (Bielby & Siegler, 1977) which indicates that the aging process may foster externality in certain subjects. It is consistent with the above findings therefore that the years of administrative experience, when entered as a predictor variable, also sustained a significant negative correlation (r = -.20, $p < .01$) with locus of control. This negative correlation ostensibly appears inconsistent with locus of control literature since administrative

experience is age-related. It is concluded therefore, that for these school administrators, the years of administrative experiences encourage a more internal orientation.

This finding is consistent with the earlier finding which demonstrated a significant negative correlation (r = -.24, $p < .005$) between manipulativeness and the years of administrative experience. One may assume that for both manipulativeness and externality, certain work-related conditions operate for the years of administrative experience which encourage both internal and low Mach orientations. It was shown that the years of administrative experience significantly correlated with locus of control (r = -.20, $p < .005$) and manipulativeness (r = -.24, $p < .005$) and that externality and manipulativeness are negatively related to lower jobsat.

The negative correlation for the predictor variable, level of formal education (r = -.18, $p < .025$) and externality also is understandable. It seems logical that this sample of public school administrators would report internal attitudes which correlated positively with their level of formal education, since ordinarily, it is held that formal education augments inner-directedness and self-confidence.

The remaining predictor variables, race, sex, and

years of teaching experience only attained significance when entered into multivariate analysis with the criterion variable, locus of control. Although race only accounted for 1.0% of the variance in locus of control, the significant negative correlation ($r = -.10$, $p < .005$) is somewhat consistent with the literature in locus of control (Joe, 1971). As one would expect, two minority principals (i.e., black and American Indian) showed higher external orientations than did the white respondents. The two high internal Hispanic administrators are considerably more internal than either the black, white or American Indian administrators.

The result of the multivariate analysis in which the independent variable, sex, was entered in Step 6, for the dependent variable, locus of control, is also consistent with locus of control literature (Joe, 1971). Although sex only accounted for a miniscule percent of the variance (.17%, $p < .05$), females were significantly more external ($\overline{M} = 9.57$) than were the males ($\overline{M} = 7.56$).

Finally, the small negative correlation between the years of teaching experience, when entered hierarchically into Stepwise Regression Analysis in Step 3 ($r = -.10$, $p < .005$), is consistent with the two related independent variables, age and years of administrative experience. Although the minute percent of the variance explained by the

years of teaching experience (1.0%) prohibits serious generalization, it appears that these administrators show a consistent increase in internality according to the number of years of teaching experience and that this decrease in externality continues through the years of administrative experience.

Conclusions

For the personality variable, locus of control, Machiavellianism was positively correlated ($r = .32$, $p < .005$) with externality, consistent with the findings of McClay (1971), Solar and Bruehl (1971), Russell (1974), Levinson and Mahler (1975), Prosciuk and Breen (1976) and Duffy (1977). Contrary to the findings of Rotter (1977), female principals were significantly more external ($r = .10$, $p < .01$) than male principals when sex was entered into hierarchical regression analysis. However, consistent with Rotter (1977), sex explained only .17% of the variance in locus of control in multivariate analysis and was statistically insignificant for the dependent variable; locus of control, in univariate analysis.

Similarly, race was significantly related ($r = -.10$, $p < .005$) to locus of control in hierarchical multivariate Regression Analysis, consistent with Lefcourt and Ladwig (1965). Race also was statistically insignificant, how-

ever, when entered into univariate analysis with locus of control, contrary to Lefcourt and Ladwig (1965). Lastly, locus of control was found to be significantly and negatively related to satisfaction, consistent with the findings of Bhagat and Chassie (1978).

As was stated in the previous discussion of locus of control, manipulativeness was significantly correlated with externality, consistent with the findings of McClay (1971), Solar and Bruehl (1971), Russell (1974), Levinson and Mahler (1975), Prosciuk and Breen (1976) and Duffy (1977). Consistent with Christie and Geis (1970), the age-related criterion variable, years of administrative experience, produced a significant negative correlation ($r = -.24$, $p < .005$) with Mach level. Also, consistent with the findings of Gemmell and Heisler (1977), a significant negative correlation ($r = -.24$, $p < .005$) was found between Machiavellianism and job satisfaction. Consistent with Guterman (1970), the location of geographic residence during adolescence was salient in multivariate Regression Analysis, but contrary to the findings of Guterman (1970) the geographic location of adolescent residence was statistically insignificant in univariate analysis with Mach level. The variable, job satisfaction, was found to be negatively and significantly related ($r = -.24$, $p < .005$) to Machiavellianism, consistent with the findings of

Gemmell and Heisler (1972) and Heisler and Gemmell (1977). Consistent with the findings of Bhagat and Chassie (1978) who predicted a significant relationship ($t = 3.31$, $p < .001$) between internality and life satisfaction, this study found a negative and significant relationship ($r = -.26$, $p < .005$) between job satisfaction and locus of control.

Lastly, the variable, job satisfaction, produced more significant univariate relationships with the demographic variables, than did either of the other two major variables; Machiavellianism or locus of control. It is understandable that these secondary school principals increased in job satisfaction ($r = .22$, $p < .005$) proportionately to their perception of personal control over their job duties.

