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Manipulative Skills And Educational Personnel

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MANIPULATIVE SKILLS AND EDUCATIONAL PERSONNEL

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MANIPULATIVE SKILLS AND EDUCATIONAL PERSONNEL

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DISSERTATION

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MANIPULATIVE SKILLS AND EDUCATIONAL PERSONNEL

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A primary purpose of this study was to determine the Mach V norms for educators in elementary education, secondary education, guidance and counseling, and educational administration as well as for the group as a whole. A second primary purpose was to investigate the possibility of a relationship between an individual's interpersonal interaction style and his predicted "success" as a school administrator.

The study employed a sample of 226 practicing educators taken from a universe of 758.

Building upon the work of Machiavelli, Christie and Geis developed the Mach V Scale which is drawn from their interpersonal interaction model. The Mach V Scale identifies two interpersonal interaction styles: affective and analytical.

The theoretical relationships presented in professional education literature between interpersonal manipulation and other behaviors characteristic of analytically oriented individuals and the kinds of behaviors required for people who occupy the roles of administrator, teacher, or counselor form a basis for understanding the distribution

of manipulative skills amongst educators and their various subgroups.

No significant differences in interpersonal orientation were found among the four areas of specialization considered, i.e., elementary education ($\bar{x}$ = 96.07), secondary education ($\bar{x}$ = 98.6), guidance and counseling ($\bar{x}$ = 97.55), and educational administration ($\bar{x}$ = 98.78). The mean for the whole group comprised of all four specializations was 97.98.

Among the four educational specializations used in this study the highest mean (100.05), on the Mach V Scale was that of female secondary education majors and the lowest was that of female elementary education majors (95.89). This difference was significant at the .05 level.

Although not significantly so, females had higher means than males in educational administration and in secondary education. Male means were higher than female means in education as a whole and in the guidance and counseling group.

Analytically oriented educational administration students were predicted probable later "successes" significantly more frequently than their affectively oriented counterparts. The general male undergraduate population scored significantly higher on the Mach V Scale than their male educator counterparts. The general

female undergraduate population however, scored significantly lower on the Mach V Scale than their female educator counterparts.

Age, religion, years of educational experience and sex did not signficantly influence the Mach distribution in this study.

The availability of norms for the Mach V Scale in the areas of administration, teaching, and counseling is a step forward in the Mach V's implementation as a conceptual tool for the selection, recruitment, and placement of administrators, counselors, and teachers. This study also opens doors to further research in the area of interpersonal orientation and its relation to "success" in teaching, counseling, and administration.

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CHAPTER I

THE PROBLEM

Introduction

"The problem of interpersonal power has engaged writers and thinkers in western and non-western cultures for centuries."[1] Christie and Geis point out (1) that although we are inclined to think that man first exercised power by means of physical force, the first use of deception reported in the Bible occurs before the first use of physical force; (2) that most folk tales and mythologies contain examples of both forms of control; and (3) that tactics other than those of complete candor have long characterized man.

Among the more ancient sources uncovered dealing with interpersonal power, were the Book of Lord Shang and the Arthāsāstra. The Book of Lord Shang was written about 300 B.C. in China.

> Lord Shang was . . . [so] pragmatic in giving suggestions to rulers about the most efficient way to administer a country . . . [and] pragmatism was so alien to the traditional culture of China that the book was banned there for centuries.[2]

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[1]Richard Christie and Florence L. Geis, Studies in Machiavellianism (New York: Academic Press, 1970), p. 6.

[2]Ibid.

The Arthāsāstra was also written about 300 B.C. by Kautilya. Kautilya provided highly detailed advice on the exercise of interpersonal power: advice which ranged from setting up and using internal and external systems of spies

> to test the loyalty of ministers by offering them religious, monetary or sexual temptations [to] . . . how the king should protect himself . . . while pleasurably engaged in his harem.[3]

Christie and Geis identify three principal ideas running through all of the writings in the area of power and politics: (1) man is basically weak, naive and very fallible; (2) if people as a whole are so weak, then the rational man should take advantage of this situation to maximize his own gains; and (3) since one cannot trust others because of their weaknesses, then one should take measures to protect oneself from their stupidities.

Although these themes are implicit in all the writings, Niccolo Machiavelli is the author who most explicitly declares his ideas about human nature in this sense. The Prince and The Discourses contain various and rather specific statements in this vein which seem to be consistent with what other power theoreticians have to say. For example, in The Prince, Machiavelli states:

> One can make this generalization about men: they are ungrateful, fickle, liars, and deceivers, they shun danger and are greedy for profit; while you treat

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[3]Ibid.

> them well, they are yours. They would shed their blood for you, risk their properties, their lives, their children, so long as danger is remote; but when you are in danger they turn against you.[4]

Building upon the work of Machiavelli, Christie and Geis developed an interpersonal interaction model which predicts an individual's interpersonal style. This model involves two basic categories of interpersonal style, analytical and affective. The analytically-oriented individual is characterized by objectivity, coolness under stress, decision making based on a cognitive evaluation of the situation at hand, and an orientation towards achieving specific goals. The analytic individual is quick to initiate and control structure. He is most effective in unstructured situations (situations in which the exact roles of participants are not clearly defined, nor are the means for achieving the desired ends clearly defined).

The affectively-oriented individual is characterized by his susceptibility to become emotionally involved, his major interest lies in the social aspects of interaction and not in how such interactions might be useful for achieving a specific end, the tendency to become distracted from his immediate task, and to make affective responses not based on cognitions about the situation. This individual tends

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[4]Niccolo Machiavelli, The Prince (Middlesex, England: Penguin Books, 1972), p. 96.

to accept existing structures or the structures provided by others in ambiguous situations.[5]

Interpersonal Manipulation and Education

Interpersonal manipulation is the behavior most characteristic of the analytically-oriented individual. Although the word "manipulation" has negative connotations for most individuals, we find it mentioned again and again in the literature.

White, in reference to the negative connotations of the word "manipulation," says, "If to manipulate people is bad and the word manipulation is a bad word these days, then how can one justify manipulating people for good ends?"[6] In fields such as administration most writers do not hesitate to talk about the relationship which exists between manipulation and their field. For example, Albers maintains that:

> the fine art of leadership consists of manipulating one's subordinates without their realizing it. Much of the time an effective leader is himself unconscious that he is in this kind of a game.[7]

Simon, Smithburg and Thompson state that "administration is knowing how to manipulate other human beings and

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[5]Christie and Geis, op. cit., p. 350.

[6]W. M. H. White, Jr., The Organization Man (New York: Simon and Schuster, Inc., 1956), p. 3.

[7]Cited in Managing Modern Man by W. A. Wilmore (London: Pitman Publishing, 1973), p. 213.

how to get them to do what you want them to do."[8] Kempner considers that among the goals for administrator training and which, consequently, will be included in the course content for the 1980's will be "the comprehension of group motivation as well as methods of manipulation [under another heading of course]."[9]

In the field of education as a whole there is a great deal of reluctance to talk about the relationship between teaching or counseling and interpersonal manipulation. When the word "manipulation" is mentioned, it is almost inevitably in conjunction with the environment and not the individual. Gagne, for example, has suggested that the teacher's job is to "manipulate" external conditions so that learning can take place, and in reference to the counselor he likewise maintains that he, too, should be an able "manipulator" of the experiences which can lead to growth and by which a person can learn the attitudes and abilities necessary for him to deal with his environment.[10]

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[8]Herbert A. Simon, Donald W. Smithburg, and Victor Thompson, Public Administration (New York: Alfred A. Knopf, Inc., 1950), pp. 22-23.

[9]Cited in Managing Modern Man by W. A. Wilmore (London: Pitman Publishing Co., 1973), p. 220.

[10]Cited in "Counselors as Environmental Engineers" by Kenneth Matheny in Leonard J. Steinberg, The Counselor as an Applied Behavioral Scientist (New York: MSS Information Corporation).

Dusting and George, however, do not shy away from the relationship between counseling and interpersonal manipulation, although they do emphasize that

> action counseling . . . does not manipulate the client against his will. Phase II ensures that the client decides to go on to the change phase of counseling. The manipulation argument is one that is used often, but one in which the advocates fail to point out that evidence has been presented to show that all forms of psychotherapy are in some respects manipulative. Active participation by any counselor is intervention in clients' lives.[11]

Unstructured Situations in Education

One of the most important factors to keep in mind is that the analytical individual's ability to exercise interpersonal manipulation is most effective in situations where some ambiguity exists. Interpersonal manipulation thus "becomes relevant when rewards or outcomes are not tied to objectively-defined performances but can be influenced by the way the situation is handled."[12] In other words, the analytically-oriented individual is more apt to be successful in unstructured or loosely structured situations in which there is latitude for improvisation.

Unstructured situations are more common in educational settings than many people seem to think. For example,

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[11]Richard Dusting and Rickey George, Action Counseling for Behavior Change (New York: Inter Educational Publishers, 1973, p. 23.

[12]Christie and Geis, op. cit., pp. 344-345.

the challenge to authority that arose in the 1960's and was reflected in teacher demands for a greater voice in educational decisions, resulted in an upheaval of the superintendent's role as it has been traditionally defined. In talking about the superintendent's position in teacher negotiations, Campbell states that "although the superintendent is not on the side of the teacher, what is not known is where he is."[13] Another example which confirms the existence of unstructured situations in the superintendent's role is noted by Wiley: "A casual glance at the whole idea of collective bargaining finds the superintendent 'out in left field'--if he is on the 'field' at all." He goes on to ask, "What can be the role of the administrator when teacher groups negotiate directly with the board of education?"[14] Goldhammer, Aldridge, Suttle and Becker tell us that many superintendents stated that one of their biggest problems is defining their role as school superintendents.

> In the smaller districts, the superintendents tend to consider themselves the educational leaders and take pride in maintaining individual contact with all of the

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[13]Cited in "Conceptual Systems Theory and the Superintendent in Teacher Negotiations" by Wayne P. Moellenberg and John Delane William in The I.S.R. Journal, Vol. I (Montpelier: Winter, 1969), pp. 64-65.

[14]Ibid., pp. 65-66.

> teachers in the district. They know what is happening in all schools in the district and are a direct source of information for the staff, the board and the community.
>
> In the larger districts the superintendent finds that he doesn't have enough time to fulfill all of these functions. Here, the superintendents perceive themselves in diverse roles depending upon their philosophy of leadership and the expectations of the board. Many superintendents consider their role primarily as a leader of numerous specialists who have been delegated responsibilities according to their positions. In such cases, the job of the superintendent becomes one of stimulator of change by selling, influencing, and politically manipulating others.
>
> One superintendent indicated that his role was not so much that of a manager or educational leader, as that of a facilitator of group action.
>
> The district educational council, composed of representatives of the professional staff provide the leadership and make the decisions that affect school program.[15]

The frequency with which unstructured situations arise can be seen in some of the principals' interviews cited by Blood. For example, one principal stated:

> the security of a routine is broken when you are a school administrator . . . you never know what's going to happen in one hour, tomorrow or the day after tomorrow, etc. . . . Many individuals bring you their problems.[16]

Talking about the sources from which problems arise for the principal, such as students, teachers, parents, other administrators, etc., another principal stated:

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[15]Keith Goldhammer, John E. Suttle, William D. Aldridge and Gerald Becker, Issues and Problems in Contemporary Educational Administration (University of Oregon, Eugene, 1967), pp. 36-39.

[16]Ronald E. Blood, "The Function of Experiences in Professional Preparation: Teaching and the Principalship" (unpublished Ph.D. dissertation, Claremont Graduate School, 1966), pp. 54-55.

> the myriad and variety of detail you shift gears--can't imagine how many times minute by minute. Problems are forced on your attention--literally hundreds of things which require thoughtful answers--have to investigate--half hour on the phone.[17]

Although it seems as if unstructured situations are more frequent at the higher levels of the educational hierarchy, in actuality unstructured situations are becoming more and more frequent at the teacher's level, especially in open classroom situations.

Silberman in reference to the open educational classroom says:

> rows of desks and chairs, all facing the front of the classroom where the teacher sits at her desk and talks and talks--and talks--are being replaced by an entirely new arrangement which converts classrooms into workshops . . . where teachers and students are not ruled by the bell; the usual 40 minutes period is replaced by longer stretches of time in which students may be free to choose from a number of possible activities.[18]

The role of the teacher in the open education classroom is in many ways a good deal more difficult to delineate than the role of the child. This is due to the fact that most publications dealing with the open classroom are vague as to how and where the teacher fits into the scheme.[19]

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[17]Ibid.

[18]Charles E. Silberman, The Open Classroom Reader (New York: Vintage Books, 1973), p. xvii.

