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Springston, Jeffery Kent

THE ROLE OF INTERACTION INVOLVEMENT, MACHIAVELLIANISM, AND LOCUS OF CONTROL OF REINFORCEMENT ON INDIVIDUAL BEHAVIOR IN SMALL TASK ORIENTED GROUPS

The Ohio State University

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THE ROLE OF INTERACTION INVOLVEMENT, MACHIAVELLIANISM, AND LOCUS OF CONTROL OF REINFORCEMENT ON INDIVIDUAL BEHAVIOR IN SMALL TASK ORIENTED GROUPS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of the Ohio State University

By

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The Ohio State University

1986

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To George and Susie
ACKNOWLEDGMENTS

I would like to express my thanks to many of the instructors in my college experience, but in particular the members of my dissertation committee. Dr. Keith Brooks and Dr. Donald Cegala have always exhibited the upmost consideration and professionalism. I would especially like to thank my advisor, Dr. Victor Wall, for his insight and attention during the doctoral experience. All three gentlemen give respect and command it.

I would also like to express thanks to two of my colleagues at OSU, Steve Levitt and Joann Keyton. Their intelligence, humor, and friendship made this trek much more enjoyable.

My friend Mao must also receive mention. He was with me through times of good and bad. He caused no harm. I shall miss him.

Perhaps most of all my parents should be thanked. They serve as the inspiration for most that I do. They have never lost faith.

Finally, to Carol Ann. She gives it all meaning.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>VITA</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>CHAPTER ONE: Introduction and Rationale</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Personality and Power</td>
<td>2</td>
</tr>
<tr>
<td>SYMLOG</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER TWO: Review of Literature</td>
<td>8</td>
</tr>
<tr>
<td>Machiavellianism</td>
<td>8</td>
</tr>
<tr>
<td>Locus of Control of Reinforcement</td>
<td>19</td>
</tr>
<tr>
<td>Interaction Involvement</td>
<td>38</td>
</tr>
<tr>
<td>SYMLOG</td>
<td>53</td>
</tr>
<tr>
<td>Summary of Review of Literature</td>
<td>62</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>63</td>
</tr>
<tr>
<td>CHAPTER THREE: Methodology</td>
<td>67</td>
</tr>
<tr>
<td>Subjects</td>
<td>67</td>
</tr>
<tr>
<td>Procedure</td>
<td>68</td>
</tr>
<tr>
<td>Instruments</td>
<td></td>
</tr>
<tr>
<td>Interaction Involvement Scale</td>
<td>73</td>
</tr>
<tr>
<td>Rotter's Locus of Control of</td>
<td>74</td>
</tr>
<tr>
<td>Reinforcement Scale</td>
<td></td>
</tr>
<tr>
<td>Mach V Scale</td>
<td>75</td>
</tr>
<tr>
<td>Interaction Coding</td>
<td></td>
</tr>
<tr>
<td>SYMLOG Scoring Procedure</td>
<td>76</td>
</tr>
<tr>
<td>Statistical Analyses</td>
<td>79</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Data Summary of Personality Variables Across All Subjects.</td>
<td>82</td>
</tr>
<tr>
<td>2. Data Summary of Coded Interaction Across All Subjects.</td>
<td>82</td>
</tr>
<tr>
<td>3. Data Summary of Means of Personality Scores Across Groups</td>
<td>83</td>
</tr>
<tr>
<td>4. Data Summary of Pearson Correlation Coefficients</td>
<td>84</td>
</tr>
<tr>
<td>5. Data Summary of Canonical Correlation Analysis</td>
<td>89</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequencies of personality types.</td>
<td>77</td>
</tr>
</tbody>
</table>

ix
Communication is by nature a discipline that encompasses a variety of important variables and areas of focus. One critical focus area in the field is that of interpersonal power. Power has been the focus of scholarly research for many years. Its importance to the study of social behavior has been well documented, (e.g., Adler, 1927; Berger, 1985; Hobbes, 1651; McClelland, 1975). Russell (1938) compared the importance of power in the social sciences to that of energy to the physical sciences, stating that it is "the" fundamental concept. The study of power has particularly important implications to the study of communication. Blakar (1979) has argued that language is an obvious means for exerting power. Berger (1985, p.3) asserts that, "...dimensions related to power and dominance are not only central to our understanding of social relationships in general, they are crucial for understanding the communication that takes place within those social relationships."
The current trend in research appears to view power and interpersonal communication as being reciprocal. "Persons can actualize power through their communicative conduct and communication conduct can serve as a basis for making inferences about a given individual's ability to exercise power. Thus, communication is at once both an antecedent and a consequence of power." (Berger 1985, p.2)

Although power appears to be shaped by the situation, it seems clear that an individual's personality characteristics also have an important bearing on the behavior an individual exhibits within a situation. Therefore, it can be argued that both the environment and the individual's personality must be accounted for to approach an accurate view of interpersonal power.

For a number of years social scientists have begun to examine various aspects of personality as it relates to an individual's conception of other people, and how these conceptions affect interaction with others, (e.g., Wrightman, 1972, 1964). Power as a psychological concept has been an important aspect of study in the area of personality. Minton (1967) refers to power as a psychological concept, defining it as an ability to cause environmental change so as to obtain an intended
effect. Cambell (1963) states that power can be regarded as an "acquired behavioral disposition" resulting from past experiences. He feels such dispositions function as a potential coordinator of behavior.

Minton argues for the conception of power at two levels: manifest and latent. Manifest power refers to power as a result of actual behavior. Latent power is directly analogous to Cambell's reference to "acquired behavioral dispositions." A number of theorists have devised approaches that tie into the notion of latent power, (e.g., Heider, 1958; Thibaut and Kelly, 1959; Rotter, 1966; and Christie and Geis, 1968).

Rotter has devised a concept from his social learning theory, (cf. Rotter 1954, 1955, 1960, 1966) which reflects a continuum of latent power. Rotter's locus of control of reinforcement is an attempt to conceptualize the degree to which an individual feels that he or she can control his or her environment and subsequent reinforcement within that environment. Although Rotter does not refer to power specifically in relation to locus of control, it seems to be clearly related to Minton's notion of latent power.

Another conceptualization of a personality trait that directly relates to the notion of latent power is Machiavellianism. Christie (1964) has developed several
forms of a scale that attempts to assess an individual's orientation toward others in relation to interpersonal detachment, manipulativeness, and cynicism. The items of the scale(s) were derived from Machiavelli's *The Prince* and *The Discourses*. According to Machiavelli, an individual who possesses such traits will be more effective at manipulating others to "do his/her bidding." Therefore, it is posited that high Machs tend to have the ability to exert more power in interpersonal situations and are less likely to be influenced by others.

Minton (1967) identifies a third concept important to the notion of latent power that he terms "competence." As White (1959) defines it, competence is an individual's capacity to interact effectively with his/her environment. The term effective in the definition can be argued to include the notion of being able to exert influence on the environment in some manner. Although this author does not consider competence to be synonymous with power, it can feed one's power to the extent that it enables he or she to control his or her environment.

An obvious form of competence that comes to mind is that of communication competence. This is an area of study that has received a lot of attention in recent
years. Although there is much disagreement over what the exact definition of communication competence should be, there does seem to be a growing consensus that it is comprised of three components: cognitive, affective, and behavioral, (Brunner, 1985; Cegala, 1983a, 1983b, 1984; McCroskey, 1982; Spitzberg, 1983).

In recent years there has been an increasing amount of attention given to interaction involvement, a personality trait of communication competence. Stated simply, interaction involvement may be defined as "the extent to which an individual partakes in a social environment." (Cegala, 1981) Although individuals may vary to some extent in the level of their involvement in interactions, Cegala argues that they have a generally preferred level of involvement across situations.

All three personality constructs mentioned hold great importance to communication behavior. Given the importance of power as it relates to personality, and the burgeoning interest in communication competence, the continued study of locus of control, Machiavellianism, and interaction involvement relative to communicative behavior are important areas of inquiry. The purpose of this study is to add to the body of knowledge about these constructs relative to individual communication behavior in task groups.
In addition, this study will attempt to shed light on the relationship between locus of control and Machiavellianism as they relate to interaction involvement. Given recent evidence of the relationship of locus of control and of Machiavellianism to such related concepts as social skill, perceptiveness, and responsiveness, it seems that there may be some important ties between these constructs and that of interaction involvement. (see Doherty and Ryder, 1979; Goodstadt and Hjelle 1973; Lefcourt, et. al, 1985).

Another factor that gives importance to this study relates to the method of behavior codification. Bales's SYMLOG (a System for the Multiple Level Observation of Groups) will be employed. The SYMLOG system is probably the most comprehensive group analytical tools in existence. To date much of the study involving SYMLOG has been in the nature of validating the instrument. Further use and refinement of the instrument holds much potential for the study of group interaction.

SYMLOG was recently used to study the perceptions of group members using its post-interaction adjective rating and analyzed in relation to interaction involvement. (Cegala, Wall, and Rippey, 1986) Given that individual perceptions were examined, this study performs the next logical step to that study by coding
actual behavior. It is a very useful endeavor to see how perceptions are related to actual behavior.
CHAPTER TWO

This chapter will cover a review of the relevant literature related to Machiavellianism, interaction involvement, and locus of control. Also, background will be provided on SYMLOG, the interaction coding system to be used in this study. Finally, a summary is provided which supplies the framework on which the research design for this investigation is based.

MACHIAVELLIANISM

The construct of Machiavellianism is an outgrowth of study by Richard Christie in the early 1960s of the works of Niccolo Machiavelli, a sixteenth century Florentine bureaucrat. Based on Machiavelli's two main works, The Prince and The Discourses, Christie developed a personality construct based on the principles of leadership Machiavelli had outlined. A main theme throughout Machiavelli's work is the pursuit of power by any available means of manipulation.
Christie, Agger, and Pinner (1970) attempted to operationalize "the manipulator" in terms of generalizable characteristics. They arrived at the following four:

1) **A relative lack of affect in interpersonal relationships.** Here it is assumed that success in getting compliance from others would be enhanced by viewing them as objects to be manipulated rather than as individuals. The more feeling one has toward another, the greater the chance of identifying with them, making it more difficult to use psychological leverage to influence others to do things they may not wish to do.

2) **A lack of concern with conventional morality.** The authors are referring here to such commonly reprehensible behaviors as lying, cheating, and other forms of deceit. The assumption is that the less an individual is worried about morality, the more behavioral options are open for getting his/her own way.

3) **A lack of gross psychopathology.** Christie, et al. hypothesize the manipulator as taking an instrumental or rational view of others. It is assumed that those individuals with neuroses or psychoses are not as adept at viewing reality, and fail in crucial ways to relate to others. Although the manipulator may
or may not have other mental health problems, as related to the judgment of objective aspects of reality it is assumed that they have normal abilities.

4) Low ideological commitment. It is posited that the successful manipulator is more concerned with getting things done rather than with long-range ideological goals. Being constrained by ideological commitments would work to limit the manipulator's behavioral options in getting things done. (Geis and Christie, 1970)

Based upon these characteristics, Christie and Geis have developed two personality instruments to identify individuals who typify Machiavellians or effective manipulators. The Mach IV test consists of twenty items employing a Likert-type response format. It was found, however, that the Mach IV instrument had a moderately strong negative correlation to the Edwards (1957) scale of Social Desirability. (Budner, 1962)

In an attempt to avoid the effects of social desirability upon responses to the Mach IV test, a forced-choice format was adopted. The new test, called the Mach V, consists of twenty items. Each item involves three statements in which a respondent must choose the statements that are most, and least like themselves.
Christie (1970) argues that this technique makes it difficult for the average respondent to determine which statement is the socially "correct" one, thus avoiding the problems of the Mach IV test.