Significant and positive relationships were also obtained for job satisfaction and the geographic location of the principal's school division ($r = .16$, $p < .05$) and his or her age ($r = .17$, $p < .025$). Although the correlation is weak, it appears that the urbanization of the school division is positively related to job satisfaction. This is contrary to what one would expect, considering the problems which are usually associated with administering urban schools. Finally, the small significant positive relationship obtained for job satisfaction and age is also

unexpected. Given that this correlation (r = .17, p < .025) is weak, it does show an indication which might help dispel the notion that administrative burn-out is inevitable as he or she ages. Due, however to the low correlations, albeit significant, more research is needed to further support and clarify these findings or to contradict these results.

Societal Implications

A brief discussion of the broader purposes of this study is offered following summary of the statistical findings and the conclusions. It was advanced, that for the sample of public school secondary level principals which were surveyed, locus of control was positively related to their endorsement of interpersonal manipulation. Both locus of control and manipulativeness were also found to be negatively related to job satisfaction. Thus, Machiavellianism, locus of control and job satisfaction were significantly related in the directions which were hypothesized.

One might question the necessity of devising a questionnaire which taps these three variables as did one subject who refused to comply with the written survey and mailed back the blank test with the comment that it was "impossible" and "irrelevant to the principalship." Per-

haps further justification from the researcher prompted the subject to complete and return the second measure which was again sent to him. It is noteworthy, that 77.3% of the total sample replied to the survey in writing and another 16.44% consented by telephone, leaving only 6.26% unwilling to reply or unable to be reached. Hence, the number of responses obtained succinctly addresses the need for the study. Moreover, the willingness of many respondents to expand upon their views, on the telephone particularly, was unanticipated. It is the position of this thesis, therefore, these public school administrators enter the profession and aspire to educational leadership based upon a set of values which places a love of learning and a desire to share this enthusiasm above materialistic and status values which prompt others to eschew the profession. It is maintained, however, that in order to cope with their demanding duties, numerous administrators adopt interpersonal manipulation as a survival skill which results in dissonance, measurable in lowered job satisfaction. Christie and Geis (1970) speculate that Mach scores are rising in response to a number of social conditions. Thus, we can expect that the Mach scores of educational leaders will also continue to rise. By a process akin to natural selection, therefore, the complex societal conditions which foster and reward manipulativeness may con-

tinue to confer success upon those administrators who manipulate in order to survive and in order to "get the job done." This phenomenon is not exclusive to education but it is more serious in education by virtue of the nature of the profession. Lastly, this occurence presents thought-provoking questions regarding the qualities of those who would administer in the public schools of the future.

Suggestions for Future Research

This study ascertained significant relationships between the three major variables under investigation; manipulativeness, locus of control and job satisfaction and among these major criterion variables with selected demographic variables. In the future, it is recommended that a facet-specific job satisfaction measure be utilized, unobtrusively embedded in the demographic section and that more personal data, including questions regarding marital status and salary level be used. Because of the success of the telephone interview and the additional insight it provided about the verbal respondents, it is also recommended that a structured interview situation be added to the test condition in which the respondents take the Mach V Scale and I-E Scale, presented in written form. One or two hypothetical situation questions, which ask the prin-

cipal to describe how he or she would react in certain sets of circumstances, could easily be incorporated into an interview. These would tap self-reports of specific behaviors which could be correlated to locus of control, job satisfaction and manipulativeness.

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APPENDIX A

THE MACH V SCALE

THE MACH V SCALE

You will find 20 groups of statements listed below. Each group is composed of three statements. Each statement refers to a way of thinking about people or things in general. They reflect opinions and not matters of fact--there are no "right" or "wrong" answers.

Please read each of the three statements in each group. Then decide first which of the statements is most true or comes the closest to describing your own beliefs. Mark a plus (+) in the space on the answer sheet.

Then decide which of the remaining two statements is most false or is the farthest from your own beliefs. Place a zero (0) in the space on the answer sheet.

Here is an example:

_____A. It is easy to persuade people but hard to keep them persuaded.

__+__B. Theories that run counter to common sense are a waste of time.

__0__C. It is only common sense to go along with what other people are doing and not be too different.

In this case, statement B would be the one you believe in most strongly and A and C would be ones that are not as characteristic of your opinion. Statement C would be the one you believe in least strongly and is least characteristic of your beliefs.

You will find some of the choices easy to make; others will be quite difficult. Do not fail to make a choice no matter how hard it may be. You will mark two statements in each group of three--the one that comes the closest to your own beliefs with a + and the one farthest from your beliefs with a 0. The remaining statements should be left unmarked.

Please do not omit any groups of statements.

1. A. It takes more imagination to be a successful criminal than a successful business man.
   B. The phrase, "the road to hell is paved with good intentions" contains a lot of truth.
   C. Most men forget more easily the death of their father than the loss of their property.

2. A. Men are more concerned with the car they drive than with the clothes their wives wear.
   B. It is very important that imagination and creativity in children be cultivated.
   C. People suffering from incurable diseases should have the choice of being put painlessly to death.