[19]Ibid., p. 215.

> Quietness, orderliness, right answers, straight lines, standardized tests and letter grades are all familiar and comfortable and aren't discarded easily. There will be constant periods of agonizing reappraisal, as one begins substituting a new set of educational values for the old and don't have any illusions--there will be more mess, more activity, more confusion, more noise, and more movement. Initially, one may find it difficult to achieve a balance among the children's activities, as they are drawn to the many opportunities often denied them in traditional classrooms.[20]

In the area of counseling, many of the situations in which the counselor finds himself are so unstructured that he

> can determine which techniques to use (whether referral, course change, further counseling, or some other technique) only as he comes to understand the client, his problems, and the feelings the client has about his situation.[21]
>
> This is relying on his sensitivity, his past experience, and his general knowledge of psychology and human behavior in making decisions about priorities for target responses, selection of treatment, and critical points at which target changes are required.[22]

The Purpose of the Study

The purpose of this study is to determine the nature of the distribution of analytically-oriented individuals

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[20]Ibid., p. 448.

[21]Dusting and George, op. cit., p. 39.

[22]F. H. Kaufer and J. S. Phillips, Learning Foundations of Behavioral Therapy (New York: Wiley, 1970), p. 105.

in the different fields of education and the relationship between the predictability of administrative success and an analytical orientation.

Given the relationship between administration and manipulation described earlier, and given the behaviors which Christie's interpersonal interaction model predicts, it can be hypothesized that educational administration students with an analytical orientation may be perceived by educational administration professors as probable successful administrators. This is based on an assumption that the professors in question would be able to distinguish between analytically and affectively-oriented behavior.

The types of behaviors that distinguish the analytically and affectively-oriented individuals could be readily observed because they are manifested through the manipulation of others,[23] for example, GASing (Getting the Attention of Superiors).[24] According to Greenfield the following are some of the kinds of behaviors GASers engage in: one wears a tie even though he hates it; he also makes it a point to sit near the 'main principal'; another . . . deliberately gets himself appointed to

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[23]Christie and Geis, op. cit., p. 3.

[24]Daniel E. Griffiths, Samuel Goldman, and Wayne J. McFarland, "Teacher Mobility in New York City," Educational Administration Quarterly, I (Winter, 1965), p. 23.

committees that allow him more entrance to problem-solving situations; and yet another goes out of his way to do favors for members of the administrative group.[25] That the high analytical's behavior is observable is supported by the fact that in the "In Search of the Machiavel" study

> two assistants served alternately in two stooge roles. While one assistant was serving as a stooge with the subject, the other observed and recorded the subject's behaviors from an observation room. Both assistants knew the design and purpose of the study and the conceptual identifications of high- and low-scoring subjects. However they did not know the Mach Scale classification of any subjects while they were interacting with him or observing him in the session . . . . Immediately after each subject was run the two assistants independently classified him as high or low Mach on the basis of their experience with him . . . fifty one blind predictions of the Mach classification of the subject just observed were obtained. Of the 51, 38 or 74.5% correctly identified the subject's Mach Scale classification. The probability of this percentage of correct guesses by chance was .001 by chi-square.[26]

Analytically-oriented individuals consistently act in a manner which tends to facilitate the achievement of their goals. Another important aspect of their relative success in manipulating others is their ability to adopt the stance which the circumstances they find themselves in require. For these reasons the researcher thought that in identifying

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[25]William D. Greenfield, "Becoming a School Administrator: Socialization Processes During the Teaching Years" (unpublished Ph.D. dissertation, University of New Mexico, 1973), pp. 32-37.

[26]Christie and Geis, op. cit., pp. 80-90.

those graduate students professors would rate as "successful administrators," the professors would tend to select analytically-oriented students because of their objective, cool, situation-specific and goal-oriented behavior.

Intervening Variables

Sex, age, and religion were hypothesized as influencing the Mach V distributions in this study, because in previous studies using this scale they did significantly influence the distributions. Data on the years of experience was collected based on the author's assumption that a person's experiences in interpersonal interactions might affect his interaction style. That is to say that the length of exposure to educational settings might be regarded as opportunities to acquire manipulative skills.

In reference to the influence of sex, Christie and Geis state that females generally have lower Mach scores than males.[27] Guterman also says that in most samples females score lower than males.[28]

Christie and Geis found that the data in the NORC (National Public Opinion Research Center) study supported the idea that older people tend to score lower on Mach V

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[27]Ibid., p. 54

[28]Stanley S. Guterman, The Machiavellians (University of Nebraska Press, 1970), p. 94.

than do college-age students.[29] This was confirmed in another study carried out by Christie and Merton in which older people who might be expected to be highly manipulative such as Washington lobbyists or business executives scored lower than did college students.[30]

Strickland found that

> when a host of other variables were matched among over 2,500 male medical college students in eight medical schools, there was a significant tendency for those identifying themselves as Jewish to score higher than those who identified themselves as Protestants who in turn scored higher than Catholics.[31]

Miller also found that Protestants scored significantly higher than Catholics.[32]

Significance of the Study

As mentioned earlier, the Mach V scale is based on Machiavelli's philosophy of human nature. Wrightsman defines philosophies of human nature as "attitudes about people in general . . . attitudes that emphasize interpersonal behavior." According to Wrightsman:

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[29]Christie and Geis, op. cit., pp. 314-315.

[30]Richard Christie and R. K. Merton, "Procedures for the Sociological Study of the Values Climate of Medical Schools," The Ecology of the Medical Student, eds. Helen H. Gee and R. J. Glaser (Evanston, Ill.: American Association of Medical Colleges, 1958).

[31]Christie and Geis, op. cit., p. 322.

[32]Cited in The Machiavellians by Stanley Guterman (University of Nebraska Press, 1970), p. 5.

> a philosophy of human nature, functions in at least two ways: First . . . it is a paradigm that sets forth a causal explanation of social phenomena. Secondly, psychologically speaking, it is a set of social schemata that a person uses to help him understand his phenomenal world. Thus, it is both a framework for a person's behavioral manipulations and instrumental dealings with his social world and a set of mental representations of that social world itself, representations upon which his cognitive, symbolic operations are performed.[33]

Mischel, after reviewing evidence on the consistency of personality, reached the conclusion that our assumptions about human nature are formed early in life and that our later experiences are interpreted in such a way as to be congruent with these assumptions.[34]

The same author declares:

> There is a great deal of evidence that our cognitive constructions about ourselves and the world--our personal theories about ourselves and those around us . . . often are extremely stable and highly resistant to change.[35]

Likert and Hayes and Etzioni likewise support the contention that people's basic personalities and attitudes are not easily changed, i.e., Likert and Hayes note that while it is relatively easy to change superficial attitudes, it is extremely difficult to change the attitudes necessary for the development of the effective human relationships

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[33]Lawrence S. Wrightsman, Assumptions About Human Nature: A Social-Psychological Approach (Belmont, California: Wadsworth Publishing Co., 1974).

[34]W. Mischel, "Continuity and Change in Personality," American Psychologist, 24, 1969, pp. 1012-1018.

[35]Ibid., p. 1012.

necessary for effective leadership. This is because the latter are intimately related not only to the individual's most basic ideas and values, but also to his conception of others.[36]

Etzioni after reviewing the failure of the government's expensive and extensive anti-smoking campaign; the failure of prison rehabilitation programs; the failure of educational approaches to help most heroin addicts; and the fact that:

> virtually all of the hundred and fifty odd compensatory education schemes that have been tried . . . to help children from disadvantaged backgrounds catch up with their more advantaged peers . . . either have not worked at all or have worked only marginally,

comes to the following conclusions:

> Social scientists like myself have begun to re-examine our core assumption that man can be taught almost anything and quite readily. We are now confronting the uncomfortable possibility that human beings are not very easily changed after all.
>
> Although mature people can be taught many things--speed reading, belly dancing, Serbo-Croation--usually with much more pain, sweat, cost, time and energy than most beginning pupils suspect; when we turn to the modification of ingrown habits, of basic values, of personality traits, or of other deep seated matters, the impact is usually much less noticeable.
>
> What is becoming increasingly apparent is that to solve social problems by changing people is more expensive and usually less productive than approaches that accept people as they are and seek to mend not them but the circumstances around them.[37]

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[36]Rensis Likert and Samuel P. Hayes, Some Applications of Behavioral Research (Paris: UNESCO, 1957), pp. 84-85.

[37]Amitai Etzioni, "Human Beings are not Very Easy to Change After All," Saturday Review, June 3, 1972, 55 (23), pp. 45-47.

The contention that people's basic attitudes are not easily changed would make the Mach scale important in determining those educators suitable for positions in unstructured and structured situations.

This line of reasoning plus the lack of a reliable instrument for the objective selection of students in the field of education in general and that of educational administration in particular, and the possibilities offered by Christie's and Geis' interpersonal interaction model for selection purposes make this study very relevant. Knowledge of the distribution of analytically-oriented individuals in the field of education might facilitate further studies in this area, as might the distributions for each of the educational specializations in colleges of education.

If there is a significant relationship between the professors' predictions and the degree of analytic orientation of students of educational administration, it would be an indication that the types of behaviors predicted by Christie's and Geis' interpersonal interaction model should be kept in mind during the selection, recruitment, training, and placement of potential administrators. This is of special interest when one notes that unstructured situations are relatively common in educational administration.

Limitations of the Study

This study is limited to the following educational specializations: elementary education, secondary education, counseling and guidance, and educational administration, and to the group of professional educators comprised of these four specializations.

An attempt was made to relate the kinds of behaviors educational administration professors thought characteristic of "successful administrators" with Mach V scores. Other than this, no attempts were made to relate an individual's Mach V score with his "would be" successfulness as an educator in any of the other specializations mentioned.

This study also includes a comparison of the mean Mach V scores of professional educators and the general undergraduate population's Mach V mean scores.

Considerations such as the size of the university (about 20,000 students), the size of the College of Education (about 2,200 students), the number of graduate students (approximately 1,300) in the College of Education; the urban characteristics of the majority of the students and the procedure followed in the selection of the sample (explained later, see Chapter III), will allow the generalizability of this study to other education colleges with similar characteristics.

Hypotheses

1. There will be a significant difference in analytical orientation between individuals in the undergraduate* population and professional educators.

2. There will be significant differences among the distributions of analytically-oriented individuals among practicing educators of elementary education, secondary education, guidance and counseling, and educational administration.

3. There will be a significant positive relationship between the professional educator's predicted "success" as educational administrators and the degree of analytical orientation.

4. There will be a significant positive relationship between the degree of analytical orientation and age, sex, religion, and years of experience.

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*Source: These scores will be taken from data collected in 1964 (Christie and Geis, 1970, p. 314).

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The review of the literature is organized as follows: first, a short section on the historical background of the Mach V Scale; second, a section on the behaviors characteristic of analytically and affectively-oriented individuals as identified in various studies using the Mach V Scale; and third, similar behavioral characteristics as discussed by other authors. In the third section, the literature dealing with administrator behavior is presented first, followed by a combined treatment of the literature dealing with counselor and teacher behavior.

Historical Background of the Mach V Scale

The Mach V Scale is based on the interpersonal interaction model which predicts an individual's interpersonal style.

The model predicts the degree of manipulative abilities possessed by an individual. The power which results from the individual's manipulative ability is

interpersonal power, which Etzioni terms normative or manipulative power.[38]

A short explanation about how the Mach V Scale, which is based on Christie's and Geis' interpersonal interaction model, was developed follows.

While studying at the Center for Advanced Studies in the Behavioral Sciences during 1954-1955, Agger, Pinner and Christie became interested in the idea that people who express agreement with Machiavellian precepts behave differently than people who do not express agreement with these precepts. They read extensively, searching for writings containing ideas similar to those of Machiavelli, as mentioned in Chapter I. Although they found other writings by power and political theoreticians which dealt with themes similar to those of Machiavelli, the latter was the only writer who explicitly declared his views on human nature. For this reason, Agger, Pinner and Christie decided to analyze The Prince and The Discourses in order to identify statements which were examples of Machiavelli's views on human nature, rephrasing them when necessary and writing them or their opposites on index cards. These cards were presented to almost all of the Fellows at the Center who

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[38]Amitai Etzioni, Complex Organizations (New York: The Free Press, 1971), pp. 4-7.

were then asked to indicate their agreement or disagreement with each of the items and afterwards asked to explain how they had interpreted each item.

The latter question was designed to discover if the respondents had actually understood the significance of the statements and also to identify and classify any ambiguities which may have been present.