Since its inception, the Mach V scale has been used in a variety of studies with interesting results. Some of the areas Machiavellianism has been linked to include emotionality, and perceptiveness, as well as other personality constructs such as locus of control. Specifically related to communication, Machiavellianism has been studied in relation to self disclosure, compliance gaining, and group communication.

As indicated earlier, one quality a high Mach is posited to have is a lack of emotionality. A number of research studies seem to bear this out. Exline, Thibaut, Hickey, and Gumpert (1970) conducted a study involving visual interaction in relation to Machiavellianism and an unethical act. It was hypothesized that individuals with a lack of affective involvement with others as well as a lack of conventional morality would be more able to establish and maintain direct eye contact with an interviewer than individuals not having those qualities. The results of the study found that high Machs tended to establish and maintain more direct eye contact than low Machs, and were judged as appearing generally less
anxious.

Studies by Christie and Geis (1970), Geis (1970), and Bogart, Geis, Levy, and Zinbardo (1970) also support the notion that high Machs are more emotionally removed than their low Mach counterparts. In various bargaining games, (e.g., the Ten Dollar Game, and The Con Game), interpersonal attraction was much less likely to interfere with the high Mach's strategies to win more compensation. Low Machs were more easily influenced by attractive partners than high Machs, and much more likely to experience dissonance about cheating in the game.

Burgoon, Miller, and Tubbs (1972) found greater compliance to counterattitudinal tasks on the part of high Machs when large incentives were used than low Machs. When low incentives were used low Machs tended to experience more dissonance, which led to greater attitude change. Novielli (1968) also found support for the belief that high Machs are less emotional. The notion was tested that low Mach's affective involvement with his/her own beliefs might hinder the ability to argue effectively for those beliefs. It was found that high Machs did no better than lows when defending "insincere" positions, but high Machs were much more effective when defending their actual beliefs.
Fry (1985) conducted a study recently which examined the effect of Machiavellianism and visual access on integrative bargaining outcomes. He discovered that high-low Mach dyads bargaining face-to-face achieved fewer jointly profitable solutions than did other combinations of Machiavellians and visual access factors. The authors argue that the low Mach's particular susceptibility to emotional distraction in face-to-face situations is a causal factor. The study supports Christie and Geis's (1970) arguments that low Machs are less effective in face-to-face competition with high Machs because they become too emotionally aroused to effectively apply themselves to the task.

In relation to perception, Christie (1970) conducted a study comparing low and high Mach's perceptions of others in an effort to measure views of people in general. Christie found that high Machs had a much more negative, cynical view of people. They tend to see others as less generous, less interesting, and less friendly than do their low Mach counterparts.

There has been a number of research studies examining Machiavellianism relative to perception or sensitivity in specific social situations. Geis and Christie (1970) found that while both high and low Machs are "sensitive to others," they are so in
different ways. High Machs were found to be sensitive to information about the other person, responding to cognitive, discriminative labels and explicit cues. This was particularly true in situations where such information was important for planning strategy for personal gain.

Geis and Christie found that low Machs appeared to be more sensitive to other people as people. They tended to be more empathetic in terms of the other's feelings, wishes, and expectations. Saling (1973) found that low Machs were more accurate in their perceptions of similarity between themselves and others. Saling found that high Machs tended to be inaccurate in their perceptions of others and that in interactions for rewards, high Machs tended to view competitors as being more dissimilar to themselves than was actually the case. Given that Saling's research focused on relational aspects, the findings support Geis and Christie's findings.

Specifically important to the present study, Machiavellianism has been examined in relation to the personality construct of locus of control. Wrightsman and Cook (1965) found that high Machiavellianism was positively related to external locus of control. Solar and Bruehl (1971) also found this to be true. They posit
that high Machs do not see themselves as capable of obtaining by themselves those things they desire, and may feel compelled to manipulate others to obtain these reinforcements. They conclude that in coping with external expectancies, Machiavellian attitudes appear an almost necessary defense.

An important focus of study has been in the area of manipulation and compliance gaining tactics. Geis, Christie, and Nelson (1970) conducted a number of studies in this area. They found that high Machs tended to use a wider variety of manipulatory tactics. In addition, high Machs told more lies when it helped their cause, and created more verbal and nonverbal distractions in an attempt to disguise actual intent in an effort to aid their cause. The researchers also found that high Machs showed more enjoyment of manipulation than did low Machs. Geis, et. al. also found that high Machs were less susceptible to being manipulated. They tended to be more cautious and less trusting of others than were low Machs.

In another study Geis (1970) arrived at similar findings. In bargaining games high Machs appeared better able than low Machs to size up the environment and then test the limits of how much they could gain through bargaining. They did so in such a way that was
not obvious to others in the situation. Geis posits that high Machs have an acute and opportunistic sense of timing in social situations. He argues, however, that this timing is not based so much on sensitivity to others as it is on a sense of what the next logical steps are, (those that will work), at various points in the social process. He claims that high Machs thrive in ambiguous situations where they can take advantage of their abilities to innovatively use manipulative tactics.

Geis and Christie (1970); Geis, Krupat, and Berger (1965) and Geis and Leventhal (1966) also found that high Machs were more adept at adapting their tactics to specific conditions of the situation at hand. In a dice bluffing game, high-Mach children were found to bluff and challenge more successfully, but not more frequently than lows.

Roloff and Banicott (1978) found that Machiavellianism was found to be significantly correlated with the general use of prosocial and psychological force compliance-gaining strategies. High Machs were found to be more active than low Machs in compliance-gaining behavior in relationships. Also, a significant interaction was found between relationships, compliance-gaining strategies and Machiavellianism. In
regard to long-term and short-term consequences, high Machs were found to be more active than low Machs. The study indicates that while Machiavellianism can predict the general direction of an individual's behavior, it is tempered by the situation.

Machiavellianism has also been studied in relation to its effects on group communication. Geis (1970) found that in three-member mixed Mach bargaining groups, high and middle Machs preferred each other as coalition partners over low Mach individuals. High Machs were found to be the most successful in maintaining coalitions. High Machs showed a "tremendous" margin over middle and low Machs in keeping winning coalitions in which the partners divided points equally.

Geis and Christie (1970) found that high Machs tend to take over the leadership in informal face-to-face groups, by initiating and controlling the structure of the group. Geis, et al., (1965) conducted a study in which members of leaderless groups rated each other on a number of dimensions. High Machs were rated higher in leadership by both high and low Machs. Hacker and Gaitz (1970) found that high Machs contributed more to small group discussion. They tended to ask for more information, made more suggestions for action, and showed a greater use of negative socio-emotional...
interaction.

Bochner and Bochner (1972) found that Machiavellian profiles had a decided effect on group interaction. They found that groups developed an atmosphere congruent with their dominant Machiavellian trait, and this climate regulated interaction. For example, as low Mach membership in a group increased, task activity increased. The authors explained that this is not as anomalous as it might first appear. The study involved the use of a highly structured task. They argue that under such less ambiguous conditions more time will be spent on socio-emotional factors than such activities as information-passing and coordination behaviors. They also found that in evenly matched heterogeneous groups low Machs showed less interest and concern in the task than low Machs in other conditions. The authors argue that these groups possess more ambivalence and ambiguity, and apparently low Machs experience greater discomfort under these conditions.

In summary, Machiavellianism has important implications with regard to interpersonal behavior. However, one must be cautious against regarding the "Machiavellian" in the perjorative manner that typically surrounds the term. As Robinson and Shaver (1973, p.592) point out, "none of the research evidence substantiates
the view that high Machs are more hostile, vicious, or vindictive than low Machs." High Machs do appear to be less emotional than low Machs. High Machs have also been found to be more sensitive to environmental cues insofar as those cues lead to personal gain. However, low Machs have been found to be more sensitive on an interpersonal level, showing more empathy and concern than their high Mach counterparts. Finally, high Machs tend to contribute more to small group discussions and exhibit more leadership than low Machs, though this is tempered by the personality make-up of the group and the degree to which the group task is structured.

LOCUS OF CONTROL

The concept of locus of control of reinforcement was derived from social learning theory. (see Rotter, 1954; and Rotter, Chance, and Phares, 1972 for a fuller explication.) Locus of control is a construct which addresses the power an individual perceives that he/she has in dealing with his/her environment. In order to gain a full understanding of the concept of locus of control it is first necessary to have an understanding of social learning theory. Phares (1976) identifies what he feels are the most important assumptions of social learning theory:
"1) 'The unit of investigation for the study of personality is the interaction of the individual and his meaningful environment.' (Rotter, 1954) To deal accurately with behavior, personal determinants and environmental determinants must be utilized. Traits, needs, and habits alone are not sufficient; situational parameters must be examined...

2) The emphasis of the theory is on learned social behavior. With this social focus, it is contended that unlearned, biological determinants are less important than they would be were the theory dealing with perception or sensation, for example...

3) There is unity to personality. Individuals' experiences—their interactions with their meaningful environment—though varied, are interrelated. The common thread is their personality with all its stable aspects.

4) Social learning theory emphasizes both general and specific determinants of behavior. It rejects the polarities inherent in the exclusive use of one or the other...

5) There is a purposeful quality to human behavior. Behavior may be said to be goal-directed in the sense that people strive to attain or to avoid certain aspects of their environment...

6) Finally, 'the occurrence of a behavior of a person is determined not only by the nature or importance of goals or reinforcements but also by the person's anticipation or expectancy that these goals will occur.' (Rotter, 1954, p.102) Expectancies are regarded by social learning theorists as prime determinants of behavior; reinforcement alone does not explain behavior adequately." (Phares, 1976, pp. 11-13)

As Rotter (1966) notes, the effect of a reinforcement following some behavior is not a simple
"stamping-in" process, but depends upon whether or not a causal relationship is seen between his/her behavior and a particular reward or reinforcement. If an individual perceives that an event is contingent upon his/her own actions, this is termed a belief in internal control. When a reinforcement is perceived by an individual as being, to a greater or lesser degree, due to some cause other than his/her own actions, this is seen as a belief in external control.

Collins (1974) conducted a study that examined the locus of control construct as measured by Rotter's (1966) Internal-External Scale. Collins administered the 23-item forced choice instrument in a Likert-type, agree-disagree format. Four common "threads" were found running through all alternatives. It was found that an individual could score external on the scale because he or she believes a) the world is difficult, b) the world is unjust, c) the world is governed by luck, or d) the world is politically unresponsive. Obviously, an "internal" would tend to believe the reverse of these.

The locus of control construct has received a lot of attention since its inception. It has been linked to a number of other personality constructs. For example, Chandler (1976) discovered that among adults internals exhibited greater self-acceptance and better self-
concepts than externals. Externals were generally less happy with themselves. Similar findings have been found by Hjelle (1975) and Roberts (1971). Gordon (1977) found the same to be true among middle-class white children.

Wallace, Cunningham, and Del Monte (1984) examined changes in the relationship between self-esteem and locus of control. They did a comparison with subjects from an earlier study done by Cunningham and Berberian (1976). In the earlier study it was found that among 8-to 11-year-old male children there was a positive correlation between high self-esteem and internal control. Female children, however, showed the opposite trend. High self-esteem girls tended to score less internally than those with low self-esteem.