3. A. Never tell anyone the real reason you did something unless it is useful to do so.
   B. The well-being of the individual is the goal that should be worked for before anything else.
   C. Once a truly intelligent person makes up his mind about the answer to a problem he rarely continues to think about it.

4. A. People are getting so lazy and self-indulgent that it is bad for our country.
   B. The best way to handle people is to tell them what they want to hear.
   C. It would be a good thing if people were kinder to others less fortunate than themselves.

5. A. Most people are basically good and kind.
   B. The best criterion for a wife or husband is compatability--other characteristics are nice but not essential.
   C. Only after a man has gotten what he wants from life should he concern himself with the injustices in the world.

6. A. Most people who get ahead in the world lead clean, moral lives.
   B. Any man worth his salt shouldn't be blamed for putting his career above his family.
   C. People would be better off if they were concerned less with how to do things and more with what to do.

7. A. A good teacher is one who points out unanswered questions rather than gives explicit answers.
   B. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which might carry more weight.
   C. A person's job is the best single guide as to the sort of person he is.

8. A. The construction of such monumental works as the Egyptian pyramids was worth the enslavement of the workers who built them.
   B. Once a way of handling problems has been worked out it is best to stick with it.
   C. One should take action only when one is sure that it is morally right.

9. A. The world would be a much better place to live in if people would let the future take care of itself and concern themselves only with enjoying the present.
   B. It is wise to flatter important people.
   C. Once a decision has been made, it is best to keep changing it as new circumstances arise.

10. A. It is a good policy to act as if you are doing the things you do because you have no other choice.
    B. The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.
    C. Even the most hardened and vicious criminal has a spark of decency somewhere within him.

11. A. All in all, it is better to be humble and honest than to be important and dishonest.
    B. A man who is able and willing to work hard has a good chance of succeeding in whatever he wants to do.
    C. If a thing does not help us in our daily lives, it isn't very important.

12. A. A person shouldn't be punished for breaking a law which he thinks is unreasonable.
    B. Too many criminals are not punished for their crimes.
    C. There is no excuse for lying to someone else.

13. A. Generally speaking, men won't work hard unless they're forced to do so.
    B. Every person is entitled to a second chance, even after he commits a serious mistake.
    C. People who can't make up their minds aren't worth bothering about.

14. A. A man's first responsibility is to his wife, not his mother.
    B. Most men are brave.
    C. It's best to pick friends who are intellectually stimulating rather than those it is comfortable to be around.

15. A. There are very few people in the world worth concerning oneself about.
    B. It is hard to get ahead without cutting corners here and there.
    C. A capable person motivated for his own gain is more useful to society than a well-meaning but ineffective one.

16. A. It is best to give others the impression that you can change your mind easily.
    B. It is a good working policy to keep on good terms with everyone.
    C. Honesty is the best policy in all cases.

17. A. It is possible to be good in all respects.
    B. To help oneself is good; to help others, even better.
    C. War and threats of war are unchangeable facts of human life.

18. A. Barnum was probably right when he said that there's at least one sucker born every minute.
    B. Life is pretty dull unless one deliberately stirs up some excitement.
    C. Most people would be better off if they controlled their emotions.

19. A. Sensitivity to the feelings of others is worth more than poise in social situations.
    B. The ideal society is one where everybody knows his place and accepts it.
    C. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.

20. A. People who talk about abstract problems usually don't know what they are talking about.
    B. Anyone who completely trusts anyone else is asking for trouble.
    C. It is essential for the functioning of a democracy that everyone vote.

APPENDIX B

THE MACH IV SCALE

THE MACH IV SCALE

1. Never tell anyone the real reason you did something unless it is useful to do so.

2. The best way to handle people is to tell them what they want to hear.

3. One should take action only when sure it is morally right.

4. Most people are basically good and kind.

5. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.

6. Honesty is the best policy in all cases.

7. There is no excuse for lying to someone else.

8. Generally speaking, men won't work hard unless they're forced to do so.

9. All in all, it is better to be humble and honest than to be important and dishonest.

10. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which carry more weight.

11. Most people who get ahead in the world lead clean, moral lives.

12. Anyone who completely trusts anyone else is asking for trouble.

13. The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.

14. Most men are brave.

15. It is wise to flatter important people.

16. It is possible to be good in all respects.

17. Barnum was wrong when he said that there's a sucker born every minute.

18. It is hard to get ahead without cutting corners here and there.

19. People suffering from incurable diseases should have the choice of being put painlessly to death.

20. Most men forget more easily the death of their father than the loss of their property.

APPENDIX C

THE FACET-FREE JOB SATISFACTION QUESTIONNAIRE

THE FACET-FREE JOB SATISFACTION QUESTIONNAIRE

Please answer all the questions listed below as follows. Using a number 2 pencil, mark the column of the answer sheet which is numbeed correspondingly to the response which you wish to select.