Christie and his colleagues, Agger and Pinner, were encouraged by the results to continue their investigations. The degree of agreement the subject demonstrated with Machiavellian precepts was in accordance with the estimates Christie and the others had previously made as to his relative disposition to engage in manipulative behavior. Later a Mach Scale composed of 71 items was administered to 1,196 university students in three different universities. The results of this study showed that 50 of the 71 items discriminated between the affectively and analytically-oriented individuals.

The next step was the development of a shorter version of the scale which was made up of the 20 most discriminating items of the 50 mentioned above. Ten of the items were worded in the opposite direction. The test subject was asked to indicate his agreement or disagreement with each item.[39]

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[39]Christie and Geis, op. cit., pp. 4-7.

At this time, Edwards began his studies about the effects of social desirability on personality and attitude inventories. Edwards developed a scale which measures social desirability.[40] When the Edwards Social Desirability Scale and the Mach IV were administered to students, a negative correlation was found between the two scales.

In order to combat the effect of social desirability, a new strategy was developed. The new strategy was one which used an item keyed for social desirability as a decoy and two other items which intended to distinguish between the analytically and affectively-oriented individuals. For example, item 4 of the Mach V Scale reads:

4.	A.	People are getting so lazy and self-indulgent that it is bad for our country.	2.80
	B.	The best way to handle people is to tell them what they want to hear.	2.80M
	C.	It would be a good thing if people were kinder to others less fortunate than themselves.	4.35

Part C is the social desirability decoy with a mean social desirability rating of 4.35. Part B is the part which would be used to distinguish between the affectively and analytically-oriented individual; it and part A have mean

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[40]A. L. Edwards, The Social Desirability Variable in Personality Assessment and Research (New York: Dryden Press, 1957).

social desirability ratings of 2.80. This forced choice scale showed no correlation with Edwards' measures of social desirability. This last scale was called the Mach V Scale.[41]

Behaviors Characteristic of Analytically and Affectively-Oriented Individuals

Geis, Krupat and Berger had 32 male undergraduates (17 analytically-oriented and 15 affectively-oriented, according to the Mach V Scale), participate in a group discussion. After participating in the discussion, each person was asked to rate every other person in the group on (1) effectiveness in presenting ideas; (2) listening to others; (3) quality of ideas; (4) amount of leadership displayed; and (5) overall contributions to group progress. The analytically-oriented members of the group were rated significantly higher on all five of the criteria mentioned above.

Furthermore, in the questionnaire completed after the discussion, it was found that the high analyticals had not changed their private opinions as they had reported them earlier to the investigator ($p > .05$). It was also found that the affectively-oriented individuals had changed their opinions on the issue discussed ($p > .025$).[42]

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[41]Christie and Geis, op. cit., pp. 1-26.

[42]Florence Geis, E. Krupat, and D. Berger, "Taking Over in Group Discussions" (unpublished manuscript, New York University, 1965), p. 392.

Situation Specific Strategies

According to Christie and Geis (1970), analytically-oriented individuals seem to try to achieve the possible by adapting their tactics to suit the particular situation in which they find themselves.

In various studies in which different kinds of games were played, the analytically-oriented individuals manipulated more openly when they were not dependent on their counterpart's cooperation.[43] Geis, Christie and Nelson found that analytically-oriented individuals manipulated more than their affectively-oriented counterparts and were more creative in the kinds of manipulations they used in situations where they had no need for their counterparts' cooperation.[44]

> In the Machiavel study, subjects were given the role of experimenter and asked to administer an important personality test to another subject. They were told that the student experimenter who had tested them had performed three relatively innocuous deceptions and were given permission to "use your power arbitrarily" in testing their subjects.[45]

Analytically-oriented individuals manipulated more and were more creative in the kinds of distractions (manipulations) they used than their affectively-oriented counterparts. This was in a situation where the people they were interacting with could not retaliate.

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[43]Christie and Geis, op. cit., p. 303.

[44]Ibid., p. 77. [45]Ibid., p. 95.

Geis, on the other hand, found that analytically-oriented individuals did not manipulate significantly more than affectively-oriented individuals in the Con Game Study which represented a situation where the people they were interacting with could retaliate.[46] Likewise, in the Penny-Dollar Study, Christie, Gergen and Marlowe found that analytically-oriented individuals did not use a more aggressive strategy than affectively-oriented individuals when their opponents in the game could repay them in kind and when a cooperative strategy would bring them greater monetary gain.[47]

Analytically-oriented individuals also tend to adjust the amount of manipulation they employ and change their strategies very subtly when the specific situation they find themselves in changes.[48] In Geis' Con Game Study, a three-man bargaining coalition game was used to test the prediction that highly analytical individuals would obtain more of the rewards in a conflict of interest bargaining situation in which interpersonal manipulation could influence the distribution of rewards, than would affectively-oriented people.

> The game consisted essentially of bargaining for shares of the total pay-off, set at 100 points per game. These could be won by any player alone, divided between any two or distributed among all three. The

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[46] Ibid., p. 303. [47] Ibid., p. 188.

[48] Ibid., p. 303.

> points could be divided by bargaining in any proportion agreed to by the bargainers (e.g. 50-50-0, 60-40-0, 94-6-0, etc.). A subject's score over a series of games is determined by his bargaining ability, shrewdness in bargaining and dispassionate use of coalition partners. To begin the game each player was given a hand of six power cards. One player always had a hand of high-value cards, another low cards, the third had a middle-value hand. In 50% of the games played the players' power cards were common knowledge to all three players; in the other 50% of the games, the players' power cards were not common knowledge.[49]

Both affectively- and analytically-oriented subjects made coalitions offers which were reflective of their power positions within the group when these positions were common knowledge, but the analytically-oriented individual (in contrast to his affective counterpart) made coalition offers which ignored their power positions when these were unknown within the group.[50]

In Christie, Gergen and Marlowe's Penny-Dollar Caper Study, when the stakes were changed from points to money, the analytically-oriented individuals changed to more cooperative tactics (thus winning more) while the affectively-oriented individuals did not change their tactics.[51]

In Christie's and Geis' Ten Dollar Caper Study, there were no cognitive cues to serve as reference points to suggest an unequal division of the money. Any two of

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[49]Ibid., p. 108. [50]Ibid., pp. 130-160.

[51]Ibid., pp. 170-190.

the three individuals in each group could divide the ten dollars any way they chose. Under these conditions, the analytically-oriented subjects won by entering in coalitions (100 percent of the analytically-oriented individuals managed to be one of the two people who split the ten dollars between them), and most (five out of seven analytically-oriented individuals) proved willing to divide the money equally with their partner.[52]

Coolness Under Stress and Objectivity

Analytically-oriented individuals appear to be more objective and tend to adapt more in difficult situations (coolness under stress) than affective individuals.

Exline, Thibaut, Hickey and Gumbpert's study showed that analytically-oriented subjects looked the investigator in the eye more often when lying to him than affectively-oriented subjects. Also, according to the judge, the analytically-oriented individuals gave less indication of anxiety.[53]

Geis, Weinheimer and Berger's study was designed so that the potential level of personal involvement could

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[52]Ibid., pp. 161-171.

[53]R. V. Exline, John Thibaut, C. B. Hickey, and Peter Gumbpert, "Visual Interaction in Relation to Machiavellianism and an Unethical Act" (paper presented at the 1961 APA Meeting).

be varied in order to measure objectivity. The results confirmed the investigator's suppositions: analytically-oriented subjects were not more successful than their affectively-oriented counterparts when defending their position on relatively trivial themes, but they were significantly more successful than their affective counterparts when dealing with more controversial themes such as the selective service system and the like. In this situation, analytically-oriented individuals won by assuming rational and objective attitudes towards the defense of their own ideological positions.[54]

Resistance to Sheer Social Pressure

According to Christie and Geis, analytically-oriented individuals do not tend to be moved by sheer social pressure.[55]

Durkin's ball and spiral study used a team action task--jointly rolling a ball up a spiral path--and the interaction term in a subject-by-subject design to measure susceptibility to social influence. Analytically-oriented subjects were not influenced by the person who was serving

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[54]F. L. Geis, S. Weinheimer, and D. Berger, "Playing Legislature: Machiavellianism in Log Rolling" (paper presented at the Annual Meeting of the APA, New York, September, 1966).

[55]Christie and Geis, op. cit., p. 295.

as their partner; their individual skill level accounted for their performances. Affectively-oriented individuals, however, were affected by their partners; their performances could not be accounted for by their skill level alone.[56]

Geis, Krupat, and Berger and Rim and Harris found that affectively-oriented individuals reported an opinion change after engaging in a group discussion on a given subject, while analytically-oriented individuals reported no opinion change.[57]

Use of Explicit and/or Cognitive Cues

According to the study of Bogart, Geis, Zimbardo and Levy, analytically-oriented individuals do not behave differently with different others when they do have explicit cues as to the differences; they do, however, behave differently with different others when presented with cues as to the differences. Affective people, on the other hand, tend to become personally involved with the particular person and tend to ignore cognitive cues as to individual differences.[58] For example, in Bogart, et al., "No Dissonance for Machiavellians" study, highly analytical individuals did

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[56]J. E. Durkin, "Emphatic Orientation in Psychological Encounters" (paper presented at the Annual Meeting of the Eastern Psychological Association, Boston, April, 1967).

[57]Christie and Geis, op. cit., p. 296.

[58]Ibid., pp. 236-259.

not cheat any more than did affectively-oriented individuals, but there was a difference in the circumstances under which each group cheated. The highly analytical individual tended to cheat when the individual who was trying to persuade him to cheat had been described in attractive terms and not to cheat when presented with a partner who had been described to him as "doing poorly on this particular personality test, and having some weaknesses in some areas of psychological functioning." Even though the affectively-oriented individuals cheated a similar number of times, they did not differentiate between the partner who had been described in attractive terms and the partner who had been described in unattractive terms.[59] In Durkin's Ball and Spiral Study, on the other hand, highly analytical individuals did not perform differently with different others in accomplishing the task in a situation where no cognitive cues as to differences in the identity of the others were provided. Their affectively-oriented counterparts in contrast did better or worse with different partners than skill could account for in playing ball and spiral.[60] According to these studies, analytical individuals use cognitive cues to guide their actions, while affective individuals tend to ignore them.

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[59]Ibid., pp. 236-250 [60]Durkin, loc. cit.

Summary of the Characteristics of People Having an Analytical Interpersonal Orientation

Situation-specific strategy and use of explicit and/or cognitive cues. Analytical individuals have a cool, cognitive, situation-specific strategy. Highly analytical individuals respond to cognitive, discriminative labels and explicit cues, particularly those relevant to planning strategy in a given situation. They appear to aim at achieving the possible and adapt their tactics to the specific conditions of the situation at hand. They do not respond differentially to others unless guided by explicit distinguishing cognitive cues.[61]

Coolness under stress and/or objectivity. Although their coolness may not be more than skin deep, they appear thick skinned enough to withstand the enticements or dangers of interpersonal involvement which might interfere with task achievement.[62] The analytical person's success in bargaining and persuasion situations can be seen as a result of a lack of arousal or the ability to control it in social situations in which information processing pays off.[63] In every laboratory setting in which implicit assumptions

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[61]Christie and Geis, op. cit., pp. 303-305.

[62]Ibid., p. 312. [63]Ibid., p. 301.

concerning human relations, social values, or ethical considerations could have interfered with task achievement, the highly analytical individual appeared to ignore them and operate instead according to the explicit cognitive definition of the situation.[64]

Resistance to sheer social pressure. People having a high analytical interpersonal orientation are not moved by sheer social pressure.[65]

Analytic and cognitive orientation. When these individuals have a goal they attend to their own cognitive analysis of the situation including cognitions about others and their actions, specifically in reference to the goal.[66]

Authoritarianism. There was a negative correlation between the level of authoritarianism as measured by the F Scale and Mach V Scores. Christie's and Geis' interpretation of responses of the F Scale is that it taps, among other things, a diffuse hostility towards others, a moralistic judging attitude towards them, and a propensity for right-wing political ideology.[67]

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[64]Ibid., p. 361. [65]Ibid., p. 312.

[66]Ibid., p. 308. [67]Ibid., p. 38.

Similar Behaviors in Administration

Throughout the professional literature on administration one finds references to the importance not only of manipulation but of other behaviors which are predicted by the Mach V Scale, e.g., situation-specific strategy, use of explicit and/or cognitive cues, coolness under stress, objectivity, resistance to sheer social pressure, cognitive analysis of the situation and low authoritarianism.