The Wallace, et. al., study retested a portion of the same subjects in the 1976 study. Similar results were found among male subjects. High self-esteem was positively related to internal control. Results among the female subjects showed a marked change, however. A positive correlation between high self-esteem and internal control was found among the females.

The authors state that differences in societal expectations for females between 1984 and 1976 may account for the discrepancy in findings. They suggest that females who possessed a high internal orientation
may have been in conflict with societal expectations back then, which may have resulted in a lowering of self-esteem. Perhaps now that achievement among women is becoming more accepted, there is a raising of self-esteem levels as a result.

Locus of control has received attention relative to attitude change. Phares (1965) conducted a study in which he found internal subjects were significantly more successful than externals in changing attitudes of others with regard to maintaining fraternities and sororities on a college campus. Phares found that externally controlled subjects were no more successful in changing attitudes among control subjects (those subject to the attitude change) than those control subjects who merely filled out a questionnaire about the Greek system a second time.

Goodstadt and Hjelle (1973) studied the relationship of locus of control to the forms of influence attempts relative to various levels of position power. They found that externals were much more likely to use negative or coercive power to gain compliance than did internals. Internals relied much more on personal persuasive powers instead. It was posited that internals are much more confident in their abilities to change attitudes than are externals, thus
they were more likely to use this strategy over a coercive mode.

A lot of attention has been given to locus of control relative to the reception of persuasive messages. Ritchie and Phares (1969) investigated the role of communicator status, locus of control, and attitude change. They found that externals changed more in response to a high-prestige source than to a low-prestige source, and more than internals did after receiving messages from a high-prestige source.

The authors drew three conclusions. First, externals are not uniformly susceptible to influence attempts in all situations, (prestige level of a source makes a difference). Second, internals appear more responsive to message content than externals. Third, comparisons with a control group showed that none of the groups involved were particularly resistant to change.

In a study that supported these conclusions, Ryckman, Rodda, and Sherman (1972) tested subject's acceptance of influence relative to prestige level and relevancy of the prestige to the messages those sources were conveying. They found that externals tended to accept the influence of high-prestige sources regardless of message relevance. Internals did not accept influence more from high-prestige sources than from low-prestige
Hjelle and Clouser (1970) conducted a study in which they hypothesized that externally controlled subjects would manifest significantly greater attitude change than internally controlled subjects when exposed to standard communications advocating positions contrary to their pre-established attitudes. Their findings supported this hypothesis. They noted, however, that attitude change would not be expected to occur differentially as a function of I-E control in areas central to one's self concept. They stated that I-E control would become negligible as ego-involving relevance of an issue increases.

Stewart, Kearney, and Plax (1985) conducted a study examining locus of control as a mediator to college students' reactions to teachers' attempts to gain compliance. They hypothesized that a target's perceptions of resistance to a particular power-based compliance-gaining technique used by another person will depend on the target's locus of control orientation. Stewart, et. al., found that locus of control is a significant predictor of student's selective perceptions of teacher behavior alteration techniques (BATs).

Specifically, externals perceived their teachers as engaging in significantly more control attempts in the
classroom than did internally oriented students. Externals and internals also appeared to differ in their perceptions of the particular BAT type employed in the classroom. Externals perceived their teachers as using significantly more reward or prosocial BATs than did internals. However, externals also reported their teachers as using significantly more punishment.

Stewart, et. al., state that a number of possible explanations are available. Regardless of a teacher's actual BAT usage, internals may ignore or distort negative, authority-based appeals for compliance. Externals may be very sensitive to teachers' control and overestimate the frequency with which teachers employ BATs, and internals may underestimate the frequency of BAT usage.

Locus of control has received quite a bit of research attention as it relates to achievement and achievement motivation. This is especially true in relation to student achievement. The Intellectual Achievement Responsibility Questionnaire (IAR), developed by Crandall, Katkovsky, and Crandall (1965) has probably been the most widely used instrument in studying the relationships between locus of control and the level of children's grade attainment. The IAR assesses children's beliefs in their own control of
achievement in intellectual-academic situations. The scale is set up to measure beliefs related to success events (I+) and failure events (I-).

Crandall, et. al., found varying results among children of different grade levels. They found that total I scores for grades 3-5 were positively related to grade achievement. However, I+ scores were found to predict grade achievement for girls in grades 3 and 4, while I- was found to predict achievement for boys in grade 5. Total I scores were found to predict grade cards for both sexes in the upper grade levels.

McGhee and Crandall (1968) found that internals achieved higher grades than externals, though again I- predicted grades better than did I+ for boys. In a study conducted by Chance (1965), IAR scores were found to be related to a number of achievement indexes, such as spelling, reading skills, and arithmetic performance. However, Chance found no differences related to sex. Katz (1967) did not find any substantial relationship between achievement and scores on the IAR. Shaw and Uhl (1971) reported that internality was not related to reading achievement in black children, although there was a relationship between the two among white middle-class and lower-class second graders.
There have been a number of studies looking at older students. Franklin (1963) studied 1000 high school students across the country. He was looking at a number of indices of achievement motivation, including such things as early attempts to investigate colleges, amount of time spent doing homework, etc. Of the 17 indices he employed he found that an internal control correlated positively with 15 of those indices.

Achievement motivation is another area of interest. According to Phares (1976), the relationship between locus of control and achievement motivation has generally been modest, though there are indications that under certain circumstances a relationship does exist. The results have been mixed, however. For example, Mehrabian (1968, 1969) reported a strong relationship between internality and his semi-projective need for achievement measure (n Ach). However, Wolk and DuCette (1971) could not find such a relationship among these variables.

Efran (1963) used a balanced-order controlled procedure in which he studied high school students' tendency to forget or repress failures versus successes. He found that individuals oriented toward internal control were more likely to forget or repress failures. Rotter (1966) suggests that the external has less need
to repress his/her failures since he/she has already accepted external factors as determining success or failure. The internal takes more credit for failure and, therefore, stands a greater chance of losing face or experiencing a threat to his/her ego or self-concept.

Rotter and Mulry (1965) found similar results. They conducted a study that examined locus of control and achievement motivation relative to subjects' beliefs that a task was either ruled by skill or by luck. They found that internals took longer than externals to complete tasks when operating under the assumption that task outcome was skill related. However, when internals believed that the task outcome was governed by luck, they took less time to complete the task than did externals. According to Rotter (1966, p. 22), "The result not only shows the greater involvement of internals under skill conditions but in general suggests that internals tend to value reinforcements for skill much more than chance."

Rotter (1966) offers some insights into why locus of control generally relates to performance but does not relate as consistently to measures of motivation. Though individuals with a high need for achievement tend to have an internal control orientation, the inverse is not always true. An individual may be an internal and care little about achievement, or inversely, such a person may have a high need for achievement but not be high in
Phares (1976) offers two other possibilities to explain the discrepancy between studies that deal with achievement in terms of performance and those that deal with it in terms of motivation. First, there may be a number of internals who have low expectancies for achieving certain tasks. These individuals may verbalize "external" beliefs as a protective device. As a result, the number of externals may be overestimated by the inclusion of internals with low expectancies.

Also, motivational measures of need achievement are not nearly as unidimensional as are grades or subject test scores. In other words, such measures do not separate need value, behaviors, expectancies, or anxiety. "High or low n Ach scores can be attained by so many different routes that it is no wonder locus of control does not consistently relate to such measures." (Phares, 1976, p. 112)

Another important question left unanswered by these studies relates to the direction of the relationship between locus of control and achievement and achievement motivation. Nowicki and Duke (1983) point out that few studies to date have employed either cross-lagged panel correlations or path correlations analyses, which according to them would make clear the direction of the
relationship. In the two studies that did employ these techniques, however, locus of control was found to cause academic achievement rather than the other way around (see Calsyn, 1973; Stipek, 1980).

Although somewhat rare, there have been a few studies examining the locus of control construct in the context of on-going relationships. One variable that has received some amount of attention is the concept of trust. Hochreich (1974, 1975) found that studying trust in conjunction with locus of control provided more successful predictions of certain types of behaviors. Specifically, Hochreich isolated two types of external males based on their scores on a trust scale. External low-trust individuals were found to act in the same manner as internals in achievement situations. They tended, however, to blame any failure on the environment. On the other hand, external high-trust individuals were found to be relatively passive and noncompetitive. These findings were only applicable to males.

Doherty and Ryder (1979) examined the relationship between locus of control, interpersonal trust, and assertive behavior among newlyweds. They found that internal husbands were more assertive than external husbands in the marital conflict situation, and that
external high-trust husbands were least assertive. Also, internal low-trust wives were found to be highly assertive.

Although little research has been done in social interaction situations, the findings are consistent with locus of control theory and prior research findings. It would be expected that an internal husband would be more assertive. The second finding is also predictable. As Doherty and Ryder point out, high-trust external husbands would tend to believe that an interpersonally trustworthy environment controls their lives. Therefore, "these men have little motivation to win or 'make points' in marital disagreements." (p.2219)

Lastly, according to the authors, low-trust internal wives represent a relatively nonnormative stance. They combine qualities of a strong belief in personal control of their lives and a sense of skepticism about other people's intentions. The result is a tendency to relate to their husbands in an assertive, argumentative manner, persistently pushing their viewpoints.

Wheeless, Erickson, and Behrens (1986) examined disclosiveness of persons of American and non-Western cultures relative to locus of control. Although initial
analyses detected generally low-level differences in disclosiveness and locus of control between individuals of the two cultures, separate analyses of internals and externals did show differences. It was discovered that individuals with external loci of control displayed substantially more disclosiveness differences based upon their cultural origins. American externals were found to be less honest, give less depth of information, and provide more positively intended disclosiveness than persons of non-Western culture.

The authors arrived at the following conclusions:

"These results clearly suggest that locus of control is a mediating variable that helps to explain multidimensional disclosiveness differences between people of American and non-Western cultural origins. This mediation process does not indicate merely that persons with an external locus are more disclosive or vice versa. Rather, locus of control appears to mediate differences in cultural origins such that it serves as an explanatory concept to enlighten us as to why some persons are more disclosive than others, considering their different cultural origins. Since persons with external control loci are more governed by external forces and rewards, they appear to be more likely to subscribe to their culture's values, those that give rise to different communication proclivities such as disclosiveness. Persons with internal loci of control appear to reflect meaningfully less influence from their cultural environment. Cultural differences in these communicative predispositions may only apply meaningfully to those who tend toward external loci of control." (p. 44)
Several studies have examined locus of control in relation to group communication behavior. Alderton (1980) examined individual's attributions of responsibility for socially deviant behavior in decision-making discussions. He compared both the degree of ambiguity present in the situation as well as the locus of control of the attributor. Groups of three to five members were established, split into a two-by-two matrix comprising either externals or internals. Each group was put into the role of a university Academic Fairness Committee. A case study was presented to each group involving a students dispute over a course grade. In each case the teacher who gave the original grade was arguing that the student's behavior was deviant and negligent and that the grade should stand. It was the group's job to make the final decision about what grade the student in the case study should receive. Half of the groups involved were given a very unambiguous case in relation to the student's academic ability and effort in the course involved, and the other half were given a very ambiguous case study.

Several findings were discovered. Internals and externals both assigned a severe penalty for a deviant act in the clear situation, but internals assigned a more severe penalty than externals for such an act in an
unclear situation. After group discussion, internals generally assigned higher ratings of personal responsibility and lower ratings of impersonal responsibility, whereas post-discussion externals did just the opposite. Also, internals argued more in favor of personal causality in the clear situation than did externals.