6. How satisfied are you with you job?

   1. very satisfied
   2. somewhat satisfied
   3. not too satisfied
   4. not at all satisfied

7. If you were free to go into any type of job you wanted, what would your choice be?

   I would prefer:
   1. the job I now have
   2. to retire and not work at all
   3. some other job to the job I now have

8. If you had to decide all over again whether to take the job you now have, what would you decide?

   I would:
   1. decide without hesitation to take the same job
   2. have some second thoughts about taking the same job
   3. decide definitely not to take the job

9. In general, how well would you say that you job measures up to the sort of job you wanted when you took it?

   It is:
   1. very much like the job I wanted
   2. somewhat like the job I wanted
   3. not very much like the job I wanted

10. If a good friend of yours told you (he/she) was interested in working in a job like yours for your employer, what would you tell (him/her)?

    I would:
    1. strongly recommend it
    2. have doubts about recommending it
    3. strongly advise against it

APPENDIX D

THE MODIFIED I-E SCALE

THE MODIFIED I-E SCALE

For each of the 12 questions, please circle the one letter before the response which best reflects your beliefs. Please answer all of the items.

1. A. In the long run people get the respect they deserve in this world.
   B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

2. A. Without the right breaks one cannot be an effective leader.
   B. Capable people who fail to become leaders have not taken advantage of their opportunities.

3. A. As many of the unhappy things in people's lives are partly due to bad luck.
   B. People's misfortunes result from the mistakes they make.

4. A. One of the major reasons why we have wars is because people don't take enough interest in politics.
   B. There will always be wars, no matter how hard people try to prevent them.

5. A. When I make plans, I am almost certain that I can make them work.
   B. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

6. A. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
   B. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

7. A. Many times I feel that I have little influence over the things that happen to me.
   B. It is impossible for me to believe that chance or luck plays an important role in my life.

8. A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
   B. Getting a good job depends mainly on being in the right place at the right time.

9. A. In my case getting what I want has little or nothing to do with luck.
   B. Many times we might just as well decide what to do by flipping a coin.

10. A. Most people don't realize the extent to which their lives are controlled by accidental happenings.
    B. There really is no such thing as "luck."

11. A. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
    B. By taking an active part in political and social affairs the people can control world events.

12. A. What happens to me is my own doing.
    B. Sometimes I feel that I don't have enough control over the direction my life is taking.

APPENDIX E

LETTERS OF PERMISSION

June 24, 1980

Academic Press, Inc.
Subs of Harcourt Brace & Co.

Gentlemen:

I am a graduate student at Virginia Polytechnic Institute and State University, Blacksburg, Va., completing degree requirements for the Doctor of Education degree. My dissertation probes the relationships between the Job-Satisfaction of public school administrators and their Machiavellian orientation as discussed by Richard Christie and Florence Geis in Studies in Machiavellianism. This communication is intended to request permission to duplicate and utilize the Mach V scale as it appears on pages 22 through 25. Permission is also requested to reproduce and use the Mach IV scale as it appears on pages 17 through 18, should this researcher determine that is is necessary for her study.

Beyond the scope of my dissertation, no other use is to be made of this material.

Your prompt attention and reply is sincerely appreciated.

Yours truly,

July 10, 1980

PERMISSION GRANTED, provided that each copy carries a complete notation of the source. with our copyright line.

Rights and Permissions

Please pardon the informality but to speed our reply we have answered on your own letter.

June 29, 1980

Survey Research Center
The Institute for Social Research
The University Of Michigan

Gentlemen:

I am a graduate student at Virginia Polytechnic Institute and State University, Blacksburg, Va., completing requirements for the Doctor of Education degree. My dissertation probes the relationships between the Job-Satisfaction of public school administrators and their personality orientation. This communication is intended to request permission to duplicate and use the Facet-free Job Satisfaction Measure printed on pages 54-55 of the 1972-73 Quality of Employment Survey by Robert P. Quinn and Linda J. Shepard. Permission is also requested to reproduce and utilize the Facet-specific Job-Satisfaction Measure printed on pages 63-68 of the same document, should this researcher determine that it is necessary for her study. Beyond the scope of the doctoral dissertation, no other use is to made of this material.

I understand that the measures were intended for use in an interview, card-sort procedure. I wonder, however, if they may be employed in a questionnaire format either individually or together? If you have any comments regarding the alteration of either their validity or their reliability as a result of this administration change, I would appreciate your advisement. Please also inform me if the following materials are already available and if so, of their cost and how they might be obtained:

--scoring directions
--answer sheets and keys
--new norms; validity, reliability
--usability information.

Thank you in advance for any assistance which you may be able to provide to me and to the advancement of scholarly research.

Your prompt reply to my request is also appreciated since I hope to begin sampling procedures shortly.

Yours truly,

ISR

SURVEY RESEARCH CENTER / INSTITUTE FOR SOCIAL RESEARCH / THE UNIVERSITY OF MICHIGAN / ANN ARBOR, MICHIGAN 48106

10 July 1980

Dear :

The measures from the Quality of Employment Survey you propose to use are in the public domain, as are all of the survey's measures (unless otherwise indicated in the book). They can, therefore, be used without permission.

The scale values used for the facet-free items are shown in parentheses in Table 3.26. The facet-specific items used a 1, 2, 3, 4 scale where 1 = not at all true. Scale scores were the means of the constituent items.