Culbertson maintains that the social sciences cannot provide a complete guide for the carrying out of administrative processes. The social sciences can only give us notions about concepts such as "the community power structure," but it cannot give administrators complete answers as to how to manipulate that structure. Culbertson appears to be suggesting that "complete answers" lie in the development of manipulative skills. This suspicion is confirmed by his recommendation that certain literature be included in the training of administrators. Among the books he recommends is Machiavelli's The Prince.[68]

Della Femina claims that the art of "manipulation" is so important for the success of an administrator that there is not a single man who has risen to the top in the

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[68]Jack A. Culbertson, Stephen A. Henley, Preparing Administrators: New Perspective (University Council for Educational Administration, Columbus, Ohio, 1963), pp. 160-168.

business world who has not employed it at one time or another.[69] Lipham found that one of the characteristics of effective administrators was that they "were very efficient in dealing with others in order to solve problems."[70] Terry states that to "administrate is to achieve a predetermined goal through the work of others" and the "good" administrator has to know how to convince others to do what he wants them to do.[71]

According to a study done by Goldhammer, the lack of manipulative skills is often mentioned by administrators when they are asked about what they perceive to be their problem areas. In this study, the superintendents indicated that their "training did not prepare them adequately" to deal effectively with people. They also recognized the importance of maintaining good human relations in order to be able to deal successfully with the wide diversity of problems which they faced.[72]

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[69] Cited in The Corporate Prince by Qass Aquarius (London: Litton Educational Publishing Co., Inc., 1971), p. VII.

[70] James M. Lipham, "Personal Variables of Effective Administrators," Administrator's Notebook, IX, No. 1 (1960).

[71] George R. Terry, Principios de Administracion S.A. Mexico: Compania Editorial Continental, 1963), p. 39.

[72] Keith Goldhammer, John E. Suttle, William Aldridge, and Gerald Becker, Issues and Problems in Contemporary Educational Administration (Eugene, Oregon: University of Oregon, 1967), pp. 36-37.

The author found several references to the importance of a cognitive and/or analytical orientation for the administrator. Aquarius states that the administrator "should not act emotionally but after analyzing the situation cooly and rationally"[73] and "should be cognitively prepared before becoming involved in any kind of discussion."[74] Lipham found that the effective administrator tends to be involved in purposeful activity and is conscious of his job responsibilities. He is characterized by acute perceptive abilities and action directed towards specific goals.[75] Terry feels that the administrator should precede all action by a conscientious analysis of the situation at hand.[76]

Among the aspects of the social sciences which Goldhammer considers important for the study of educational administration are: (1) the method of collecting data provided by the social sciences which permits the administrator who uses it to distinguish among scientifically established facts, hypotheses, theories, and opinions based on values, propositions, and unevaluated suppositions; (2) the understanding of concepts such as role, stratification, and

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[73]Aquarius, op. cit., p. 49.

[74]Ibid., pp. 11-12.

[75]Lipham, op. cit., p. 2.

[76]Terry, loc. cit.

bureaucratic behavior which can be provided through the study of the social sciences and which allow the administrator to comprehend the nature of the everyday relationships within which he has to work; (3) the social concepts which have been developed and which explain the nature of the real world and which help the administrator to understand which elements in a specific situation are pertinent; and (4) two of the main functions of the social sciences: to permit the prediction of the consequences which could result given a specific set of variables and to enable the individual to control certain happenings by means of certain independent variables. Goldhammer feels that the first three aspects mentioned above are important if the administrator is to be objective and all four are necessary if the administrator is to analyze each situation and decide which strategy would be the most effective given that specific situation.[77]

A study done in the field of leadership also seems to suggest that a situation-specific strategy on the part of a leader would probably be the most effective. The study on leadership carried on by the International Harvester Corporation indicates the possibility that there is no

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[77]Keith R. Goldhammer, The Social Sciences and the Preparation of Educational Administrators (Oregon: Division of Educational Administration and the University Council for Educational Administration, April, 1963), pp. 1-6.

single leadership style or practice which is ideal for all situations. Likert and Hayes maintain that if the content of human relations courses are to be effective, they will have to include principles broad enough to enable the administrator to adapt his behavior to the requirements of particular situations and times.[78]

Objectivity was also considered a positive attribute for an administrator to have by both Aquarius and Terry. Aquarius states that the administrator "should be impersonal in his arguments and base his actions on facts."[79] Terry thinks that the administrator should have a firm theoretical grasp of administration and keep up with advances both in his own and in related fields and use this knowledge with an objective point of view.[80]

Aquarius thinks that the administrator should be resistant to social pressure. "The administrator should not let himself be distracted from his goals by external influences."[81] Terry recommends coolness under stress: the administrator should have "the ability to face hardships without becoming disillusioned; a strong will to insist and strive forward in spite of problems."[82]

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[78]Likert and Hayes, op. cit., pp. 94-95.

[79]Aquarius, op. cit., pp. 101-102.

[80]Terry, loc. cit. [81]Aquarius, op. cit., p. 53.

[82]Terry, loc. cit.

Another important behavioral characteristic which is stressed in the literature is a non-authoritarian attitude on the part of the administrator. Coch and French found that a democratic style of leadership affected the attitudes of workers towards their jobs positively. The administration of The Harwood Manufacturing Corporation found that their workers resisted changes designed to better production. Coch and French divided a work force into three equal groups. The first group only received a brief announcement from the administration that there would be a change. The second group was notified that a change was needed by the administration and then the members of the group were asked to select representatives to help study the necessary training program. The third group not only was informed about the change and why it was necessary, but the whole group participated in helping to design and plan the innovation itself as well as the training program.

The results show that the two groups which participated in the planning and training for the innovation adjusted rapidly to the change while the first group did not. The second and third groups bettered their production considerably while in the first group production went down. The third group which participated most completely in the planned change produced slightly more than the second group. Also, problems and rebellion increased in the first group,

while there were virtually no problems or firings in the other two groups.[83]

Similar Behaviors in Teaching and Counseling

Although the professional literature on teaching and counseling is not as rich in references to the behaviors predicted by the Mach V Scale as the administrative literature, there is enough to argue that certain behaviors are important for these fields as well.

Moser and Moser maintain that

> the successful professional counselor must have a capacity for analytical thinking which is above average . . . the counselor must not only be able to understand what the client says but also what he means. In any system of counseling, the counselor must understand the client before the client can be helped to understand himself.[84]

An analytical orientation is important for teachers as well as counselors. Morrison and McIntyre feel that more emphasis should be placed on developing student-teacher observational skills because they should be able

> to observe what is happening in classrooms and to learn from their observations. Without some training in this complex skill, which is rarely given, students accustomed as they are to a very different role in

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[83]Cited in Organizaciones Modernas by Amitai Etzioni (Mexico: UTEHA, 1965), pp. 67-69.

[84]L. Moser and R. Moser, Counseling and Guidance: An Exploration (Englewood Cliffs, N.J.: Prentice-Hall, Inc. 1963), p. 142.

> classrooms are unlikely to take a sufficiently analytic view to notice and reflect on any but the most dramatic of classroom incidents.[85]

Both the teacher and the counselor must be able to make use of cognitive and other explicit cues. The counselor must make use of cues in analyzing each counseling session with a particular individual in order to be able to appropriately

> use techniques, administer tests, offer directions, encourage or move in any number of possible directions as he endeavors to understand and deal with the individual before him. He will not deal with every client in the same manner because he knows that this is illogical, especially in terms of the various problems which are involved.[86]

Morrison and McIntyre think that the use of cues (by teachers) is important and that this "skill is dependent on sensitivity . . . towards particular observational cues or classes of cues . . . ."[87]

The skillful use of cognitive and other explicit cues permits the development of situation-specific strategy. According to Petrie, the student-teacher often considers

> nothing relevant unless it gives him a recipe for dealing with his particular problems . . . and yet recipes "work" only if one perceives the appropriate situation in which to use them. (Thus) until the student-teacher develops perceptual categories which go beyond mere recipes, he will not become a real

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[85]A. Morrison and D. McIntyre, Teachers and Teaching (Baltimore, Md.: Penguin Books, Inc., 1969), p. 60.

[86]Moser and Moser, op. cit., p. 203.

[87]Morrison and McIntyre, op. cit., pp. 174-183.

> teacher . . . he may train his students but he will be unable to teach them.[88]

In a similar view, Flanders points out that although

> indirect-expansive verbal behavior was associated with significantly superior achievement of pupils, . . . it is most effective where it is used in the opening cycle of a lesson or in a new stage of lesson development, and then followed by the flexible use of both forms. The merit, then lies not in the blanket adoption of one pattern [of verbal behavior] but in appropriate application of one or the other at key points.[89]

Moser and Moser also emphasize that

> The counselor cannot afford to narrow his field of choice and follow a single approach exclusively (either); he (too) owes it to the student to maintain flexibility and to have at hand a variety of tools and techniques. Only through the eclectic approach may the counselor give proper attention to individual differences.[90]

Self-control and coolness under stress are two closely related behaviors, and self-control is one of the most important personal characteristics of the analytically-oriented individual. Self-control is stressed in the literature as a characteristic considered important for a good teacher. Barr found a notable difference between the personality characteristics of "good" vs. "poor" teachers.

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[88]H. G. Petrie, "The Believing in Seeing," Lindley G. Stiles, Theories for Teaching (New York: Todd, Mead and Co., 1974), p. 63.

[89]Cited in Teachers and Teaching by A. Morrison and D. McIntyre (Baltimore, Md.: Penguin Books, Inc., 1969), p. 153.

[90]Moser and Moser, op. cit., p. 201.

Among other things the "good" teachers were able to establish good relationships with their students, had a good sense of humor and self-control.[91]

Self-control or coolness is important for the counselor as well.

> It is imperative that the counselor feel unthreatened as he works with a student. Even if the counselor is subjected to hostility, ridicule, censure, and verbal aggression by the student, he must appear unperturbed.[92]

The importance of the counselor and/or teacher's ability to remain cool under stressful conditions is underscored when one keeps in mind "the deterioration of personal relationships and the incidence of violence and aggression in our civilization."[93] Much of this violence and aggression is making itself felt in our schools where teachers and counselors are the ones who must deal with it effectively.

Objectivity is another characteristic of the highly analytical individual which is important for teachers and counselors.

In a research project which applied the MTAI (Minnesota Teacher Attitude Inventory) to 300 teachers,

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[91]Thomas M. Risk, Teoria y Practica de la Ensenanza en las Escuelas Secundarias (Mexico: UTEHA, 1964), p. 564.

[92]Moser and Moser, loc. cit.

[93]Geoffrey Yarlott, Education and Children's Emotions: An Introduction (Birkenhead, Great Britain: Wilmer Brothers Limited, 1972), p. 2.

Getzel's and Jackson found "that teachers who get along well with pupils tend to be cooperative, friendly, emotionally stable, and objective."[94]

Tennyson, Peters and Farewell think that the counselor should establish a

> psychological climate of friendliness, warmth, acceptance, permissiveness and objectivity, (so that) the student is enabled to venture into the unknown world of the feelings and attitudes of his own personality.[95]

McGee and Blumberg carried out two different studies which when considered together emphasize the importance of a non-authoritarian attitude on the part of teachers in a democratic society.

McGee found that "verbal responses of teachers to statements on an opinion attitude scale for measuring authoritarianism and teachers' overt behavior towards children are positively correlated."[96] McGee used the F-Scale to estimate authoritarian potential in teachers and constructed an instrument for measuring overt teacher behavior in the classroom which was called the Classroom Observation Record and Glossary.

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[94]J. W. Getzels, and P. W. Jackson, "The Teacher's Personality and Characteristics," Handbook of Research on Teaching, ed. N. L. Gage (Chicago: Rand McNally Co., 1963), p. 516.

[95]Moser and Moser, op. cit., p. 143.

[96]H. M. McGee, "Measurement of Authoritarianism and Its Relation to Teachers' Classroom Behavior," Genet. Psychol. Monogr., 1955, p. 93.

(The Record has an interscore reliability of .90 for 150 cases.)

McGee's findings are important when one considers that a study done by Blumberg

> indicates that teachers who are authoritarian may mold autocratic attitudes in their students . . . what seems to happen ultimately is that teacher's succeed in projecting and transferring their own feelings about authority on to the student. The student soon learns that it is easier to get along by not differing from their teachers' ideas. Thus conformity of thought and response is the hallmark of the autocratic teacher's classroom.[97]

According to Stiles, a psychological teacher is nonauthoritarian, nondogmatic, and sensitive to the subjective meanings associated with human behavior.[98] A similar outlook is recommended for counselors by the APGA:

> The counselor has the flexibility of outlook towards others that makes it possible to appreciate individuality, to be receptive to new research findings, new ideas and achievements, and to have respect for a wide range of attitudes and beliefs.[99]

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[97]J. E. Heald, L. G. Romano, and N. P. Georgiady, Selected Readings on General Supervision (New York: The MacMillan Co., 1970), p. 123.