Alderton (1982) conducted another study using these same subjects that examined locus of control-based argumentation as a predictor of group polarization. Specifically, using the same format and case studies Alderton focused on personality as a predispositional factor in terms of the predictiveness of the direction of both persuasive argumentation by group members and, subsequently, decisional shifting.

The study revealed that locus of control of group members affects group polarization in discussions of ambiguous attribution of responsibility information. Internals shifted from prediscussion to post-discussion positions in the direction of increased attribution to personal responsibility. Externals shifted in the direction of increased attribution to impersonal causation. Arguments from both groups reflected the same movement.
Also, internals tended to generate novel bases of reasoning to support personal responsibility while externals shared unique arguments favoring impersonal causation. These results indicate that not only can locus of control orientation affect attitudinal bias as a predispositional predictor of polarization, it can, under certain circumstances, dispose groups to shift decisionally.

The locus of control construct has also been studied in other social situations. Lefcourt has conducted several studies of affiliation and behavior in social interaction. Lefcourt, von Baeyer, Ware, and Cox (1979) developed the Affiliation Locus of Control Scale which assesses the degree to which individuals perceive their social relationships as being established and maintained due to their own efforts as opposed to external factors, (e.g., luck, fate, powerful others, etc.).

Lefcourt, et. al. (1979) found that the measure was predictive of certain social behaviors. For example, self-disclosure was found to be associated with affiliation internality. This was true only of females, however. In another investigation affiliation internals were found to nod their heads more often while listening to their partners than were externals. Individuals that
were paired with internal partners judged those partners as being more intent and accepting listeners than were external partners.

In a recent study by Lefcourt, Martin, Fick, and Saleh (1985), listening behavior was used as an indication of social skill and responsiveness. As was found in the 1979 study, affiliation internals were found to be more attentive listeners than affiliation externals. In a second study, Lefcourt, et. al. (1985) observed several other interaction variables in relation to affiliation locus of control. Such variables as length of conversation, number of questions asked, social skill ratings, etc., were observed and a composite index of social skill was created from them.

Again, affiliation locus of control was significantly related to the composite social skill index. Internality for affiliation was associated with socially skilled behavior. Also, general internality was related to social perceptiveness. As the authors point out, both receptive and expressive acts are necessary if one is to be skilled socially. The results of their study indicate that externals with respect to affiliation are less apt to be socially skillful, and less attentive to and communicative with others.
As the literature suggests, an individual's locus of control orientation can have important psychological and behavioral implications. It appears that those with an internal locus of control tend to have higher self-concepts than externals. Internals also appear to be more successful in changing other's attitudes while being less susceptible to attitude change themselves. Internals tend to be more assertive than externals, and lean toward greater levels of achievement. They are also more likely to feel responsible for their own actions and more likely to assign responsibility to others for their actions. Finally, those with an internal locus of control orientation have been shown to exhibit greater levels of social skill than externals, including better listening habits, and higher levels of attentiveness and perceptiveness.

INTERACTION INVOLVEMENT

The subject of communication competence is one that has been gaining a lot of attention in recent years. As Cegala (1986) points out, although there is a variety of interests among scholars researching different domains of communication competence, there is commonality on a number of important issues. These commonalities include a
basic agreement that competence is a multi-faceted phenomenon, made up of several behavioral and cognitive dimensions. Most researchers also agree that communication competence should be viewed as a performance based concept, though there is little agreement on the exact definition. One possible definition is offered by Wiemann (1977, p.198): "the ability of an interactant to choose among available communicative behaviors in order that he may successfully accomplish his own interpersonal goals during an encounter while maintaining the face and line of his fellow interactants within the constraints of the situation."

One recent development in the attempt to articulate a conceptual and operational definition of one cognitive dimension of communicative competence is the concept of interaction involvement. Since its inception it has been utilized in a number of research studies (Cegala, 1981, 1982a, 1982b, 1984; Cegala, Savage, Brunner & Conrad, 1982; Cegala, Wall, & Rippey, 1986; Villaume, 1984; Villaume and Cegala, 1985). Interaction involvement is thought to be a fundamental dimension of communication competence. Interaction involvement can be defined as "the extent to which an individual partakes in a social environment."
The concept of interaction involvement is grounded in a definition of communication competence, and face-work is an important component of communication competence. For example, in the Wiemann definition stated earlier communication competence included "maintaining the face and line of his fellow interactants within the constraints of the situation." (Wiemann, 1977, p.198) An important aspect of face-work is a moral obligation for one interactant to show consideration for another's face. Such consideration is certainly implied in the Wiemann definition.

Interaction involvement was originally developed, in part, from the works of Erving Goffman, (i.e., Behavior in Public Places and Interaction Ritual). Key concepts of Goffman's are those of line, face, and face-work. These concepts rely on a general dramaturgical approach in which Goffman envisions individuals acting out roles in social interaction. Line refers to an individual's mode of verbal and nonverbal behavior. This mode of behavior is the vehicle in which that individual expresses his/her evaluations of self and other and his/her view of the situation. Face refers to the "positive social value a person effectively claims for
himself by the line others assume he has taken during a particular contact." (Goffman, 1967, p.5) Finally, face-work is the behavior an individual engages in in order to maintain or be consistent with face.

Although an individual's involvement level in interactions may fluctuate from situation to situation, Cegala (1984) argues that individuals have a generally preferred level of involvement. Therefore, interaction involvement may be considered a trait of interpersonal competence. People considered low in involvement would characteristically be psychologically removed from ongoing interactions. They tend to be more preoccupied with other thoughts and are generally more withdrawn or distanced from interactions. High-involved individuals, however, tend to be more sensitive to self and others as social objects, and tend to exhibit more independence and complexity of thought in interactions.

In its initial published article, interaction involvement was treated as a two-dimensional construct. (Cegala, 1981) Derived from Goffman's discussions, Cegala identified two capabilities necessary to achieve effective face-work: attentiveness and perceptiveness. Attentiveness refers to "the extent to which an individual is cognizant of stimuli that comprise the immediate environment." (Cegala et.al., 1982, p.230)
Perceptiveness is linked to attentiveness. It refers to the extent an individual is aware of the interpretations another person(s) may have put on one's acts. This also includes an awareness of how others should perceive one's own behavior.

The Interaction Involvement Scale (IIS) was developed from the conceptualization of perceptiveness and attentiveness with an attempt to measure those characteristics. It is a self-report that consists of 18 items. The items are scored in reference to a Likert-type scale that asks a respondent to identify qualities that are most and least like them. The IIS was administered to several samples totaling 668 subjects. The samples included a majority of undergraduate college students, as well as high school students and nonstudent adults.

The results of a principal components analysis revealed that interaction involvement is likely a three-dimensional construct rather than a two-dimensional one. The three dimensions include Perceptiveness, Other-Oriented Perceptiveness, and Attentiveness. Internal reliabilities for each dimension were at or above the .86 mark, lending support for the conceptual accuracy of the three dimensions.
The scale was later amended, however. Cegala, Savage, Brunner, and Conrad (1982) re-examined the IIS utilizing 1,134 undergraduate students in addition to the 668 subjects included in the Cegala (1981) study. The IIS scores were reanalyzed using a principal components analysis with oblique rotation. The results of the analysis were similar to that of the 1981 study. However, Cegala et. al., opted to relabel Perceptiveness as Responsiveness, and relabel Other-Oriented Perceptiveness as Perceptiveness. Attentiveness remained the same. The previous interpretations of the former two components were called into question because some of the items in the IIS reflected overt communication behaviors while others appeared to reflect perceptiveness. It was felt that the terms Perceptiveness and Responsiveness were more accurate.

Since its development, the IIS has been used in a variety of studies. In the second part of the 1981 study Cegala examined interaction involvement relative to individuals' abilities to achieve interpersonal goals without losing face. Forty-two subjects, (20 females, 22 males) were chosen from an original pool of 258 based upon the extremeness of their IIS score. These subjects were then paired in same sex dyads of one high- and one low-involved person each. Each subject was offered a
dollar reward to obtain some item of personal information from his/her partner in addition to two dollars for participating in the experiment. The topic areas subjects were to find out about included religion, politics, income, and drugs. The pairs then engaged in five minute conversations and were videotaped from behind a one-way mirror.

The interaction involvement level was then analyzed in relation to how successful an individual was at obtaining information. Two groups were identified for analysis: those using direct strategies and those using indirect strategies. The indirect strategy was seen as more subtle and more "competent," while the direct strategy seemed more awkward and out of context. Cegala offers the following examples of each strategy:

Direct "While talking about courses that the subjects are taking, one subject says, 'By the way, what is your religion?'

Indirect "While talking about courses that the subjects are taking, one subject indicates that he or she is currently taking a course in religion and uses this to begin a general discussion about religion. In the context of this discussion the subject either asks the partner what is his or her religion or allows the partner a turn at speaking to further discuss the topic of religion. During this speaking turn, the partner may volunteer the desired information or the subject may continue the discussion by taking another speaking turn,"
and so on until the desired information is obtained in context." (Cegala, 1981, p.118)

Results of the one-way analysis of variance indicated that all three components were significant predictors of success in gaining sensitive information. Results of a discriminant analysis, however, indicated that only perceptiveness served as a significant predictor of success. Cegala argues that the reason the multivariate model showed no significance for the two factors of attentiveness and other-oriented perceptiveness may be because they share variance with the perceptiveness factor, (i.e., a correlation of .66 with other-oriented perceptiveness, and .59 with attentiveness). Based on this, Cegala concludes that the results give added support for the IIS's construct validity.

The IIS scale has also been used in relation to the assessment of prerequisite competencies of students in communication courses. (Cegala, 1982c) Three hundred and seventy college students were administered the IIS as well as a scale to measure extroversion and neuroticism (Eysenck, 1973), one to assess assertiveness (Galasssi, DeLo, Galassi, and Bastein, 1974), and a self-esteem questionnaire (Coopersmith, 1967).
The subjects were grouped in low, medium, and high categories based on their IIS scores. The results were supportive of the prior research done with the IIS. Low-involved persons were found to have lower self-esteem than those higher in involvement. Low-involved individuals were also found to score the lowest on the assertiveness questionnaire. Finally, the scores on the extroversion and neuroticism scale indicated that low-involved persons are less emotionally stable and exhibit more anxiety within social encounters.

Cegala (1982c) also studied the IIS relative to nonverbal behavior. It was found that low-involved individuals (especially males) exhibited less eye contact while both speaking and listening. It was also found that low-involved individuals (especially females) exhibited more body-focused gestures, while high-involved individuals exhibited more object-focused gestures (those gestures directed toward other people and away from one's own body). Cegala states that these findings support the notion that low-involved individuals are more inward or introverted than high-involved individuals.

Cegala, Savage, Brunner, and Conrad (1982) examined the IIS in relation to instruments measuring neuroticism and extroversion (Eysenck & Eysenck, 1968),
self-consciousness (Fenigstein, Scheier, & Buss, 1975), communication apprehension (McCroskey, 1981), and self-reported version (Brunner, 1979) of Wiemann's (1977) interpersonal communication competence scale. This study involved 326 undergraduate students.

It was found that attentiveness was negatively correlated with neuroticism and impulsiveness for males, though impulsiveness did not significantly correlate with responsiveness among females. A positive correlation between responsiveness and sociability was found among both sexes. A negative correlation was found between responsiveness and social anxiety among both males and females. A significant correlation was found between public self-consciousness and perceptiveness among females, but there was not a significant correlation for private self-consciousness. For males the reverse was found. Negative correlations between responsiveness and communication apprehension in interpersonal settings were found among both sexes. Among males, Perceptiveness was found to be negatively correlated with communication apprehension in all contexts.