I have no information on the use of the items in a written questionnaire, although many people have used them as you propose to. Some of the items came, in fact, from written questionnaires. Furthermore, a card sort is closer to a written questionnaire than it is to an interview question. You might, however, anticipate slightly more skipped questions when you use a written questionnaire.

The order in which the facet-free items were presented is shown on page 309 of the 1972-73 volume.

Omit item 12 ("friendly and helpful"). The reason for this is explained in footnote **** of the enclosed materials.

1977 norms and reliabilities are enclosed.

The overall measure is an equally weighted mean of the facet-free and facet-specifid measures, with the latter two normalized using their 1973 means and standard deviations. The resulting mean is then multiplied by 100 to remove decimals, viz.:

$$\text{overall} = 100\ \frac{[(\text{facet-specific}-3.24)/0.48] + [(\text{facet-free}-3.75)/1.05]}{2}$$

I hope the above provides the information you need. Good luck with your dissertation.

Sincerely,

RPQ/jw
enc.

Associate Research Scientist

The University of Connecticut

STORRS, CONNECTICUT 06268

THE COLLEGE OF
LIBERAL ARTS AND SCIENCES
Department of Psychology

May 27, 1981

Mary Lynn Richford

Dear Ms. Richford:

You have my permission to reproduce the I-E Scale for your research, providing you are supervised by, or consult with someone who is trained in the use and interpretation of personality tests.

Very truly yours,

JBR/isw

Professor of Psychology

APPENDIX F

THE EDUCATOR'S INVENTORY

COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

IN NORTHERN VIRGINIA AT DULLES INTERNATIONAL AIRPORT—400 WEST SERVICE ROAD

Dear Educator:

You have been selected to participate in a study to determine the philosophical orientation and personal belief systems of secondary school principals. To my knowledge, this investigation has not yet been researched. Your personal assistance to this project will contribute to a better understanding of the contemporary administrator and his/her philosophical perspective.

As a former secondary school administrator, I understand that professionally, there are increasing demands placed upon your time. The completion of the enclosed questionnaire will take approximately 15 minutes. For this valuable service I would like to repay you. As a full-time doctoral student, I am unable to do so. I am therefore enclosing a packet of coffee for you to enjoy. Please have a cup on me. A summary of the results of this study will also be mailed to you, upon your request by checking the appropriate box on the Educator's Inventory.

Please be assured that the responses to this investigation are completely confidential. No data will be released under any circumstances regarding an individual's responses. A numeral is assigned to each respondent for tabulation purposes only. Enclosed is a stamped envelope in which to return the questionnaire.

Your personal assistance to this research is greatly appreciated. Your contribution, particularly, will provide a more accurate understanding of the secondary principalship. More importantly, your response will effect a better appreciation for the secondary school principal, a unique professional whose considerable duties increase yearly.

If you have any questions, please call either of the following telephone numbers:

Yours truly,

Jim C. Fortune
Principal Investigator Professor of Educational Research

Mailing Address: Dulles International Airport, P. O. Box 17186, Washington, D. C. 20041

Dear Educator:

Several weeks ago you were invited to participate in a study of the philosophical orientation and personal belief systems of secondary school administrators. The purpose of this investigation is to provide data which will effect a better understanding of and appreciation for the secondary school principalship. Your contribution is most important if we are to ascertain an accurate representation of the views and attitudes of contemporary educational leaders.

I am enclosing a second instrument packet. The Educator's Inventory is a brief questionnaire which will take approximately 15 minutes of your time. Also enclosed is a stamped envelope in which to return the measure.

Please be advised that the results of your efforts will be treated both confidentially and professionally. No data will be released under any circumstances regarding the responses of individual respondents.

A summary of this study's results will be mailed to you upon your request, by checking the appropriate box on the Educator's Inventory.

Thank you in advance for the gracious gift of your professional attention to this endeavor. It is hoped that your contribution will result in a clear depiction of the belief structure of an important educational leader--the secondary school principal.

Yours truly,

Principal Investigator

Jim C. Fortune
Professor of Educational Research

THE EDUCATOR'S INVENTORY

Philosophical Orientation Questionnaire

You will find 20 groups of statements listed below. Each group is composed of three statements. Each statement refers to a way of thinking about people or things in general. They reflect opinions and not matters of fact--there are no "right or "wrong" answers.

Please read each of the three in each group. Then decide first which of the statements is most true or comes the closest to describing your own beliefs. Mark a plus (+) in the space on the answer sheet.

Then decide which of the remaining two statements is most false or is the farthest from your own beliefs. Place a zero (0) in the space on the answer sheet.

Here is an example:

_____A. It is easy to persuade people but hard to keep them persuaded.

__+__B. Theories that run counter to common sense are a waste of time.

__0__C. It is only common sense to go along with what other people are doing and not be too different.

In this case, statement B would be the one you believe in most strongly and A and C would be ones that are not as characteristic of your opinion. Statement C would be the one you believe in least strongly and is least characteristic of your beliefs.

You will find some of the choices easy to make; others will be quite difficult. Do not fail to make a choice no matter how hard it may be. You will mark two statements in each group of three--the one that comes the closest to your own beliefs with a + and the one farthest from your beliefs with a 0. The remaining statements should be left unmarked.