[98]Lindley J. Stiles, Theories for Teaching (New York: Todd, Mead and Co., 1974), p. 44.

[99]Moser and Moser, op. cit., p. 143.

CHAPTER III

THE RESEARCH DESIGN

The following chapter will discuss the instrument (Mach V Scale), selection of the sample, description of the sample, procedures of data collection, the null hypotheses, and the statistical techniques for data analysis.

Description and Scoring Characteristics

The development of the Mach V Scale was based on the idea that people who express agreement with Machiavellian precepts behave differently than those who do not express agreement with those precepts. The Mach V Scale is made up of 20 items, each item consisting of three statements. The test subject must first choose the statement with which he agrees the most and then he must choose the statement with which he agrees the least.

One of the three sentences in each item is keyed for social desirability, and is generally the statement selected as the one the subject agrees with most. The other two items are used to discriminate between the analytically and affectively oriented individual. Of these two remaining statements the subject must choose that with which he agrees the least and in doing so, he automatically identifies the remaining statement as the one he agrees with more. If

the subject picks one of these two statements to begin with, we still obtain the information desired.

The scoring is such that the theoretical neutral point is 100. A score of 100 means that the number of analytically-oriented statements with which the subject agrees is equal to the number of analytically-oriented statements with which he disagrees.

A score of 160 indicates agreement with all of the analytically-oriented statements and disagreement with all of the affectively-oriented statements. This is the highest analytical score.

The highest affective score is 40 and it indicates agreement with all of the affectively-oriented statements and disagreement with all of the analytically-oriented statements.

Validity and Reliability

Christie and Merton note that a university professor of medicine took part in a test of the Mach V's validity. He was asked to identify 20 of his students who behaved in a "cynical opportunistic manner" and 20 students who showed "the greatest love for their fellow man." When the Mach V scores of the two groups were compared, significant differences were found in the expected directions.[100]

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[100]Christie and Merton, op. cit., p. 136.

Singer states that

> a number of studies done by Christie and others prove not only that the Mach V is consistent and reliable but also that the individuals who score high on the Mach V behave in a more manipulative manner than those who score low.[101]

The studies presented by Christie and Geis in their book, Studies in Machiavellianism, underline the scale's validity in that, throughout the book the people who score high on the Mach V are significantly more manipulative than those who score low.[102]

In the majority of experimental samples the reliability coefficient for the Mach V is .60. Although this doesn't seem very high, it is high enough to permit us to distinguish between the analytically-oriented individual, as can be seen from the studies presented in this book.[103]

The Sample

The population we are concerned with in this study is made up of experienced professional educators who are continuing their education at the graduate level in the following educational specializations: elementary education, secondary education, guidance and counseling, and educational administration. The reason for differentiating between elementary and secondary teachers is based on the fact that elementary teachers and secondary teachers are in charge

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[101]J. E. Singer, "The Use of Manipulative Strategies: Machiavellianism and Attractiveness," Sociometry, 1964, p. 129.

[102]Guterman, op. cit., p. 7.

[103]Christie and Geis, op. cit., p. 27.

of different stages of the students' development and the author wanted to determine if there was a difference in the distribution of analytically-oriented individuals between the two.

The selection of students to be measured in each of the specializations was made from the most representative classes (representative in the sense that they had students majoring in that field who were at different levels within the graduate school).

The educational administration students selected were all of those whose instructors were full-time professors of the Department of Educational Administration.

The size of the total sample was 226, taken from a universe of 758. This is a sample of approximately 30 percent.

The size of the sample in educational administration was 100. This represented 63 percent of a total of 158 subjects in this area.

In elementary education the sample was 46, from a total of 260. This represented approximately 18 percent of the subjects in this area.

In secondary education the sample was 40, from a total of 186 subjects in the area. This represented about 22 percent of the total population.

In guidance and counseling the sample was 40, from a total of 154. This represented 26 percent of the total number of subjects in the area.

Initially the author thought that a sample of 15 percent in the areas of elementary education, secondary education and guidance and counseling would be adequate, but differences in class sizes made the selection of a uniform sample percentage in each area too complicated. Thus, although the sample sizes are different, in each case the sample exceeds 15 percent of the target population. This data is displayed in Table I.

TABLE I

SAMPLE DATA

Educational Specialization	Total Number of Majors	Size of Sample	Percent of Total
Educational Administration	158	100	63
Elementary Education	260	46	17.7
Secondary Education	186	40	21.5
Guidance and Counseling	154	40	26
Total	758	226	30

Table II shows the distribution of the five age groupings among the four areas of educational specialization. The most common age group represented was that of 26-30 years of age, with a total of 64 individuals. The least common group was that of people from 36-40 years of age, with a total of 28 individuals.

TABLE II

AGE

Educational Specialization	Years Old				
	20-25	26-30	31-35	36-40	41 and Over
Educational Administration	6	22	22	17	33
Elementary Education	15	13	9	3	6
Secondary Education	7	15	4	4	10
Guidance and Counseling	10	14	8	4	4
Total	38	64	43	28	53

Table III describes the distribution of the four years of educational experience groupings. The largest number of people in these groupings fell in the 3-5 years group and the smallest in the 6-10 years group.

TABLE III

YEARS OF EDUCATIONAL EXPERIENCE

Educational Specialization	Years of Experience			
	0-2	3-5	6-10	More than 10
Educational Administration	4	28	26	42
Elementary Education	13	17	8	8
Secondary Education	9	14	9	8
Guidance and Counseling	23	8	5	4
Total	49	67	48	62

Table IV gives the distributions of the different religious groups. Catholics are the most heavily represented with 88 subjects; Protestants are in second place with 84 subjects; there were only two Jews in the entire sample and both were in guidance and counseling.

Table V shows how men and women are distributed in the four specializations. Men are most heavily represented in educational administration and women in elementary education. Women outnumbered men 126 to 100 in the total sample.

TABLE IV

RELIGION

Educational Specialization	Protestant	Catholic	Jewish	Other	Not Affiliated
Educational Administration	37	51	--	6	6
Elementary Education	20	18	--	2	6
Secondary Education	18	11	--	2	9
Guidance and Counseling	9	8	2	1	20
Total	84	88	2	11	41

TABLE V

SEX

Educational Specialization	Female	Male
Educational Administration	32	68
Elementary Education	45	1
Secondary Education	21	19
Guidance and Counseling	28	12
Total	126	100

Data Collection

Data collection was begun during the tenth week of the semester in order to allow the educational administration professors time to get to know the students with whom they had not had previous contact in order that they would be able to make a judgment on their possible later "success" as educational administrators.

All students received the following information: "This study deals with the attitudes of professional educators. All data analysis and reporting will be done in a manner designed to protect the anonymity of the subjects."

Participation in this study was completely voluntary and the participants were so advised.

The instrument was then distributed to those who agreed to participate and they were given 25 minutes to complete it. It was judged that this would be the maximum time required.

In general, the students were not unhappy with the scale and some were quite amused. Nevertheless, a young male student became upset while answering and tore up his copy of the scale. A female student handed in her questionnaire after everyone else had, but she had not answered it. She wrote the following note: "I am sorry I can't be of help to you but there are many statements about which I feel equally negative or positive. I am unable to make a choice between the lesser of two evils."

After obtaining the data, the names of the respondents were checked with the list of academic majors in each specialization in order to place correctly each student in the appropriate category.

Those students who were certified as administrators or working towards certification as administrators were categorized as students majoring in educational administration for purposes of data analysis. Thus, a student who declared a major in secondary education, but who also either held or was working toward an administrative certificate, was classified for the purposes of the study as an educational administration major.

After the data were collected each full-time educational administration professor was provided with a list of his students who had completed the questionnaire and was asked to prepare a ranked list of the 20 percent of those students whom he thought would make "successful" administrators.

For data analysis purposes the following questionnaires were omitted: (1) questionnaires without names (in educational administration); (2) questionnaires which were not properly answered (subjects did not follow directions); and (3) questionnaires in which "None of the above" was marked in response to major field of study.

Also, in the one case in which the subject wrote in "atheist" in response to religion, his response was classified in Category 3--"Not affiliated with any organized religion."

Null Hypotheses

1. There will be no significant difference in analytical orientation (as measured by the Mach V Scale) between individuals in the undergraduate population and professional educators.

2. There will be no significant differences among the distributions of analytically-oriented individuals (as measured by the Mach V Scale) for practicing educators of

elementary education, secondary education, guidance and counseling, and educational administration.

3. There will not be a significant relationship between a professional educator's predicted "success" as an educational administrator and his interpersonal interaction style as determined by the Mach V Scale.

4. There will be no significant relationship between the degree of analytical orientation (as measured by the Mach V Scale) and age, sex, religion, and years of educational experience.

Statistical Techniques

A two-tailed T-test was used to test the significance of the differences between the raw score means of professional educators and the general undergraduate population.

Analysis of variance (one-way) techniques were used to test for the significance of the differences of raw score means: (1) among the four educational specializations of educational administration, elementary education, secondary education and guidance and counseling; (2) between male and female educators; and (3) among the subgroups made up according to age, years of educational experience, and religion.

A chi-square analysis was done to determine whether or not there was a significant relationship between an

educational administration student's predicted success and his interpersonal orientation.

The level of significance for all of the analyses done was set at .05.

CHAPTER IV

PRESENTATION OF THE DATA

This chapter is organized in the following manner. First, data which relates to sex differences and departmental affiliation are presented. These results are presented as generalized findings. Secondly, data relating to the major hypothesis of the study are presented along with the various statistical tests of significance.

Discussion of the findings follows in Chapter V.

General Distribution Data

In Table VI, the distribution data for the total group of educators and for each of the four specializations is presented for both sexes.

The highest mean on the Mach V Scale (100.5) was that of female secondary education majors; the lowest was that of female elementary education majors (95.89). This difference was significant at the .05 level. Females had higher means than males in educational administration and in secondary education. Male means were higher than female means in education as a whole and in the guidance and counseling group. Since there was only one male in elementary education, the sample was too small to be representative and thus the category of male elementary education majors is not discussed in the results.

TABLE VI

DISTRIBUTION CHARACTERISTICS OF THE TOTAL GROUP AND THE FOUR SPECIALIZATIONS BY SEX

Educators	Mean	Standard Deviation	Minimum	Maximum	Range	Number
All	97.98	8.62	75	122	47	226
Male	98.18	8.81	75	122	47	100
Female	97.82	8.50	78	122	44	126
Educational Administration						
Male	98.26	9.04	75	122	47	66
Female	99.79	9.33	84	122	38	34
Elementary Education						
Male	104.00	-0-	104	104	-0-	1
Female	95.89	7.43	78	114	36	45
Secondary Education						
Male	97.00	7.92	82	110	28	19
Female	100.05	9.55	82	122	40	21
Guidance and Counseling						
Male	99.17	9.67	80	116	36	12
Female	96.86	7.75	82	110	28	28

Male educators' scores ranged from 75 to 122; female educators' scores ranged from 78 to 122; educational administration males ranged from 75 to 122; educational administration females scored from 84 to 122; elementary education women's scores range from 78 to 114; the scores of secondary education men ranged from 82 to 110; for women in secondary education the range was from 82 to 122; male guidance and counseling majors scored from 80 to 116; and female guidance and counseling majors scored from 82 to 110.

The greatest range in scores among the four specializations was in educational administration with males having a spread of 47 points. The smallest range was that of secondary education males and guidance and counseling females. Each had a spread of 28 points and each ranged from 82 to 110.

This next section will present the results of the statistical analysis used to test the significance of each of the four null hypotheses examined in this study.

Hypothesis 1

The null hypothesis that there would be no significant differences between the Mach V distributions of professional educators and those of the undergraduate population was rejected. The differences proved significant at the .05 level using a two-tailed t-test. The critical value

of t at the .05 level was 1.96. The t-test between the male educators and the male undergraduate population yielded a t of +2.22; the male undergraduate population had a significantly higher Mach V mean score than their educator counterparts. The t-test between the female educators and their undergraduate population counterparts yielded a t of +6.45; the female educators having a significantly higher Mach V mean score than their undergraduate population counterparts.

TABLE VII

DISTRIBUTIONS: GENERAL POPULATION AND EDUCATORS

Population	N	Mean	Standard Deviation	Standard Error
Male				
Undergraduate*	764	99.27	11.17	.40
Educators	100	98.18	8.81	.89
Female				
Undergraduate*	832	95.60	10.09	.35
Educators	126	97.82	8.5	.75

Source:

*These norms are based on data collected in 1964 from 1,596 undergraduate students attending 14 different universities (Christie and Geis, 1970, p. 314).