Cegala, Savage, Brunner, and Conrad (1982) also examined the relationship between interaction involvement and nonverbal communication both while
listening and speaking. The subjects were the same as those used in the Cegala (1981) study. Ten categories of nonverbal behavior were examined: object-focused gesturing, body-focused gesturing and movement, posture changes, shoulder movement, leg movement, foot movement, and eye gaze.

Cegala (1984) studied interaction involvement relative to affective and cognitive dimensions within unstructured and competitive interactions. One hundred and twenty students were involved in the study. Each subject completed the Eysenck Personality Inventory, Form A (1968), Wiemann's (1977) communication competence scale, McCroskey's (1981) PRCA, Bem's (1974) androgeny scale, and the IIS. Subjects were then placed in pairs relative to their scores on the IIS. Three conditions were set up relative to IIS scores, (i.e., H-H, L-L, H-L). The first part of the study involved pairs engaging in a short videotaped conversation. Afterward, each subject filled out a mood scale (Zevon and Tellegen, 1982); and a number of open-ended questions designed to gather information about subjects' recall of various aspects of the conversation. In the second part of the study, subjects were involved in a role-playing negotiation exercise. These role-plays lasted up to 15 minutes and were also videotaped. Also, subjects again
completed the mood scale and open-ended questionnaires.

The results indicated that the three components of the IIS were significantly related to a number of the variables examined. The Positive/Friendly and Self-Confident mood variables and the Proud/Strong mood variable in the negotiation data indicated a positive relationship to the three IIS components. A negative relationship was found with Fear, Self-Anger, Tired, and Anger variables. A relationship between IIS scores and cognitive variables was also established, though the relationship was not particularly strong.

Based on these findings Cegala (1984) concludes that low involved individuals tend to be more withdrawn or distanced from their interactions in part because they tend to be generally anxious and emotionally unstable. The data suggest that such individuals may distance themselves from interaction because of felt fear, lack of self confidence, and anger (both self and other directed). "There is the implication that intense, negative affect during interaction disrupts the low involved person's capacity for intersubjectivity by focusing their attention on internal matters, to the exclusion of external events." (Cegala, 1985, p.18)
Villaume and Cegala (1986) examined the relationship between interaction involvement and coherence in conversation. From an initial group of 433 students enrolled in a basic communication course at Ohio State University, 120 subjects were selected to participate in the study. One half of the included sample scored high on the IIS scale, and the other half were classified as being low-involved. One half of the included subjects were male and the other half female. Subjects were paired in same sex dyads that were composed of two high-involved persons (H-H), two low-involved persons (L-L), or one high- and one low-involved person (H-L). Subjects in the study first completed the IIS before being involved in the experimental situation. Upon arrival to the experimental situation subjects were first verified as being strangers. The subjects were then informed as to the nature of the study, which was to observe how strangers communicated in a "get to know one another" session. No mention was made of interaction involvement or the selection procedures. The study utilized Hasan's (1984) Cohesive Harmony Index to investigate the high- and low-involved subjects' patterns of semantic coherence.

The results indicate that all three dyad types were successful in creating coherent communication. However,
there were distinct differences in how the dyads achieved coherence. There were marked differences in discourse strategy associated with high- and low-involved speakers.

Low interaction involvement was found to be associated with discourse strategies that were heavily reliant on the text of the other speaker. Low-involved people tended to be much more text dependent than high-involved people. The informativity and complexity of their utterances were heavily dependent on the informativity and complexity of their partner's utterances. However, high-involved individuals appeared to communicate more substance, and do so in a more complex, independent fashion.

Cegala, Wall, and Rippey (1986) conducted a study using the interaction involvement scale in relation to communication behavior in small, task-oriented groups. The first study analyzed data from 254 subjects gleaned from a small group communication course at Ohio State University. As part of the course requirements the subjects were involved in 5 to 7 member groups. Each group was responsible for presenting an oral presentation to the class on some issue related to small group communication. In addition, the groups were responsible for writing a term paper on their findings
to be given to the instructor. These two assignments accounted for 50 percent of the students' final grade for the course.

Early in the quarter subjects completed the IIS. Approximately eight weeks into the quarter, each subject completed an assessment of self and other group members' communication behavior throughout the quarter on the SYMLOG scale. The IIS ratings and the SYMLOG ratings were then analyzed in relation to each other. (See section on SYMLOG for a complete description of the scale.)

The results indicated that high-involved people rated themselves and were rated by others as being more dominant in their communication behavior than low-involved people. High-involved individuals also saw themselves as being more friendly than did low-involved group members. Others' ratings of the level of friendliness of high-involved individuals were not found to be significant, though the means were directionally consistent. No significant differences between involvement types were found relative to self-judgments of task orientation, though the structure loadings in the canonical analysis indicated that others perceived high-involved individuals as more task oriented than low-involved individuals.
In summary, the literature indicates that there are important differences in communicative behavior relative to one's level of interaction involvement. High-involved individuals tend to be more subtle and "competent" at obtaining information. High-involved individuals also tend to communicate more substance, and do it in a more complex fashion than do low-involved individuals. Those low in involvement tend to have lower levels of self-esteem, are generally less assertive, and are often more introverted and introspective. They also tend to experience more anxiety in communication settings, making them more distant and withdrawn from their interactions. Finally, in group settings both high- and low-involved individuals perceive those high in involvement as being more assertive and task oriented.

SYMLOG

SYMLOG (Bales and Cohen, 1979) is an acronym which stands for a system of multiple level observation of groups. SYMLOG provides a framework for the conceptualization, representation, and measurement of interaction relative to personality and group dynamic variables. SYMLOG is Bales's latest work which attempts to develop a unified theory. The framework of SYMLOG is built upon three decades of work which includes Bales's (1950, 1970) Interaction Process Analysis (IPA), and Personality and Interpersonal Behavior.
SYMLOG is an attempt to integrate relevant theories of both psychology and sociology as they relate to group dynamics. For example, from the field of psychology Bales draws from the work of such theorists as Freud (1900) in relation to ego, motivation, and personality. He also draws upon the work of Kurt Lewin (1951) in regard to individual perceptual fields. Other psychological theories incorporated include the work of Abelson, et. al. (1968), and Festinger (1957) in relation to cognitive consistency theory. From sociology, the work of such theorists as Mead (1934), Blumer (1968), and Goffman (1959), are drawn upon in relation to symbolic interactionism, self image, and individual definition of situation. Social exchange theory is also incorporated, with the work of such theorists of Blau (1964). Bales's work with Hare and Borgatta (1965) is included with regard to roles, leadership, group structure, and observation and classification.

As the name indicates, SYMLOG provides the ability to analyze group interaction on a number of levels. The behavioral act level deals with both verbal and nonverbal behavior. The content image level deals with images created in reference to self, other, situation, group, society, and fantasy. The retrospective adjective
rating method, (to be discussed later), also allows for
the conceptualization and representation of wished for
and rejected images. These are in reference to an
individual's wish to behave a particular way or a
person's wish not to be a particular way, (reject).
Another level addresses the area of values in relation
to content images. Values can be regarded as either
positive or negative in relation to particular images.

Data can be coded in two ways with the SYMLOG
system; the retrospective rating method and the scoring
method. The adjective rating method is relatively simple
to perform and group members can utilize it without much
background or understanding of Symlog's theoretical or
procedural aspects. Such ratings are filled out by
interactants after a group interaction or session. The
scoring method involves an act-by-act scoring of
interaction, while the retrospective adjective rating
method only deals with the behavioral level. It does not
distinguish between verbal and nonverbal behavior. The
scoring method can code all of the levels mentioned. It
is a complex method and involves considerable training
to use. However, both methods allow for the measurement
of group interaction and both can exhibit the individual
perceptions and biases of the scorer/rater.
The data provided by both methods is interpreted in reference to three theoretically orthogonal dimensions: dominant-submissive, friendly-unfriendly, and instrumentally controlled-emotionally expressive. Dominant behavior (U-Upward) is characterized by an individual who is assertive, and speaks loudly. Such people tend to speak to the whole group rather than specific individuals. Submissive behavior, (D-Downward) is characterized by being very soft spoken and speaking only when asked a question. Nonverbally they are often closed and don't exhibit a lot of direct eye contact.

Instrumentally controlled individuals (F-Forward) are very task oriented and lack emotionalism. They tend to attempt to discover issues and help lead the group to a solution of the task. Nonverbally they are alert and unexpressive. Emotionally expressive individuals (B-Backward) are individuals who tend to be preoccupied with feelings and other items not associated with the task at hand. They tend to be very expressive nonverbally, smiling a lot, laughing, acting sad, etc.

People characterized as friendly (P-Positive) tend to draw a balance between talking and listening and will be very sensitive and thoughtful of others. Nonverbally they are attentive and will turn toward those speaking. Unfriendly individuals (N-Negative) are characterized by
being predictably disagreeable, irritable, and generally negative. Nonverbally they will often appear disinterested and will often turn away from those speaking.

An individual can be gauged as active on one, two, or three dimensions with a score or rating of three or greater on any dimension. Each dimension is articulated by a continua of 18 intervals. An individual can be classified in one of 26 different personality types, (e.g., UPF, DNB, etc.). SYMLOG is a relatively new tool in the study of group behavior, and as such little work has actually been done in the area of communication using this tool. As Bales and Cohen (1983, p.11) themselves point out, "most of the analysis of its theoretical connections with other points of view, as well as much of its empirical grounding, must be left to future publications." To date, a large portion of the work with regard to Symlog has been conducted as an attempt to validate its theoretical and empirical groundings.

Isenberg and Ennis (1981) conducted several studies employing SYMLOG in conjunction with multi-dimensional scaling (MDS). The study involved several on-going groups (i.e., 2 academic self-analytic groups and one group comprised of departmental research staff
in a nonacademic research institution. Subjects in each group were administered both the SYMLOG Adjective Rating Form and a set of ratings consisting of judgments of dissimilarity-similarity between all possible pairs of stimulus persons. These ratings were subject to an INDSCAL analysis (Carroll & Chang, 1970) to locate individuals in the MDS space. Results of the MDS analysis were then compared to the results of the SYMLOG adjective ratings.

The authors found evidence supporting SYMLOG's three dimensions in relation to work done by independent researchers, (e.g., Benjamin, 1974; Forgas, 1978; Wish, et.al., 1976). Isenberg and Ennis made four claims in support of the SYMLOG system:

1) It is based upon a well developed body of theory.
2) It provides more manageable data than that provided by MDS.
3) The three dimensions are directly interpretable.
4) Adjective rating forms can be computed by hand, facilitating immediate feedback to groups. (The authors found intercoder reliabilities between 82 and 91 percent.)

Wish, Andrade, and Goodnow (1980) conducted a study relating SYMLOG to various dimensions of interpersonal
communication. The study employed 50 Columbia University students in two groups of 25 each. Each group was shown several television presentations. After viewing each scene, subjects were asked to rate each interactant in the television series using both the SYMLOG Adjective Rating method, as well as a set of bipolar scales designed to rate individuals' interaction relative to four dimensions: Ascendancy, Evaluation, Task Orientation, and Arousal. Wish et. al., developed this scale from the work of Austin, 1975; Searle, 1969; and Vendler, 1967.