Please do not omit any groups of statements.

1. ____ A. It takes more imagination to be a successful criminal than a successful business man.
   ____ B. The phrase, "the road to hell is paved with good intentions" contains a lot of truth.
   ____ C. Most men forget more easily the death of their father than the loss of their property.

2. ____ A. Men are more concerned with the car they drive than with the clothes their wives wear.
   ____ B. It is very important that imagination and creativity in children be cultivated.
   ____ C. People suffering from incurable diseases should have the choice of being put painlessly to death.

3. ____ A. Never tell anyone the real reason you did something unless it is useful to do so.
   ____ B. The well-being of the individual is the goal that should be worked for before anything else.
   ____ C. Once a truly intelligent person makes up his mind about the answer to a problem he rarely continues to think about it.

4. ____ A. People are getting so lazy and self-indulgent that it is bad for our country.
   ____ B. The best way to handle people is to tell them what they want to hear.
   ____ C. It would be a good thing if people were kinder to others less fortunate than themselves.

5. ____ A. Most people are basically good and kind.
   ____ B. The best criterion for a wife or husband is compatability--other characteristics are nice but not essential.
   ____ C. Only after a man has gotten what he wants from life should he concern himself with the injustices in the world.

6. ____ A. Most people who get ahead in the world lead clean, moral lives.
   ____ B. Any man worth his salt shouldn't be blamed for putting his career above his family.
   ____ C. People would be better off if they were concerned less with how to do things and more with what to do.

7. ____ A. A good teacher is one who points out unanswered questions rather than gives explicit answers.
____ B. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which might carry more weight.
____ C. A person's job is the best single guide as to the sort of person he is.

8. ____ A. The construction of such monumental works as the Egyptian pyramids was worth the enslavement of the workers who built them.
____ B. Once a way of handling problems has been worked out it is best to stick with it.
____ C. One should take action only when one is sure that it is morally right.

9. ____ A. The world would be a much better place to live in if people would let the future take care of itself and concern themselves only with enjoying the present.
____ B. It is wise to flatter important people.
____ C. Once a decision has been made, it is best to keep changing it as new circumstances arise.

10. ____ A. It is a good policy to act as if you are doing the things you do because you have no other choice.
____ B. The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.
____ C. Even the most hardened and vicious criminal has a spark of decency somewhere within him.

11. ____ A. All in all, it is better to be humble and honest than to be important and dishonest.
____ B. A man who is able and willing to work hard has a good chance of succeeding in whatever he wants to do.
____ C. If a thing does not help us in our daily lives, it isn't very important.

12. ____ A. A person shouldn't be punished for breaking a law which he thinks is unreasonable.
____ B. Too many criminals are not punished for their crimes.
____ C. There is no excuse for lying to someone else.

13. ____ A. Generally speaking, men won't work hard unless they're forced to do so.
____ B. Every person is entitled to a second chance, even after he commits a serious mistake.
____ C. People who can't make up their minds aren't worth bothering about.

14. ____ A. A man's first responsibility is to his wife, not his mother.
____ B. Most men are brave.
____ C. It's best to pick friends who are intellectually stimulating rather than those it is comfortable to be around.

15. ____ A. There are very few people in the world worth concerning oneself about.
____ B. It is hard to get ahead without cutting corners here and there.
____ C. A capable person motivated for his own gain is more useful to society than a well-meaning but ineffective one.

16. ____ A. It is best to give others the impression that you can change your mind easily.
____ B. It is a good working policy to keep on good terms with everyone.
____ C. Honesty is the best policy in all cases.

17. ____ A. It is possible to be good in all respects.
____ B. To help oneself is good; to help others, even better.
____ C. War and threats of war are unchangeable facts of human life.

18. ____ A. Barnum was probably right when he said that there's at least one sucker born every minute.
____ B. Life is pretty dull unless one deliberately stirs up some excitement.
____ C. Most people would be better off if they controlled their emotions.

19. ____ A. Sensitivity to the feelings of others is worth more than poise in social situations.
____ B. The ideal society is one where everybody knows his place and accepts it.
____ C. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.

20. ____ A. People who talk about abstract problems usually don't know what they are talking about.
____ B. Anyone who completely trusts anyone else is asking for trouble.
____ C. It is essential for the functioning of a democracy that everyone vote.

Educator's Belief System

Place a check _x_ on the blank before the one response which more closely reflects your attitudes. Please answer all items by checking one statement.

1. ____ A. Many of the unhappy things in people's lives are partly due to bad luck.
   ____ B. People's misfortunes result from the mistakes they make.

2. ____ A. One of the major reasons why we have wars is because people don't take enough interest in politics.
   ____ B. There will always be wars, no matter how hard people try to prevent them.

3. ____ A. In the long run people get the respect they deserve in this world.
   ____ B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

4. ____ A. The idea that teachers are unfair to students is nonsense.
   ____ B. Most students don't realize the extent to which their grades are influenced by accidental happenings.

5. ____ A. Without the right breaks one cannot be an effective leader.
   ____ B. Capable people who fail to become leaders have not taken advantage of their opportunities.