Hypothesis 2

The null hypothesis that there would be no significant differences in the Mach V distributions among the four areas of specialization: educational administration, elementary education, secondary education, and guidance and counseling cannot be rejected. The mean scores of the four specializations differed by less than three points as Table VIII shows.

That these differences were not statistically significant was demonstrated by the results of the analysis of variance presented in Table IX.

The .05 level of significance for these degrees of freedom require an F value of 2.65; therefore, the null hypothesis that there would be no significant differences among these four fields of specialization cannot be rejected since the F yielded was 1.14.

Hypothesis 3

The null hypothesis that there would be no significant relationship between an educator's interpersonal interaction style and his predicted later "success" as an educational administrator must be rejected. The critical value for chi-square at .05 level for one degree of freedom is 2.71. The statistical analysis yielded a chi-square of

TABLE VIII

DISTRIBUTION CHARACTERISTICS OF EACH SPECIALIZATION

Educational Specialization	Mean	Standard Deviation	Minimum	Maximum	Range	Number
Educational Administration	98.78	9.12	75	122	47	100
Elementary Education	96.07	7.44	78	114	36	46
Secondary Education	98.60	8.84	82	122	40	40
Guidance and Counseling	97.55	8.31	80	116	36	40

TABLE IX

ANALYSIS OF VARIANCE
MACH V BY MAJOR

Source of Variation	Sum of Squares	DF	Mean Square	F
Main Effects	255.415	3	85.138	1.14
Residual	16471.145	222	74.194	
Total	16726.562	225	74.340	

3.27 which is significant at the .05 level. Table X shows that analytically-oriented educational administration students were predicted as having a higher degree of later "success" significantly more frequently than their affectively-oriented counterparts.

TABLE X

INTERPERSONAL INTERACTION STYLE AND
PREDICTED "SUCCESS"

	High Mach	Low Mach	
Predicted Successful	20	4	24
Not Predicted Successful	46	30	76
	66	34	N = 100

The author decided to run a multiple regression analysis to determine which, if any, of the following variables: Mach V score, sex, age, religion and/or years of educational experience, were significantly related to predicted future "success" for the group comprised of analytically-oriented educational administration students. For this group the only variable which yielded a significant F (3.55) was Mach V (see Table XI).

TABLE XI

MULTIPLE REGRESSION: ANALYTICALLY-ORIENTED EDUCATIONAL ADMINISTRATION STUDENTS DEPENDENT VARIABLE SUCCESS

Variable	B	Beta	Standard Error B	F*
Mach V	-0.01775	-0.26254	0.00942	3.549
Years of Experience	0.08732	0.20427	0.06789	1.654
Religion	0.03295	0.09682	0.04807	0.470
Sex	-0.04949	-0.05663	0.11543	0.184
Age	0.00965	0.03030	0.05285	0.033
(Constant)	2.78253			

*.05 level of significance for F = 2.54.

In a later analysis the author attempted to examine the relationship between the distribution of the subjects

in educational administration and the predictions made in rank order by their professors. As can be seen in Table XII, 20 of the 24 students or 83 percent of those chosen as "would-be successes" were within one standard deviation of the mean; three of the four (17%) remaining students were within two standard deviations of the mean and only one (4%) was over two standard deviations from the mean.

Another interesting fact is that seven (29%) of the 24 students chosen as would be "successes" scored exactly at the mean (98). Thus, those students chosen tend to be from the center of the distribution rather than from the extremes.

Hypothesis 4

The null hypothesis that there would be no significant differences among the Mach V distributions of professional educators by sex, religion, years of experience as an educator and age could not be reflected. A separate analysis of variance was done to measure the effect of each of these four variables on the Mach V distribution. The level of significance was set at .05 for each variable. The results of each analysis will be presented separately.

The analysis of variance by sex required an F value 3.89 to be significant. As can be seen by referring to Table XIII, the F value which resulted was .098 and thus cannot be regarded as significant.

TABLE XII

DISTRIBUTION OF CASES ACCORDING TO THE MACH V SCORE AND PROFESSORS PREDICTION OF SUCCESS

Number of Cases	Scores																												
	2SD		1SD																		1SD				2SD				
	75	80	81	82	84	86	88	90	91	92	93	94	96	98	99	100	102	104	106	108	110	112	114	116	122
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
				X	X		X	X		X		X	X	X	X	X	X	X	Ⓧ	X	X	X	X		Ⓧ
							X	X		X		X	X	X	X	Ⓧ	X	Ⓧ	Ⓧ	X	X		X		
							X	X		X		Ⓧ	X	X	X	Ⓧ	X	Ⓧ	Ⓧ	X	X				
							Ⓧ	X		X		Ⓧ	X	X			X	Ⓧ	Ⓧ	X	X				
							Ⓧ			X			X	X			Ⓧ			X					
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Total	1	1	1	2	2	1	6	5	1	6	1	5	8	14	4	4	7	5	5	8	5	2	3	1	2
Chosen	0	0	0	0	0	0	2	0	0	0	0	2	0	7	0	2	2	3	4	1	0	0	0	0	1
Not Chosen	1	1	1	2	2	1	4	5	1	6	1	3	8	7	4	2	5	2	1	7	5	2	3	1	1

Note.--Ⓧ = Selected
X = Not Selected

TABLE XIII

ANALYSIS OF VARIANCE
MACH V BY SEX

Source of Variation	Sum of Squares	DF	Mean Square	F
Main Effects	7.325	1	7.325	0.098
Residual	16719.234	224	74.639	
Total	16726.562	225	74.340	

It is interesting to note, however, that the differences between male and female educators was in the expected direction, i.e., males had a higher mean score than females (see Table XIV below).

TABLE XIV

MACH V DISTRIBUTION CHARACTERISTICS
BY SEX

Educators	Mean	Standard Deviation	Minimum	Maximum	Range	N
Male	98.14	8.82	75	122	47	100
Female	97.82	8.50	78	122	44	126

The analysis of variance of Mach V by religion required an F value of 2.41. The differences did not prove to be significant as shown by the F value of 1.25 (see Table XV). The group means are presented in Table XVI.

TABLE XV

ANALYSIS OF VARIANCE
MACH V BY RELIGION*

Source of Variation	Sum of Squares	DF	Mean Square	F
Main Effects	371.526	4	92.881	1.25
Residual	16355.035	221	74.005	
Total	16726.562	225	74.340	

*Catholic, Protestant, Jewish, Other, and Not Affiliated

TABLE XVI

MACH V DISTRIBUTION CHARACTERISTICS
BY RELIGION

Religion	Mean	Standard Deviation	Minimum	Maximum	Range	N
Catholic	94.89	8.05	78	114	36	88
Protestant	100.26	8.74	75	122	47	84
Jewish	96.00	12.72	87	105	18	2
Other	95.09	8.17	82	110	28	11
Not Affiliated	98.66	9.99	79	122	43	41

A second analysis of variance was run using the Catholic, Protestant and non-affiliated groups. The one person who had claimed to be an atheist was omitted from

the non-affiliated group for this analysis. The Jewish and Other categories were omitted because of the paucity of their numbers. The results were still not significant, however. The F which resulted was 1.38 which was lower than the 3.04 required for significance at the .05 level (see Table XVII).

TABLE XVII

ANALYSIS OF VARIANCE
MACH V BY RELIGION*

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects	205.283	2	102.641	1.385	0.251
Residual	15485.465	209	74.093		
Total	15690.750	211	74.364		

*Catholic, Protestant, and Not Affiliated.

The analysis of variance by years of experience required an F of 2.65. The analysis yielded an F of 0.33 and thus the differences among these four groups were not significant (see Table XVIII). The group means are presented in Table XIX.

TABLE XVIII

ANALYSIS OF VARIANCE
MACH V BY YEARS OF EXPERIENCE

Source of Variation	Sum of Squares	DF	Mean Square	F
Main Effects	74.160	3	24.720	0.330
Residual	16662.402	222	75.011	
Total	16726.562	225	74.340	

TABLE XIX

MACH V DISTRIBUTION CHARACTERISTICS
BY YEARS OF EXPERIENCE

Years of Experience	Mean	Standard Deviation	Minimum	Maximum	Range	N
0-2	98.47	7.85	80	110	30	49
3-5	87.27	8.06	82	122	40	67
6-10	98.73	7.84	80	116	36	48
More than 10	97.80	10.13	75	116	41	62

Lastly, the analysis by age required an F value of 2.41 to be significant. The analysis yielded an F of 1.41 which was not significant (Table XX).

TABLE XX

ANALYSIS OF VARIANCE
MACH V BY AGE

Source of Variation	Sum of Squares	DF	Mean Square	F
Main Effects	416.604	4	104.151	1.41
Residual	16309.957	221	73.801	1.41
Total	16726.562	225	74.340	

The distribution differences, with the exception of the 26-30 age group, were in the expected direction, each group scoring lower than that which preceded it (Table XXI).

TABLE XXI

MACH V DISTRIBUTION CHARACTERISTICS
BY AGE

Age	Mean	Standard Deviation	Minimum	Maximum	Range	N
20-25	99.59	6.76	86	110	24	38
26-30	96.20	8.39	82	122	40	64
31-35	99.12	8.22	80	116	36	43
36-40	98.77	10.27	78	122	44	28
41 and Over	97.65	8.60	75	122	47	53

As can be seen from the results just presented, the null hypothesis that there would be no significant differences among the Mach V distributions by sex, religion, years of experience and age, cannot be rejected.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

This chapter will discuss the general findings of the study, present the conclusions reached, and will make recommendations for research and practice.

Summary of Findings and Discussion by Hypothesis

Hypotheses 1. There will be significant differences in analytical orientation between individuals in the undergraduate population and professional educators.

The two-tailed t tests used to measure the significance of the differences between the Mach V distributions of professional educators and the distributions of the undergraduate population showed that the male undergraduate population had a significantly higher Mach distribution than did their educator counterparts (see Table VII). Further, female educators had a significantly higher Mach distribution than did their undergraduate counterparts.

Perhaps part of the difference between male educators and the male undergraduate population could be due to the fact that highly analytical males tend to go into careers or fields of study which allow even greater possibilities for manipulative behaviors, e.g., public relations, business,

psychology, etc. This interpretation is partially supported by the fact that both Silverstein and Black found that highly analytical medical students tend to specialize in psychiatry rather than other fields of medicine which would not provide nearly as many opportunities to exercise their manipulative tendencies.[104]

The fact that female educators scored higher than their undergraduate counterparts could be due to various reasons. First, the undergraduate population data used in this study was gathered in 1964, thus pre-dating the women's liberation movement. A more recent sample of undergraduate women might score higher on the analytic orientation dimension. Second, perhaps women who go on to graduate school are more analytically oriented than women who do not go on to graduate school.

Hypothesis 2. There will be significant differences among the distributions of analytically-oriented individuals for practicing educators of elementary education, secondary education, guidance and counseling, and educational administration.

Analysis of variance results of the comparison of the Mach V means scores of educational administration majors

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[104]Cited in Studies in Machiavellianism by R. Christie and F. L. Geis (New York: Academic Press, 1970), p. 346.

($\bar{x}$ = 98.78); elementary education majors ($\bar{x}$ = 96.07); secondary education majors ($\bar{x}$ = 98.60); and counseling and guidance majors ($\bar{x}$ = 97.55) show that there were no significant differences among students in these four fields of specialization (Table IX).

The fact that elementary teachers scored the lowest of all four groups, although not significantly so, would tend to support Greenfield's contention that:

> Elementary school principals would be more likely to exhibit the affective interpersonal orientation than the analytical orientation; conversely, principals at the secondary level would be more likely to exhibit an analytical orientation. These differences would appear to be associated with the relatively greater emphasis upon concern for inculcating young children with basic values and motives during the elementary years; as children approach adulthood, there would seem to be more emphasis upon overt behavior. The difference in organizational goals at the elementary and secondary levels would appear to be reflected at least partially in the behavior styles of the socializing agents at these levels.[105]

It would seem logical to assume that a similar difference in interpersonal orientation would probably hold true for secondary and elementary education teachers as well as for principals. This assumption is supported by the fact that when we look at the distribution data for each of the specializations by sex, we find the female elementary education teachers had the lowest mean (95.89) and the female secondary education teachers had the highest mean

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[105]Greenfield, op. cit., pp. 108-109.

(100.05) and that this difference was significant at the .05 level.

In the same vein, it is interesting to note that the educational administration group did have the highest mean score of all four specializations, suggesting that this specialization tends to attract and/or require more analytically-oriented individuals than the other three. The secondary education group comes in a very close second. Both educational administration and secondary education are slightly above the overall educator mean of 97.98 and both the counseling and guidance group and the elementary education group are slightly below the overall educator mean. Thus, these two sets of groups could be classified as analytical groups and affective groups respectively.