Results of the analysis were very supportive of Bales's theoretical assertions regarding SYMLOG's three dimensions. Ascendancy showed a 93 percent correlation with the U-D dimension. The factor of Task Orientation had a 93 percent correlation with the F-B dimension. Finally, the factor of Evaluation had a 95 percent correlation with the P-N dimension.

Solomon (1981) conducted a study in which Jackson's (1965) Personality Rating Form was used in relation to Symlog. The study involved 67 undergraduate students involved in four different groups. Interaction was observed from behind a one-way mirror and the groups were scored by trained observers using the SYMLOG Scoring Method. In addition, each student completed the
Jackson Personality Rating Form. The results were then analyzed.

Solomon found that peer ratings of Dominance and Exhibitionism were correlated to the U-D dimension; Aggression, Affiliation, and Nurturance had a correlation with the P-N dimension, and Play correlated with the F-B dimension. Based on these results Solomon concludes that "the axes of the Bales space seem to be valid measures of interpersonal dimensions." (p. 23)

Varghese (1982) conducted a study using SYMLOG in relation to Erickson's (1964) Inventory of Psychosocial Development. The Erickson inventory is designed to measure such personality dimensions as trust, intimacy, autonomy, etc. This study involved 181 undergraduates in 12 groups. The subjects were first asked to complete the Erickson inventory. After the groups had interacted subjects were then asked to complete the SYMLOG Adjective Rating form to rate each member in the group.

Varghese found a relationship between one's personality type and the respective Symlog classification. For example, it was found that those individuals who scored high in trust and intimacy were found to be much more positive in the SYMLOG space. Individuals who rated as more self-confident on the
Erickson inventory were found to be in a more upward position in the SYMLOG space than those who were less self-confident. "These results confirm manifest associations between personality and group behavior." (Varghese, 1982, p.146)

Several studies utilizing SYMLOG have been conducted at Ohio State University. The Cegala, Wall, and Rippey, (1986) study has been outlined in the section addressing interaction involvement. Keyton (1985) used Symlog in an on-going task group in relation to the variables of control in conflict, self-confidence, and decision making. The study involved a group of internal medicine residents at a large midwestern teaching hospital. The group was on-going over a period of weeks. Subjects were asked to fill out the SYMLOG Adjective Rating Form five times at intervals of about every six weeks. In the final weeks of the study the subjects were also asked to complete the Organizational Communication Conflict Instrument (Putnam and Wilson, 1982), a self-confidence subtest of the Erwin (1977) Identity Scale, and a measurement instrument designed by Keyton (1985) to judge decision-making behavior.

The author hypothesized that individuals would perceive as more dominant those who: 1) rated higher on
the control factor of the Organizational Communication Conflict Inventory, 2) those who showed evidence of making individual decisions as was scored on a decision-making questionnaire, and 3) those who scored higher on a self-confidence scale. She found moderate to strong support for all three hypotheses. Keyton concluded that this study supplied further evidence that Symlog is able to capture communication variables detected by other instruments.

Given the evidence of the literature cited, SYMLOG appears to be a very useful tool in the study of small group behavior. The studies linking SYMLOG with other measures of interpersonal dimensions are very supportive of SYMLOG's validity. Given this along with the versatility of SYMLOG's potential applications, it should provide an important avenue for future small group research.

SUMMARY

The contents of this review of literature demonstrate that all three constructs have been utilized in a variety of communication situations, including both dyadic and group communication contexts. It becomes apparent that the concepts of Machiavellianism, locus of
control, and interaction involvement have important implications to communication and to each other. For example, the Lefcourt, Martin, Fick, and Saleh (1985) study found that individuals who were rated as having an internal locus of control tended to be more attentive listeners than externals, and were found to be more socially skilled relative to a composite index of social skill. The relevance of these findings to interaction involvement is readily apparent. The degree to which an individual is a good listener and is socially skilled should have a great deal to do with how attentive, perceptive, and responsive he or she is. Therefore, given that the locus of control construct has been associated with such skills, it would appear that it should have some relationship with interaction involvement. The present study will seek to test the following hypothesis:

H1: High-involvement is positively related to internal locus of control.

A number of studies cited also have direct relevance to potential behavior that could be scored within the three dimensional framework of SYMLOG. As pointed out previously, Cegala, Wall, and Rippey (1986)
found that high-involved individuals saw themselves and were seen by others as being more task oriented in a task group situation. It is useful at this stage to determine if these perceptions are consistent with actual scored behavior. In another relevant study, Villahume and Cegala (1986) found that while both high- and low-involved individuals were able to engage in coherent conversation, low-involved individuals tended to be much more dependent on the text of the other person's conversation. This would indicate that high-involved individuals tend to be more dominant. Given this, the present study will test the following hypotheses:

H2: Low-involved individuals will behave more submissively (D-Downward) than high-involved individuals.

H3: High-involved individuals will behave in a more task oriented (F-Forward) fashion than low-involved individuals.

The locus of control construct also has particular relevance to behavior as scored within the SYMLOG framework. There have been a number of studies linking internal locus of control to need for achievement. (e.g., McClelland, et. al., 1953; Crandall, 1963; Schneider, 1968, 1972; Wolk and DuCette, 1973). These
findings would appear to have relevance to an individual's orientation toward tasks. Other researchers utilizing the locus of control construct have discovered that externally controlled individuals tend to use significantly more coercive power in interaction than internally controlled individuals, who rely more on personal persuasive powers. It seems likely that the use of coercive power would appear to be more negative in nature. (Goodstadt and Hjelle, 1973) Based on these research studies, the following hypotheses will be tested:

H4: Individuals with an internal locus of control orientation will be more task oriented (F-Forward) in their behavior.

H5: Individuals with an external locus of control orientation will exhibit more negative behavior.

Finally, studies utilizing the Machiavellian construct have produced findings that have particular relevance to behavior as scored within the SYMLOG dimensions. Christie and Geis (1970) have found that high Machs are more effective manipulators. Given this, it seems reasonable that positive behavior would be more likely to facilitate manipulation than negative behavior, (at least in situations where all participants
are in approximately equal positions of status or power). It would seem that an individual would be more likely to do something for another person if that other person was positive and pleasant than if they were negative and unfriendly. In addition, Christie (1968) and Christie and Geis (1970) found that high Machs lack emotionalism, or stated in SYMLOG terms, they exhibit more instrumentally controlled behavior. Based on these findings, the following hypotheses will be tested:

H6: High Machiavellianism is positively related to positive behavior.

H7: High Machiavellianism is positively related to instrumentally controlled (F-Forward) behavior.
CHAPTER THREE

METHODOLOGY

This chapter outlines the methods used to carry out this research project. First, the subject participants are described as well as the method for their selection. Then the procedures of the study are outlined. Thirdly, the instruments used are described and a rationale for their selection is provided. Fourth, the method of coding interaction is outlined. Finally, the statistical analyses used to test the hypotheses are described.

Subjects

The subjects used in this study consisted of undergraduate students gleaned from the following courses: introductory group communication, introductory public speaking, advanced radio production, advanced television production, and an intermediate telecommunication course. These subjects were chosen both on the basis of access and diversity. It was felt that utilizing students in a variety of courses rather than one specific course would make the population more
diverse and ultimately add to the generalizability of any significant results.

Initially, 198 subjects volunteered for the project. Of this initial pool, 159 actually completed and returned the questionnaires (to be described) given to them. From the pool of 159 subjects, 7 subjects failed to fill out the questionnaires correctly, 4 had already been involved in the group task project (to be discussed), and 11 subjects failed to appear at the laboratory for the experiment. All of these subjects were excluded from the study. This left a pool of 137 subjects that completed the entire project.

Procedure

The subjects were initially approached in their respective classes and introduced to the project. The subjects were given a complete oral and written description (see Appendix A) of the requirements of the project on their part without actually telling them the exact nature of what was to be analyzed. This was done in an effort to protect the study from any biasing effect. As an inducement for participating in the project, subjects were offered extra class credit. In addition, a $50 cash award was also offered. Subjects
that completed the entire project were included in a random drawing at the conclusion of the study. The subject whose name was drawn received the money.

Subjects volunteering for the project were asked to sign up for three possible times in which they could participate in a short laboratory experiment at a later date. They were also asked to sign a consent form to be in the study. (see Appendices B and C) Thirty-five different lab hours were available to choose from. Subjects were informed that they would be assigned to one of the three times they had signed up for. Three times were asked for in an effort to provide flexibility in placing subjects in task groups. After each subject signed up to be part of the project, he or she was given a questionnaire packet to complete and return within several days.

After the questionnaire packets were returned they were scored. Subjects were then placed in task groups based on their personality scores as measured by the questionnaires. An algorithm was developed to place subjects within groups relative to their measured personality type(s) and the times that each subject gave as one that he or she could participate in the experiment. After analyzing the scores on each questionnaire, it was decided subjects would be grouped
on the basis of four different personality types: those that were low-involved and internally controlled, low-involved and externally controlled, high-involved and internally controlled, and high-involved and externally controlled. The groups were not made on the basis of Machiavellian scores because the reliability estimate was lower with this instrument than the other two personality instruments, and the amount of variability among subjects relative to their level of Machiavellianism was also low. (see Table 1 in Chapter 3)

Individuals were placed in a given personality type based on whether they fell above or below the sample median score(s) on that particular instrument(s). For example, an individual that scored above the median for interaction involvement and below the median for locus of control would be considered a high-involved, internally controlled individual. Figure 1 illustrates the frequencies of each personality type:
Interaction Involvement

<table>
<thead>
<tr>
<th>Locus of Control</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>33</td>
<td>39</td>
</tr>
<tr>
<td>External</td>
<td>44</td>
<td>36</td>
</tr>
</tbody>
</table>

Figure 1. Frequencies of personality types.

An effort was made to insure that all four personality types were represented in each group. It was felt that by homogenizing the groups there would be a minimized chance of idiosyncratic group effects compromising the results. Twenty-five groups were selected, though one group had to be cancelled because of insufficient attendance. Of the 24 groups that completed the experiment, 22 had at least one member of each personality type present. Of the other two groups, one was without a low-involved, externally controlled individual, and the other was without a high-involved, externally controlled individual.

When the subjects appeared at the laboratory they were introduced to the group exercise. The exercise
lasted up to 50 minutes. "The Admissions Game" (University Associates, 1979) was chosen as the group task. This task was chosen because the scenario set up in the task is placed in a university setting and involves the judging of students perhaps very much like the subjects themselves. The task involved role playing. It was felt that the subjects would be able to identify well with the role play, and consequently, become actively involved.

Each subject assumed the role of a college faculty member on an admissions committee. The group's task was to rank order 8 prospective graduate students in order of admission preference. Application information was provided for each of the 8 prospective students. (see Appendix D) The subjects were instructed to take 10 to 15 minutes to rank order each candidate individually, then to convene as a group to discuss the rankings. The group was instructed to arrive at a group decision. However, they were urged not to resort to voting on candidate rankings unless there was an absolute deadlock in views. Rather, each group was encouraged to use reason and argument in order to arrive at a decision. This was done in an effort to encourage active interaction. Also, it was felt that this would provide a better opportunity for an individual to exert his/her
influence within the group interaction.

The interaction was video and audio taped from behind a one-way mirror. This was done to conceal the presence of taping equipment. It was felt that such a presence might have an inhibiting effect on the subjects. After the group decision had been reached the subjects were debriefed and thanked for their participation.