6. ____ A. No matter how hard you try some people just don't like you.
   ____ B. People who can't get others to like them don't understand how to get along with others.

7. ____ A. I have often found that what is going to happen will happen.
   ____ B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

8. ____ A. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
____ B. Many times exam questions tend to be so unrelated to course work that studying is really useless.

9. ____ A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
____ B. Getting a good job depends mainly on being in the right place at the right time.

10. ____ A. The average citizen can have an influence in government decisions.
____ B. The world is run by the few people in power, and there is not much the little guy can do about it.

11. ____ A. When I make plans, I am almost certain that I can make them work.
____ B. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

12. ____ A. In my case getting what I want has little or nothing to do with luck.
____ B. Many times we might just as well deciee what to do by flipping a coin.

13. ____ A. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
____ B. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

14. ____ A. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
____ B. By taking an active part in political and social affairs the people can control world events.

15. ____ A. Most people don't realize the extent to which their lives are controlled by accidental happenings.
____ B. There really is no such thing as "luck."

16. ____ A. It is hard to know whether or not a person really likes you.
____ B. How many friends you have depends on how nice a person you are.

17. ____ A. In the long run the bad things that happen to us are balanced by the good ones.
____ B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

18. ____ A. With enough effort we can wipe out political corruption.
____ B. It is difficult for people to have much control over the things politicians do in office.

19. ____ A. Sometimes I can't understand how teachers arrive at the grades they give.
____ B. There is a direct connection between how hard I study and the grades I get.

20. ____ A. Many times I feel that I have little influence over the things that happen to me.
____ B. It is impossible for me to believe that chance or luck plays an important role in my life.

21. ____ A. People are lonely because they don't try to be friendly.
____ B. There's not much use in trying too hard to please people, if they like you, they like you.

22. ____ A. What happens to me is my own doing.
____ B. Sometime I feel that I don't have enough control over the direction my life is taking.

23. ____ A. Most of the time I can't understand why politicians behave the way they do.
____ B. In the long run the people are responsible for bad government on a national as well as on a local level.

Personal Status

Thank you for your assistance. Will you please answer the following questions about yourself? All responses will be treated confidentially. Please respond to each item.

1. Are you male or female?

   _____ male

   _____ female

2. How old are you?

   _____ years old

3. Which of the following groups best describes you?

   _____ Black _____ American Indian

   _____ White _____ Spanish Descent

   _____ Oriental _____ other _____
   (Please specify.)

4. What is the level of the school which you supervise?

   _____ middle school _____ high school

   _____ intermediate school _____ secondary school

   _____ junior high school _____ other_____
   (Please specify.)

5. How satisfied are you with you job? (Select One)

   _____ very satisfied

   _____ somewhat satisfied

   _____ not too satisfied

   _____ not at all satisfied

6. In which type of community have you spent most of your adolescent years, ages 12-18? If you are unsure, please give your best estimate.

_____ In the open country or in a farming community

_____ In a small town (less than 10,000 POP.) that was not a suburb

_____ Inside a medium-sized city (10,000-100,000)

_____ In a suburb of a medium-sized city

_____ Inside a large city (100,000-500,000 POP.)

_____ In a very large city (over 500,000 POP.)

_____ In a suburb of a very large city (over 500,000)

_____ other_____
(Please specify.)

7. How frequently do you observe classroom instruction?

_____ once or more each week

_____ two or three times each month

_____ once or twice each month

_____ less than once each month

_____ other _____
(Please specify.)

8. If you were free to go into any type of job you wanted, what would your choice be? (Select One)

I would prefer:

_____ the job I now have
_____ to retire and not work at all
_____ some other job to the job I now have

9. Place a check before only those areas where you feel that you have adequate autonomy or control in order to do your job. Please leave blank those items where such authority rests elsewhere (i.e., with the superintendent, the school board, the faculty).

___ choice of the curriculum
___ teacher selection
___ student discipline
___ extra-curriculur activities
___ budgeting
___ resource allocation
___ student attendance
___ professional evaluation
___ duty assignment
___ other _____ (Please specify.)

10. If you had to decide all over again whether to take the job you now have, what would you decide. (Select One)

I would:

_____ decide without hesitation to take the same job
_____ have some second thoughts about taking the same job
_____ decide definitely not to take the job

11. Which of the following statements best describes the community where your school division is located? (Please estimate if unsure.)

_____ In the open country or in a farming community
_____ In a small town (less than 10,000 people but not a suburb
_____ Inside a medium-sized city (10,000-100,000)
_____ In a suburb of a medium-sized city
_____ Inside a large city (100,000-500,000 POP.)
_____ In a very large city (over 500,000 POP.)
_____ In a suburb of a very large city (over 500,000)
_____ other_____ (Please specify.)

12. In general, how well would you say that you job measures up to the sort of job you wanted when you took it? (Please select one response).