It is interesting to note that while in the field of medicine the specialization of psychiatry attracts the most highly analytical students, in the field of education, guidance and counseling was third in order of analytic orientation among the four specializations measured. Perhaps it is because in education as a whole interpersonal manipulation is important to an individual's success as an educator, while in medicine, interpersonal manipulation could "make a difference in the psychiatrist's success while it would be of little relevance to a surgeon's success in performing an operation."[106]

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[106]Christie and Geis, op. cit., p. 346.

Hypothesis 3. There will be a significant relationship between a professional educator's predicted "success" as an educational administrator and his interpersonal interaction style as determined by the Mach V scale. A chi-square analysis (Table X) showed that analytically-oriented students were selected as probable later "successes" significantly more often than their affectively-oriented counterparts. The significant relationship between professors' predictions and the analytic orientation of educational administration students could be an indication that the types of behaviors predicted by Christie and Geis' interpersonal interaction model should be kept in mind during the selection and/or training of potential administrators.

A look at the data presented in Table XII, Chapter IV, shows that 20 of the 24 students selected as potential successes (84%) were at or above the mean. Of these, 18 were located between the mean and one standard deviation above the mean. These results support Christie and Geis' hypothesis that relatively high Machs should be more successful than "extremely high Machs" whose

> cool cognitive analysis of the needs of the organization coupled with a disregard for the individual needs of those within it could quite easily lead to disaffection and problems of morale which (could) cripple the organization.[107]

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[107] Ibid., p. 357.

A look at the location of the low Machs chosen would seem to support a similar contention, i.e., relatively low Machs would be more successful than extremely low Machs. Two of the four low Machs predicted as would be "successes" (50%) were within one standard deviation of the mean.

Hypothesis 4. There will be a significant relationship between the degree of analytical orientation and sex, age, years of educational experience, and religion. Four separate analyses of variance were performed to test the significance of the differences among the groups of each of the variables mentioned above. The findings of each analysis of variance will be presented separately.

Sex. An analysis of variance (Table XIII) failed to reveal any significant differences between the Mach distributions of male and female educators.

Nachamie and Braginsky likewise found no significant differences by sex in the distributions of 10 and 11 year old children's effective manipulation.[108] In the NORC sample, however, females did score significantly lower than males, but the level of significance was not as high as it was for the college sample (see page 13).

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[108]Ibid., p. 332.

Age. An analysis of variance comparing the mean Mach V scores of five age groups revealed no significant differences. Although the differences among the five age groups were not significant, they were, with one exception, in the expected direction. That is, each group scored lower than that which preceded it in the order of increasing age. The mean for the 20 to 25 year old group was 99.59, the mean for the 26 to 30 year old group was 96.20 (this was the exception mentioned above), the mean for the 31 to 35 year old group was 99.12, the 36 to 40 year old group had a mean of 98.77 and the 41 and over group had a mean of 97.65 (Table XX).

These findings complement the NORC survey's finding of a significant negative correlation between age and Mach V scores ($p = .01$).[109] Similarly, Christie and Merton found that older people who one might expect to be very manipulative such as Washington lobbyists or business executives scored lower than did college students.[110]

Years of educational experience. Analysis of variance (Table XVIII) results revealed no significant differences among four subgroups in the category of educational experience.

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[109]Ibid., p. 317.

[110]Christie and Merton, loc. cit.

The subgroups and their respective Mach V means and standard deviations are presented below:

Subgroups	Mean	Standard Deviation
0-2 years experience	98.47	7.85
3-5 years experience	97.27	8.06
6-10 years experience	98.73	7.84
more than 10 years experience	97.80	10.13

These results would tend to confirm Christie and Geis' supposition that Mach scores among adults "appear to be more closely related to pre-adult influences than to experiences after attaining maturity."[111] Similarly, Newcomb found that values remain remarkably stable 25 years after college graduation.[112] These results also support Wrightsman's contention that philosophies of human nature do not change much after a person reaches adolescence.[113]

The fact that, generally speaking, older people tend to score lower than younger people on the Mach V (see page 13), plus the fact that years of experience did not influence Mach V scores significantly, could be interpreted as supporting Christie and Geis argument that:

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[111]Christie and Geis, op. cit., p. 316.

[112]Cited in Studies in Machiavellianism by R. Christie and F. L. Geis (New York: Academic Press, 1970), p. 316.

[113]Wrightsman, op. cit., p. 209.

> Each recent generation in the United States is socialized to become more Machiavellian and that lower means among older adults reflect a clinging to values common when they were growing to maturity.[114]

This argument is further supported by the fact that

> of the three college samples collected in the fall of 1955, two had lower scores on Mach IV than any of the fourteen collected nine years later in the fall of 1964. The school with the highest mean score in 1955 had a higher score than only one school in 1964, being lower than the other 13.[115]

Further longitudinal studies in this area would be most welcome.

Religion. No significant differences were found in the Mach V distributions among the following religion subgroups: Catholics, Protestants, Jewish, other and non-affiliated.

The NORC survey, like the present study, found no significant differences in the Mach V distributions among adult respondents who identified themselves as Protestant, Catholic, Jewish or other. However, Strickland found that among

> 2500 male medical college students . . . there was a significant tendency for those identifying themselves as Jewish to score higher than those identifying themselves as Protestants who in turn scored higher than Catholics. Among college students it is those respondents with more orthodox or fundamentalist religious affiliations . . . who are least Machiavellian and those with no claimed religious affiliation who score highest.[116]

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[114] Christie and Geis, op. cit., p. 316

[115] Ibid., p. 319. [116] Ibid., p. 322.

As can be seen from the data presented below the only similarity in results of this variable in this sample with that of the Strickland data and the Christie and Geis national college sample data was that Protestants did score higher than Catholics although not significantly so.

Group	$\bar{x}$	Standard Deviation	N
Catholic	99.89	8.05	88
Protestant	100.26	8.74	84
Jewish	96.00	12.72	2
Other	95.09	8.17	11
Not affiliated	98.66	9.99	41

A later analysis which omitted Jewish, Other and the one subject who had identified himself as an atheist and had been included in the Not Affiliated group, also revealed no significant differences among Catholics, Protestants and the Not Affiliated.

The author had thought that the Not Affiliated group would be related to the idea of non-structuredness, that is to say, that the Not Affiliated individual would tend to be someone who preferred non-structured kinds of situations and would probably have higher Mach scores. This was not supported by the data, however, and thus it is probably safe to assume that the non-structuredness of non-affiliation is conceptually different than the degree of structure as in the case of Catholics and Protestants.

Implications of the Study

The literature review presented in Chapter II shows that many of the behaviors predicted by the Mach V are important for teachers, counselors and administrators. The availability of norms for the Mach V in the areas of administration, teaching, and counseling is a step forward in the Mach V's implementation as a tool for the recruitment, selection and placement of administrators, counselors and teachers.

If the person doing the recruitment, selection or placement has a firm grasp of the conceptual identifications of high and low scoring subjects, he could probably determine whether a prospective employee is analytically or affectively oriented simply by interacting with him or observing another interact with him under previously prepared conditions, thus obviating the need of the prospective recruits actually having to respond to the Mach V questionnaire. (This was successfully done in the "In Search of the Machiavel Study." See page 12.)

The results of this study suggest that once administrators and/or personnel directors are fully aware of the behavioral implications of a person's interpersonal interaction style they could use this information to determine which responsibilities should be delegated to whom and who would be best suited for a particular position or task, i.e., the

administrator would assign affective individuals to structured job situations or tasks and analytical individuals to unstructured job situations or tasks.

The reasoning behind administrative placement of analytic people and affective people in structured and unstructured situations respectively is based not only on Christie and Geis' interpersonal interaction theory and the contention that people's basic values and attitudes are not very easily changed (Mischel,[117] Likert and Hayes,[118] Etzioni,[119] and Wrightsman[120]), but also on the Getzels-Guba theory of social system functioning which Charters[121] considers "the most influential role theory in education." (In the Getzels-Guba theory, "social systems consist of two different but interacting dimensions--the nomothetic which is concerned with the institutional role of the individual, and the ideographic which focuses on the personality and individual needs dispositions of organizational members. When an individual performs up to his role expectations, he

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[117]Mischel, op. cit., p. 1012.

[118]Likert and Hayes, op. cit., pp. 94-95.

[119]Etzioni, "Human Beings Are Not Easy To Change After All," pp. 45-47.

[120]Wrightsman, op. cit., p. 209.

[121]Cited in Handbook of Research on Teaching by N. L. Gage (Chicago: Rand McNally and Company, 1967), p. 789.

is said to be adjusted to his role and effective. When he fulfills all his needs, he is said to be integrated and efficient. Hopefully each individual is both effective in his job and efficient as a person.")[122]

Conflicts between these two dimensions can be problematic for the institution because it forces the individual to choose between fulfilling his needs and fulfilling his role's expectations. Conflicts between the nomothetic and ideographic dimensions occur when there are

> discrepancies between patterns of expectations attaching to a given role and patterns of need dispositions characteristic of the incumbents of the role. Typical of this kind of conflict are the army sergeant with high need for submission, the light housekeeper with high need for affiliation, the authoritarian teacher in a permissive school, the administrator with a high need for abasement and so on. In all these cases there is mutual interference between nomothetic expectations and idiographic dispositions, and the individual must choose whether he will fulfill individual needs or institutional requirements. If he chooses to fulfill requirements . . . he is in a sense shortchanging himself, and is liable to unsatisfactory personal adjustment; he is frustrated and dissatisfied. If he chooses to fulfill his needs, he is short-changing his role and is liable to unsatisfactory role performance.
>
> Lipham recently studied this problem in the educational setting. On the basis of the present model (the Getzels-Guba theory of social system functioning) and preceding work in the area, he argued that the role of school administrator could be defined in terms of a number of crucial expectations. The administrator is expected for example to exert himself energetically, to strive for higher status, to relate himself

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[122]Sherman Frey and Keith R. Gethschman, School Administration Selected Readings (New York: Thomas Y. Crowell Company, 1968), p. 243.

> successfully to other people, etc. He hypothesized that persons having a basic personality structure characterized by such needs and dispositions will suffer less strain in fulfilling the administrator role and will therefore be more effective than persons whose needs and dispositions are in conflict with the role expectations.
>
> Accordingly, he assessed by interview and personality instruments . . . the personality structure of two samples of 21 principals each within a single school system, one sample having been rated highest in effectiveness by the superintendent and his staff, the other sample lowest. The results confirmed the hypothesis; the more effective principals tended to score significantly higher in activity drive, social ability, emotional control, mobility, drive and so on than did the less effective principals. The less effective principals tended to score higher on such needs as abasement, which are in conflict with the expectations for the principal role.[123]

It would seem logical that an analytic individual would be most likely to be efficient as a person and effective in his job in an unstructured situation and an affective individual would be most likely to achieve this kind of effectiveness and efficiency in a structured situation. To determine the kinds of situations each should be assigned to, based on their interpersonal interaction style, would seem to follow logically from Getzels and Guba's theory, the practicality of which, is emphasized by the results of Lipham's study.

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[123]J. W. Getzels, "Conflict and Role Behavior in the Educational Setting," Readings in the Social Psychology of Education, eds. W. W. Charters and N. L. Gage (Boston: Allyn and Bacon, 1963), pp. 313-314.

Suggestions for Other Studies

In the field of education as a whole the author would suggest three areas of inquiry:

1. Replications of this study in different parts of the country which could be used to establish nationwide norms for educators on the Mach V scale;

2. Studies which would examine the possibility and feasibility of teaching prospective educators to be more analytical in their interpersonal orientation; and

3. Taking into account that both Guterman[124] and Russell[125] found a positive relationship between Mach V scores and various measures of aggression, it would be interesting to compare Mach V scores and the selection of different fields of study, including education, to see if the stereotype that aggressive males do not tend to choose education as a profession contains any truth.

In the field of administration, a study which compared the interpersonal interaction style of different administrators with some measure(s) of their "success" as administrators would seem to be a logical next step after determining that

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[124]Guterman, op. cit., p. 30.

[125]Gordon W. Russell, "Machiavellianism, Locus of Control, Aggression, Performance, and Precautionary Behavior in Ice Hockey," Human Relations, Vol. 27, No. 9 (December, 1974), pp. 825-837.

an individual's predicted success is significantly related to his or her interpersonal interaction style.