**Instruments**

**Interaction Involvement**

In order to assess the extent to which individuals tend to be involved in interpersonal communication settings, the Interaction Involvement Scale (IIS) was employed. The IIS consists of 18 items ranked on a Likert-type scale. (see Appendix E) As mentioned in Chapter 2, this instrument was chosen because it is arguably the most relevant and comprehensive instrument available to assess an individual's personal tendencies relative to involvement in communication settings.

As mentioned previously, the IIS is comprised of three dimensions: Responsiveness, Perceptiveness, and Attentiveness. Although each dimension can be examined
independently, an overall score can be gleaned in an effort to assess one's overall tendencies toward interaction involvement. The scores can range from a low of 18 to a high of 126.

The IIS has been consistently reliable in studies to date. All three dimensions have consistently yielded reliabilities greater than .80, (e.g., Cegala, 1981; Cegala, 1982a; Cegala, 1985). The reliability in this sample yielded an overall coefficient alpha level of .90, with each of the three dimensions yielding reliability levels somewhat lower, (i.e., responsiveness .86; perceptiveness .72; and attentiveness .82).

Locus of Control

Individual's locus of control of reinforcement was assessed by using Rotter's (1966) Locus of Control Instrument. (see Appendix F) The instrument consists of 23 question pairs, using a forced-choice format, plus six filler questions. The scores range from 0, representing an extremely internally oriented individual, to 23, which represents an extremely externally oriented individual. Individuals are asked to select one statement from each pair in which they most agree with. This instrument is the most widely used of those available to measure locus of control. In this
particular study the author was interested in examining individuals' general orientation to locus of control. Given this, the Rotter instrument is better suited than some of the more specific indexes of locus of control.

The Rotter locus of control of reinforcement scale has a well established research track record with consistently acceptable levels of reliability above .75, (e.g., Alderton, 1982; Collins, 1974; Rotter, 1966). The Kuder-Richardson reliability estimate for this sample was .85.

Machiavellianism

The Mach V scale was chosen to measure Machiavellianism. This instrument was chosen because it was felt that the Mach V was the best available to measure this personality characteristic. (see Appendix G) As mentioned in Chapter 2, the Mach IV instrument was amended in an effort to offset a significant negative correlation observed between Mach IV scores and Edward's social desirability scale. (Christie and Geis, 1970) The forced choice Mach V scale was the result. Scores on the Mach V scale range from 40, denoting a very low Mach individual, to 160, denoting a very high Mach.
The Mach V scale has typically exhibited reliabilities in the .60's, somewhat lower than those exhibited by the Mach IV scale, (i.e., .75). However, Robinson and Shaver (1973, p.591) point out that a lower level of reliability might be expected to occur with most sets of items in which social desirability is as strictly controlled as it was in the Mach V. Therefore, even with a somewhat lower level of reliability, it was felt that the Mach V was a better instrument to use. Coefficient alpha for this sample was .45, considerably lower than that reported in many previous studies.

Interaction Coding

SYMLOG

The SYMLOG scoring procedure was used in order to code participant's interaction within the experiment. The SYMLOG system was chosen because it is probably the most comprehensive method available for coding group interaction. Although SYMLOG is relatively new, the research utilizing SYMLOG has been very supportive of its validity (see Chapter 2). Of the research done utilizing the SYMLOG system, most have employed the Adjective Rating Form. However, this study utilized the
SYMLOG interaction coding system. Although little research has been done using this system, what information there is is supportive. Bales and Cohen (1979) report that groups at Harvard University using this system have consistently arrived at inter-coder reliabilities in the .80 and .90 ranges. Similar results have been found in group research at Ohio State University.

Although the SYMLOG system allows for the coding of many levels of interaction, the focus of this study was restricted to the verbal act level. This was done so in the interests of expediency, though the possibilities of later analysis focusing on other levels of interaction are certainly possible.

What constitutes an act, according to Bales, involves a certain degree of subjectivity on the part of the individual coder(s). "The goal of the individual observer is to record events that seem to have important impact on the group process and that the observer thinks deserve notice...SYMLOG does not try to eliminate the particular selectivity and bias of the individual human observer in order to increase inter-observer reliability or agreement. Instead, it attempts to codify and refine the individual perceptions of observers and to reveal their differing sensibilities to interaction events."
(Bales and Cohen, 1979, p. 183)

In this study, however, it was deemed important to eliminate as much potential bias as possible in order to objectively view behavior in the groups. In addition to the author, two individuals well trained in using the SYMLOG scoring system were used to code subject interaction. The two additional scorers were not told the intent of the study in order to reduce any potential bias on their part. In addition, a numerical procedure was used to place individuals in groups. This was done as a way of keeping the author blind to identifying any specific individuals relative to personality types. It was felt that these procedures worked to keep coder bias to a minimum.

The three scorers coded two hours of video and audio taped interaction. Specific acts were clearly identified so that all three coders were scoring the same acts. This was done in an effort to establish precise inter-coder reliability. Reliability levels were .98 for the U-D dimension, .94 for the P-N dimension, and .97 for the P-B dimension. After it was determined that the reliability was adequate, the author coded the 22 remaining groups alone.
Statistical Analysis

All statistical analyses were performed using the SAS (1985) statistical package. All hypotheses were tested by utilizing a Pearson correlation coefficient regression analysis. Additional analysis was conducted utilizing canonical correlation. This was done in an effort to further examine the relationship between the various personality types and interaction behavior.
CHAPTER FOUR

DATA ANALYSIS AND RESULTS

Several categories of results are reported in this chapter. First, a summary of the data resulting from the personality instruments is provided as well as a summary of the results of the interaction coding. Third, a summary of the personality score averages among groups is provided. Fourth, pairwise Pearson correlation coefficients are displayed, and the direct tests of the hypotheses are presented. Finally, the results of a canonical correlation analysis are presented.

Statistical Analysis

Table 1 presents a summary of the data derived from the personality instruments:
TABLE 1

Data Summary of Personality Variables Across All Subjects

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction Involvement</td>
<td>137</td>
<td>89.52</td>
<td>13.31</td>
<td>53-120</td>
</tr>
<tr>
<td>Machiavellianism</td>
<td>137</td>
<td>102.45</td>
<td>9.08</td>
<td>70-124</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>137</td>
<td>10.75</td>
<td>5.67</td>
<td>0-21</td>
</tr>
</tbody>
</table>

Table 2 presents a summary of the data derived from the interaction coding:

TABLE 2

Data Summary of Coded Interaction Across All Subjects

<table>
<thead>
<tr>
<th>SYMLOG Dimension</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-B</td>
<td>137</td>
<td>6.39</td>
<td>5.24</td>
<td>-9-15</td>
</tr>
<tr>
<td>U-D</td>
<td>137</td>
<td>4.43</td>
<td>10.29</td>
<td>-18-18</td>
</tr>
<tr>
<td>P-N</td>
<td>137</td>
<td>1.60</td>
<td>9.61</td>
<td>-18-18</td>
</tr>
</tbody>
</table>
Table 3 displays the group averages relative to each of the personality variables:

### TABLE 3

**Data Summary of Means on Personality Scores Across Groups**

<table>
<thead>
<tr>
<th>Group</th>
<th>IIS</th>
<th>Mach V</th>
<th>LOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90.60</td>
<td>100.40</td>
<td>9.60</td>
</tr>
<tr>
<td>2</td>
<td>83.00</td>
<td>108.00</td>
<td>10.17</td>
</tr>
<tr>
<td>3</td>
<td>95.67</td>
<td>101.83</td>
<td>7.33 *</td>
</tr>
<tr>
<td>4</td>
<td>88.86</td>
<td>104.29</td>
<td>13.29</td>
</tr>
<tr>
<td>5</td>
<td>90.67</td>
<td>100.67</td>
<td>13.71</td>
</tr>
<tr>
<td>6</td>
<td>89.00</td>
<td>104.43</td>
<td>11.43</td>
</tr>
<tr>
<td>7</td>
<td>88.60</td>
<td>109.20</td>
<td>9.00</td>
</tr>
<tr>
<td>8</td>
<td>88.50</td>
<td>102.33</td>
<td>10.50</td>
</tr>
<tr>
<td>9</td>
<td>86.29</td>
<td>101.43</td>
<td>12.57</td>
</tr>
<tr>
<td>10</td>
<td>92.50</td>
<td>104.33</td>
<td>11.00</td>
</tr>
<tr>
<td>11</td>
<td>89.00</td>
<td>100.00</td>
<td>8.25</td>
</tr>
<tr>
<td>12</td>
<td>87.80</td>
<td>103.60</td>
<td>11.00</td>
</tr>
<tr>
<td>13</td>
<td>101.20 *</td>
<td>102.80</td>
<td>11.40</td>
</tr>
<tr>
<td>14</td>
<td>94.17</td>
<td>95.50 *</td>
<td>8.00</td>
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<tr>
<td>15</td>
<td>84.80</td>
<td>94.00 *</td>
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<td>88.57</td>
<td>102.57</td>
<td>9.14</td>
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<td>90.00</td>
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<td>9.67</td>
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<td>18</td>
<td>90.20</td>
<td>101.80</td>
<td>10.00</td>
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<td>19</td>
<td>91.33</td>
<td>100.67</td>
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<td>92.40</td>
<td>110.00</td>
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<td>21</td>
<td>84.25</td>
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<td>13.25</td>
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<td>86.67</td>
<td>100.67</td>
<td>12.16</td>
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<td>23</td>
<td>91.16</td>
<td>100.67</td>
<td>11.33</td>
</tr>
<tr>
<td>24</td>
<td>83.67</td>
<td>103.33</td>
<td>10.50</td>
</tr>
</tbody>
</table>

* Scores that fell beyond +.5 standard deviation from the mean across all subjects.
As Table 3 indicates, of the 72 group personality score means, only four were found to be over + .5 standard deviation from the means across all subjects. The four group means that did fall outside the range did so only slightly. There were no group means that fell beyond one standard deviation of the overall mean. Therefore, it was concluded that the attempt to homogenize the groups with regard to personality types was successful. As a result, any post hoc analysis to determine the extent of group effect on individual behavior was deemed unnecessary.

Table 4 displays the results of the correlation analysis among personality scores and coded interaction:

TABLE 4
Data Summary of Pearson Correlation Coefficients

<table>
<thead>
<tr>
<th>CORRELATE</th>
<th>IIS</th>
<th>MACH V</th>
<th>LOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-B</td>
<td>.019</td>
<td>.182 ***</td>
<td>-.191 ***</td>
</tr>
<tr>
<td>U-D</td>
<td>.285 *</td>
<td>.059</td>
<td>-.300 *</td>
</tr>
<tr>
<td>P-N</td>
<td>.071</td>
<td>.032</td>
<td>-.086</td>
</tr>
<tr>
<td>LOC</td>
<td>-.250 *</td>
<td>.189 ***</td>
<td></td>
</tr>
<tr>
<td>MACH V</td>
<td>-.12</td>
<td></td>
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</tr>
</tbody>
</table>

N=137 * p<.001 ** p<.01 *** p<.05
H1: High-involvement is positively related to internal locus of control.

This prediction was tested by using all 137 subjects and correlating the results of the two instruments. High-involvement significantly correlated with an internal locus of control orientation \((r = -0.22, P < .001)\) in the expected direction. Although the negative sign appears to indicate that the two are negatively correlated, this is misleading. One must remember that the locus of control scale ranges from 0 - 21; 0 being the most internal, 21 being the most external. Therefore, a negative correlation sign indicates internality.