    It is:

    _____ very much like the job I wanted
    _____ somewhat like the job I wanted
    _____ not very much like the job I wanted

13. What is the total pupil enrollment of your school building?

    _____ students

14. What grade levels are housed in your school building?

    grades; ___,___,___,___,___,___,___,____,___

15. What is the higest earned degree that you hold?

    _____ No degree
    _____ Bachelor's degree
    _____ Bachelor's degree plus some graduate work
    _____ Master's degree
    _____ Six-year specialist degree
    _____ Doctor's degree

16. Including this year as one full year, how many years of full-time educational experience have you had? (Include both public and non-public school).

    Experience as a teacher _____ years

    Experience as an administrator _____ years

17. If a good friend of yours told you he/she was interested in working in a job like yours for your employer, what you you tell him/her? (Select one response).

I would:

_____ strongly recommend it

_____ have some doubts about recommending it

_____ strongly advise against it

YOUR COOPERATION IS SINCERELY APPRECIATED. Please place a check in the box below if you desire a copy of this study's results.

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APPENDIX G

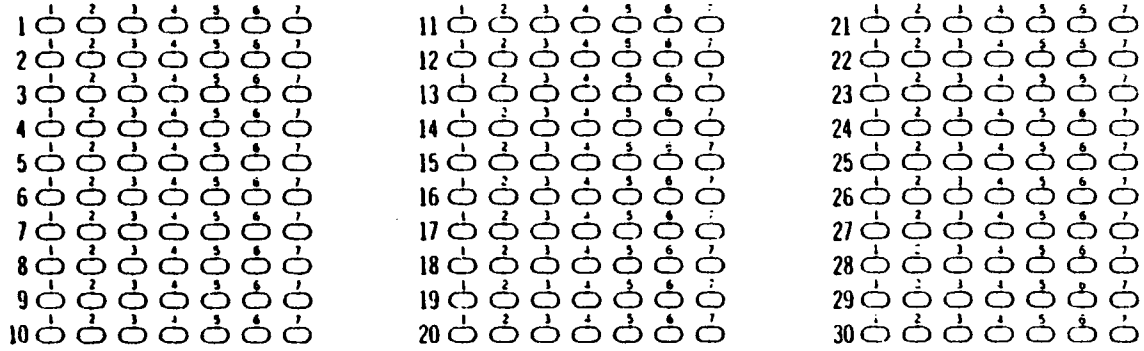
THE PILOT STUDY ANSWER SHEET

Pilot Study Only

EDUCATOR'S INVENTORY

SECTION I

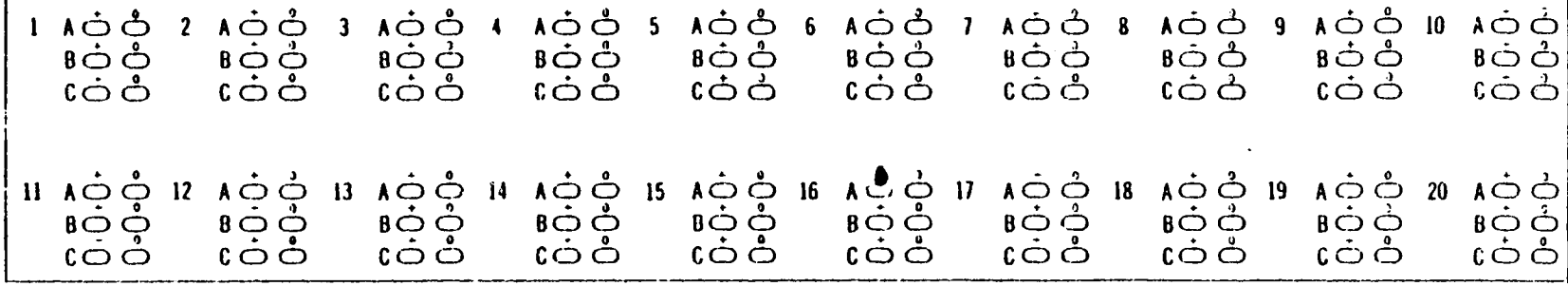
Personal Status , Q. 1-5
Job Satisfaction, Q. 6-10



PERSONALITY INVENTORY II

MARK ONLY ONE + AND ONLY ONE 0 FOR EACH SET OF THREE STATEMENTS.

+ = AGREE MOST (OR DISAGREE LEAST) OF THESE STATEMENTS
0 = DISAGREE MOST (OR AGREE LEAST) OF THESE STATEMENTS



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A STUDY OF THE MACHIAVELLIAN ORIENTATION LOCUS OF CONTROL AND JOB SATISFACTION OF A SELECTED SAMPLE OF VIRGINIA PUBLIC SCHOOL SECONDARY LEVEL PRINCIPALS

by

Mary Lynn Richford

(ABSTRACT)

This study investigated the relationships between two personality variables, Machiavellianism (i.e., manipulativeness) and locus of control as well as the combined relationships of these two variables with a third, affective variable, job satisfaction. A sample of 225 public school secondary level administrators were given the Mach IV Scale, the Mach V Scale, the Facet-free Job Satisfaction Questionnaire, the Rotter I-E Scale and a bibliographic personal status questionnaire.

The literature reveals that high Machs outperform low Machs when three personal and situational conditions occur. Moreover, Mach orientation correlates with external locus of control and low job satisfaction. All three of the predicted relationships were found to be significantly related as hypothesized.