Another study which might yield results capable of generating theory would be one which compared the organizational climates generated under analytically-oriented administrators on the one hand and affectively-oriented administrators on the other. Similar studies could be done comparing the kinds of classroom climates generated under analytic teachers and affective teachers, or the kind of rapport felt by students with affective counselors vs. analytic counselors.

Finally, I would recommend doing a study similar to that of Lipham's (mentioned earlier in this chapter); only this time exploring the contention that an analytical individual is more likely to be both effective and efficient in an unstructured situation and an affective individual is more likely to be both efficient and effective in a structured situation.

Summary

The purpose of the study was to determine the Mach V Scale's distribution for educators in the fields of administration, teaching, and guidance and counseling. The study also was to determine whether or not there was a significant relationship between an individual's predicted success and his interpersonal interaction style.

The results of the study were as follows:

There were no significant differences among the Mach V distributions among the four areas of specialization considered, i.e., elementary education ($\bar{x}$ = 96.7), secondary education ($\bar{x}$ = 98.6), guidance and counseling ($\bar{x}$ = 97.5), and educational administration ($\bar{x}$ = 98.78). The mean for the total group of educators comprised of these four specializations was 97.87.

Analytically oriented students of educational administration were predicted probable later "successes" significantly more than their affectively oriented counterparts.

Age, religion, years of educational experience and sex did not significantly influence the Mach V distribution in this study.

Further studies were recommended relating "success" as an administrator to the individual administrator's interpersonal interaction style. Another study suggested was one which would examine the relationship, if any, between organizational climate and an administrator's interpersonal interaction style.

APPENDIX

No.____

Personal Data

1) Which of the following are you majoring in:

   a) Educational Administration

   b) Primary Education

   c) Secondary Education

   d) Guidance and Counseling

   e) None of the above

2) I am currently working towards certification as a school administrator:

   a) Yes

   b) No

3) I am currently certified as a school administrator:

   a) Yes

   b) No

4) Sex:

   a) Male

   b) Female

5) Religion

   a) Protestant

   b) Catholic

   c) Jewish

   d) Other

   e) Not affiliated with any organized religion

6) Years of educational experience:

   a) 0 to 2 years

   b) 3 to 5 years

   c) 6 to 10 years

   d) more than 10 years

7) Age

   a) 20 to 25 years old

   b) 26 to 30 years old

   c) 31 to 35 years old

   d) 36 to 40 years old

   e) 41 and over

BIBLIOGRAPHY

Abramson, Edward E. "The Counselor as Machiavellian," Journal of Clinical Psychology, Vol. 29, 1973, pp.348-349.

Aquarius, Qass. The Corporate Prince. London: Educational Publishing, Inc., 1971.

Ari, Donald, and Cheser Lucy Jacobs. Introduction to Research in Education. New York: Holt, Rinehart and Winston, Inc., 1972.

Blood, Ronald E. "The Function of Experience in Professional Preparation: Teaching and the Principalship." Unpublished doctoral dissertation, Claremont Graduate School, 1966.

Blumstein, Philips W. "Audience, Machiavellianism and Tactics of Identity Bargaining," Sociometry, Vol. 36, No. 3, 1973.

Breer, Paul, and Edwin A. Locke. Task Experience As a Source of Attitudes. Homewood, Illinois: The Dorsey Press, 1965.

Bursten, Ben. The Manipulator: A Psychoanalytic View. New Haven: Yale University Press, 1973.

Campbell, Donald T., and Julian C. Stanley. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally College Publishing Company, 1973.

Christie, Richard, and Florence L. Geis. Studies in Machiavellianism. New York: Academic Press, 1970.

_____, and R. K. Merton. "Procedures for the Sociological Study of the Value Climates of Medical Schools," Journal of Medical Education, 1958.

Cole, David L. "Machiavellianism and Political Behavior," Journal of Social Psychology, Vol. 87, 1972.

Crombach, Lee J. Fundamentos de la Exploracion Psicologica. Madrid: Biblioteca Nueva, 1963.

Crosby, Philip B. The Art of Getting Your Own Sweet Way. New York: McGraw-Hill, Inc., 1972.

Culberson, Jack A., and Stephen A. Heneley. Preparing Administrators: New Perspective. Columbus, Ohio: University Council for Educational Administrators, 1963.

Cyrns, Arthur, and Jeremy Finn. "A Multivariate Analysis of Some Attitudinal and Ideological Correlates of Student Activism," Sociology of Education, Vol. 46, Winter, 1973.

Dale, Edgar. Building a Learning Environment. Bloomington: Phi Delta Kappa, Inc., 1972.

Durkin, J. E. "Emphatic Orientation in Physical Encounters." Paper presented at the annual meeting of the Eastern Psychological Association, Boston, April, 1967.

Dusting, Richard, and Rickey George. Action Counseling for Behavior Change. New York: Intext Press, Inc., 1973.

Edwards, A. L. The Social Desirability Variable in Personality Assessment and Research. New York: Dryden Press, 1957.

Etzioni, A. "Human Beings Are not Very Easy to Change After All," Saturday Review, June 3, 1972, 55(23), pp. 45-47.

Exline, R. V., and others. "Visual Interaction in Relation to Machiavellianism and an Unethical Act." Paper presented at the 1961 APA meeting.

Frey, Sherman, and Getschman. School Administration Selected Reading. New York: Thomas Y. Crowell Co., 1968.

Geis, Florence L. "Machiavellian and the Manipulation of One's Fellow Man." Unpublished Manuscript Presented at the annual meeting of the American Psychological Association, Los Angeles, September, 1974.

_____, E. Krupat, and D. Berger. "Taking Over in Group Discussions." Unpublished Manuscript, New York University, 1965.

_____, S. Weinheimer, and D. Berger. "Playing Legislature: Machiavellianism in Log-rolling." Paper presented at the annual meeting of the American Psychological Association, New York, September, 1966.

_____, and Richard Christie. "Machiavellianism and Tactics of Manipulation." Symposium Address at the Annual Meeting of the American Psychological Association, Chicago, September, 1965.

Goldhammer, Keith. The Social Sciences and the Preparation of Educational Administrators. Oregon: University of Alberta and the University Council for Educational Administrators, 1963.

_____, and others. Issues and Problems in Contemporary Educational Administration. Eugene: University of Oregon, 1967.

Grambs, Jean D., and Walter Waetjen. Sex: Does it Make a Difference? Belmont, California: Wadsworth Publishing Co., 1975.

Greenfield, William P. "Becoming a School Administrator: Socialization Processes During the Teaching Years." Unpublished doctoral dissertation, University of New Mexico, 1973.

Guterman, Stanley. The Machiavellians. Lincoln: University of Nebraska Press, 1970.

Haan, N., M. B. Smith, and J. Block. "The Active and Passive Syndrome," Journal of Psychology, 40, 1955, pp. 87-94.

Harris, T. M. "Machiavellianism, Judgment, Independence and Attitudes Towards Teammate in a Cooperative Judgment Task." Unpublished doctoral dissertation, Columbia University, 1966.

Hess, Stephen G. "Sensitivity to Communication in School Administrators." Unpublished doctoral dissertation, University of New Mexico, 1970.

Hilway, Tyrus. American Education. Boston: Houghton, Mifflin Co., 1964.

Hostrop, Richard. Managing Education for Results. Homewood, Illinois: ETC Publications, 1975.

Hutt, Corrine. Males and Females. Baltimore: Penguin Books, Ltd., 1972.

I.S.R. Journal, Vol. I, No. 1. Montpelier: Capital City Press, 1969.

Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, Inc., 1973.

Klein, Edward B. "Machiavellianism and other Personality Attributes of Psychiatry Residents," International Journal of Social Psychiatry, Vol. 15, No. 3, 1969.

Kohl, Herbert R. The Open Classroom. New York: Random House, Inc., 1969.

Korda, Michael. Power! New York: Ballantine Books, 1976.

Korten, F. F., S. W. Cook, and J. I. Lacey, eds. Psychology and the Problems of Society. Washington, D.C.: American Psychological Association, 1970, pp. 451-459.

Levin, William, and Jack Levin. "Social Comparison of Grades: The Influence of Mode of Comparison and Machiavellianism," The Journal of Social Psychology, Vol. 91, 1973.

Likert, Reusis, and Samuel P. Hayes. Some Applications of Behavioural Research. Paris: Unesco, 1957.

Lipham, James M. "Personal Variables of Effective Administrators," Administrators Notebook, Vol. IX, No. 1, University of Chicago, 1960.

Machiavelli, N. The Prince. England: The Chaucer Press, 1961.

Mason, Edwin. Collaborative Learning. New York: Agathon Press, Inc., 1973.

Matheny, Kenneth. "Counselors as Environmental Engineers," The Counselor As An Applied Behavioral Scientist. New York: MSS Information Corporation, 1974.

McClellan, P. C., and others. "Talent and Society: New Perspectives in the Identification of Talent," Harvard Educational Review, Vol. XXIX, No. 1, Winter, 1969.

McGee, H. M. "Measurement of Authoritarianism and its Relation to Teachers' Classroom Behavior," Genet. Psychol. Monogr., 52, 1955, pp. 89-146.

Miller, Gerald R., and Michael Burgoon. New Techniques of Persuasion. San Francisco: Harper and Row Publishers, 1973.

Morrison, A., and D. McIntyre. Teachers and Teaching. Baltimore, Maryland: Penguin Books, Ltd., 1969.

Mosher, Leslie E., and Ruth S. Moser. Counseling and Guidance: An Exploration. New Jersey: Prentice-Hall, Inc., 1963.

Mulholland, John, and George W. Gordon. The Magical Mind. New York: Hasting House Publishers, Inc., 1967.

O'Kelley, Victoria, and Diana Solar. "Machiavellianism in Parents and Children," Psychology Reports, Vol. 29, 1973.

Osipow, Bruce W. Behavior Change in Counseling: Reading Cases. New York: Appleton Century Crofts, 1970.

Patterson, C. H. Counseling and Guidance in Schools. New York: Harper and Brothers, 1962.

_____. The Counselor in the School: Selected Reading. New York: McGraw Hill Book Company, 1967.

Primavera, Louis, and Margaret Higgins. "Non-Verbal Rigidity and its Relationship to Dogmatism and Machiavellianism," Perceptual and Motor Skills, Vol. 36, 1973.

Rim, Y. "Machiavellianism and Decisions Involving Risks," British Journal of Social and Clinical Psychology, 5, 1966, pp. 36-50.

Rosenberg, S., P. Erlick, and L. Berkowitz. "Some Effects of Varying Combination of Groups' Members on Group Performance Measures and Leadership Behaviors," Journal of Abnormal and Social Psychology, 1955.

Sherman, Robert A. Behavior Modification Theory and Practice. Belmont, California: Wadsworth Publishing Co., Inc., 1973.

Silberman, Charles E. The Open Classroom Reader. New York: Random House, Inc., 1973.

Silverstein, Albert. Human Communication: Theoretical Explorations. New York: John Wiley and Sons, 1974.

Simon, Herbert A., Donald W. Smithburg, and Victor Thompson. Public Administration. New York: Alfred A. Knopf, Inc., 1950.

Singer, J. E. "The Use of Manipulative Strategies: Machiavellianism and Attractiveness," Sociometry, 1964.

Smith, O. B., Saul Cohen, and Arthur Pearl. Teacher for the Real World. Washington: The American Association of Colleges for Teacher Education, 1970.

Solar, Diana, and Bruelh Dieter. "Machiavellianism and Locus of Control: Two Conceptions of Interpersonal Power," Psychological Reports, Vol. 29, 1971.

Snedfeld, Peter. Attitude Change. New York: Aldine-Atherton, Inc., 1971.

Taft, R. "The Ability to Judge People," Psychological Bulletin, 1955.

Terry, George R. Principios de Administration. Mexico: Compania Editorial Continental S.A., 1963.

Toffler, Alvin. Future Shock. New York: Bantam, 1971.

Tuckman, Bruce W. Conducting Educational Research. New York: Harcourt-Brace-Jovanovich, Inc., 1972.

Touhey, John C. "Machiavellianism and Social Mobility," Psychological Reports, Vol. 29, 1971.

_____. "Child-Rearing Antecedents and the Emergence of Machiavellianism," Sociometry, Vol. 36, No. 2, 1973.

Van Meter, Eddy J. Theory Development and Educational Administration. New York: MSS Information Center, 1973.

White, W. M. H., Jr. The Organization Man. New York: Simon and Schuster, Inc., 1956.

Wegner and Sherwood. The Study of Attitude Change. Belmont, California: Wadsworth Publishing, Inc., 1969.

Wrightsman, Lawrence S. Assumptions About Human Nature: A Social-Psychological Approach. Belmont, California: Wadsworth Publishing Co., 1974.

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