H2: Low-involved individuals will behave more submissively than high-involved individuals.

This prediction was also supported. A significant correlation was found between interaction involvement and SYMLOG's Downward dimension \((r = 0.29, P < .001)\) in the expected direction. Low-involved individuals were found to be more submissive, or stated inversely, high-involved individuals were found to behave in a more dominant manner than their low-involved counterparts.
H3: High-involved individuals will behave in a more task oriented fashion than low-involved individuals.

This prediction failed to be supported. No significant correlation was found between interaction involvement scores and SYMLOG's Forward dimension ($r = .12, p < .82$), though it was directionally correct.

H4: Individuals with an internal locus of control orientation will be more task oriented in their behavior.

Support was found for this prediction. A significant correlation was found between locus of control scores and SYMLOG's Forward dimension ($r = .12, p < .05$) in the expected direction. Although no significant relationship between task orientation and involvement level was found, an individual's locus of control orientation was found to be important.

H5: Individuals with an external locus of control orientation will exhibit more dominant behavior.

This prediction found support. A significant correlation was found between locus of control scores and SYMLOG's Upward dimension ($r = -.30, p < .001$) in the expected direction. These results indicate a
relationship between dominant behavior and one's locus of control orientation. An individual with an internal locus of control orientation was more likely be dominant than an individual with an external locus of control orientation.

H6: High Machiavellianism is positively related to positive behavior.

This prediction failed to find support. A non-significant correlation was found between Machiavellianism and SYMLOG's Positive dimension ($r = .03$, $p < .75$).

H7: High Machiavellianism is positively related to instrumentally controlled behavior.

This prediction was supported. A significant correlation was found between Machiavellianism and SYMLOG's Forward dimension ($r = .18$, $p < .05$) in the expected direction. High Machiavellians were found to exhibit more emotional control than their low Machiavellian counterparts.

There were also some interesting results found not specifically hypothesized. For example, a significant correlation was found between high Machiavellianism and external locus of control ($r = .19$, $p < .05$). This supports
the findings of prior studies, (e.g., see Cook, 1965; Solar and Bruehl, 1971). There were also some results that, though not statistically significant, were interesting because of their direction. For example, there appeared to be a tendency for internally controlled individuals to exhibit more negative behavior than their external counterparts. There also appeared to be a tendency for high Machiavellianism to be lower in interaction involvement, though to reiterate, these tendencies were not statistically significant at a \( p < .05 \) level.

Supplementary Analysis

To further investigate the relationship of the three personality characteristics with behavior in the small groups, a canonical correlation analysis was performed. This was done in an effort to ascertain the amount of variance explained by the two sets of variables (i.e., personality variables and scored interaction behavior), and the degree to which each individual variable contributed to the overall variance. In this analysis, locus of control, interaction involvement, and Machiavellianism formed one set of variables, and the three dimensions of SYMLOG formed the second set. The obtained canonical correlation
coefficient was .49 (Wilks' Lambda .72, df = 9, p < .05). The canonical weights and structure loadings appear in Table 5:

Table 5

Data Summary of Canonical Correlation Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Canonical Weights</th>
<th>Structure Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set 1: Personality Variables</td>
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<td>Interaction Involvement</td>
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<td>Locus of Control</td>
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<td>Machiavellianism</td>
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<td>.14</td>
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<tr>
<td>Set 2: Scored Interaction Behavior</td>
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<tr>
<td>F-B Dimension</td>
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<td>.24</td>
</tr>
<tr>
<td>U-D Dimension</td>
<td>.86</td>
<td>.39</td>
</tr>
<tr>
<td>P-N Dimension</td>
<td>.46</td>
<td>.12</td>
</tr>
</tbody>
</table>

Inspection of the structure loadings indicates that the canonical correlation is most strongly influenced by
the locus of control variable, and by behavior along the U-D dimension. Interaction involvement and behavior along the F-B dimensions added somewhat less to the overall correlation, contributing about equally. Finally, Machiavellianism and behavior along the P-N dimension contributed the least to the overall coefficient.
CHAPTER FIVE

DISCUSSION

The purpose of this study was to examine the relationships between the personality constructs of interaction involvement, locus of control, and Machiavellianism, as well as the relationships between these constructs and individual interaction behavior within small task oriented groups. It was assumed that a number of relationships do exist. This study largely supports this assumption, as six statistically significant relationships were found.

High-involvement was found to be correlated with an internal locus of control orientation. This seems quite consistent with the results of prior research. An internal locus of control has been associated with a number of characteristics that would indicate higher involvement in interpersonal interaction situations, such as attentive listening and greater levels of social skill than exhibited by individuals with an external
locus of control orientation. As Cegala (1985) found, low-involved individuals tend to experience much more emotional anxiety in interaction than their high-involved counterparts. It might well be that low-involved individuals experience more anxiety because they feel less able to control events. It has been found that low-involved individuals in actuality tend not to control interpersonal conversations. Villaume and Cegala's (1985) finding that low-involved individuals were much more likely to relinquish the control of conversation topic to high-involved individuals lends support to this notion.

This leads to the second hypothesis which states that low-involved individuals will behave more submissively than high-involved individuals. This hypothesis was also supported. This is consistent with the self-report findings in the Cegala, Wall, and Rippey (1986) study in which both high- and low-involved individuals perceived low-involved individuals as being more withdrawn and submissive in group interaction. The findings of this study would indicate that individual perceptions accurately reflect actual behavior as it relates to dominance and submissiveness.

The third hypothesis failed to find support. It was not shown that high-involved individuals behave in a
more task oriented fashion than low-involved individuals. This was somewhat surprising and in direct contradiction to the self-report findings in the Cegala, Wall, and Rippey (1986) study. A number of explanations are possible. First, it might be that participants' perceptions of task oriented behavior are not in line with actual behavior. This, however, is not consistent with the finding relative to dominant behavior and perception.

Perhaps a better explanation has to do with the nature of the tasks in question. The Cegala, Wall, and Rippey study involved on-going task groups, whereas this study involved newly formed task groups which met a minimum of 32 minutes and a maximum of 50 minutes. It is possible that given the brevity and nature of the task, there was a strong influence on many of the subjects to behave in a more emotionally controlled and task oriented manner than they would have had they had more time to interact in the group. Also, the instructions given to the subjects in the beginning of each group interaction stipulated that every effort should be made to come to a group decision. Given these influences, a task orientation would be quite understandable.

The numbers seem to support this explanation. Table 2 in Chapter 3 shows that the F-B dimension had the
highest mean of the three dimensions while having the most compressed range and standard deviation. This graphically shows that the sample as a whole tended to be task oriented. It is interesting to note, however, that even though statistically insignificant, the hypothesis was directionally correct. Therefore, in spite of the results of this study it would seem premature to assume that higher levels of involvement are not associated more with task oriented behavior.

Hypothesis 4 was confirmed, however. Individuals with an internal locus of control orientation were found to be more task oriented than those with a more external locus of control orientation. This finding adds support to previous findings that link internal locus of control to a motivation for achievement. (e.g., Franklin, 1963; Mehrabian 1968, 1969; Rotter and Mulry, 1965) It seems reasonable that the two would go hand in hand. In order to successfully achieve a particular task, an individual would need to have a more serious focus of purpose. In most instances a less emotional approach to a task would be much more effective than an emotional one.

It was also found that individuals with an internal locus of control exhibited more dominant behavior than externally control oriented individuals. This seems very consistent with the findings linked to motivation for
achievement, as well as those that link internals to higher levels of actual achievement. (e.g., Crandall, Katkovsky, and Crandall, 1965; McGhee and Crandall 1968; Shaw and Uhl, 1971) If internals do, in fact, tend to have histories of high achievement, it is likely that they attained that history by "taking the bull by the horns," so to speak. It is also likely that their self-confidence level would be high because of their history of achievement. Therefore, with a feeling that they have the power to control their environment, and a history of successful task achievement, it is understandable why internals would be more dominant in task groups.

The hypothesis that stated that individuals with an external locus of control orientation will exhibit more negative behavior failed to find support, nor were the numbers directionally correct. In this sample, individuals with an internal locus of control orientation were somewhat more likely to behave negatively than those with an externally controlled orientation. A number of explanations are possible for these results. It might be that locus of control orientation is not an important predictor of behavior along the positive-negative dimension. Another possibility, however, is that it is an important element depending on the situation. Perhaps in on-going groups
with some history behind them individuals would exhibit a stronger orientation toward positive or negative behavior. Perhaps when externally controlled individuals become familiar with what to expect from a particular group they will feel more free to behave in one fashion or another. It could be that only internally controlled individuals felt comfortable enough to voice any negative feelings. Another possibility is the environment of the group setting itself. The Goodstadt and Hjelle (1973) study which found externally oriented individuals more likely to use negative or coercive forms of behavior did so in a dyadic situation. It might be that what holds true in dyadic situations might not be true for group situations relative to this issue.

The hypothesis linking high Machiavellianism to positive behavior also failed to find support, though the hypothesis was directionally correct. Possible explanations for the failure of confirmation for this hypothesis include those offered for the previous hypothesis. In addition, it might be that the task was not intrinsically rewarding enough for the high Machs for them to actively try to influence the group's decision. It could be that had there been some type of reward given to specific individuals because of their influence over others, the high Machs might have been
more inclined to exert more energy into influencing the others through positive behavior. In this case, the rewards came simply as a result of participating in the experiment. Therefore, there was little external incentive for individuals to try to influence the group.

High Machiavellianism was significantly linked to instrumentally controlled behavior. This is consistent with prior research. (Christie, 1968; Christie and Geis, 1970) These researchers have found a general tendency for high Machs to lack emotionalism. Certainly, no contradictions to this were found in this study. This is accentuated by the fact that the mean score on the Forward SYMLOG dimension was so high. It is likely that had the high Machs been placed in a situation where less pressure existed to be task oriented, there would be a much stronger degree of significance.

In summary, as expected the constructs examined have been shown to have some important linkages to each other as well as to interaction behavior within task groups. Although none of the correlations uncovered were particularly large, they were significant. As the canonical correlation analysis indicates, locus of control orientation is the most important personality construct with regard to explaining the variance in behavior in this study, with interaction involvement
explaining the second greatest amount of variance, and Machiavellianism accounting for the least. The canonical correlation analysis also found that behavior along the dominant-submissive (U-D) dimension to be the most significant with regard to explaining variance. As mentioned, however, this probably has as much or more to do with the experimental situation as it does with the relationship between behavior and the three personality constructs. It seems quite possible that other important differences along the other two behavioral dimensions might occur under different situational conditions.

LIMITATIONS

Although a number of important findings were discovered in this study, there were a number of limitations regarding the interpretation and generalization of the results. A general limitation to this study relates to the fact that an experimental design was used. As Kerlinger (1973) points out, there are strengths and weaknesses to all designs. In this case, a lot of control was afforded to the formation of the task groups. The ability to homogenize the groups with regard to personality types would not have been
possible in a field study, nor would it be likely in a field experiment. However, a major weakness of this design is that the study was conducted in an artificial setting. Therefore, any conclusions must be tempered with this in mind.

Another area of limitation involves the subjects used in this study. The groups involved were newly formed task groups, and the members were, for the most part, not familiar with each other. As such, there is no guarantee that the same results would be found in what Bales and Strodtbeck (1951) would term "full-fledged" on-going groups. It is still useful, however, to compare the results of this study to those studies focusing on more established groups. Such a comparison should help to extend the understanding of the influence of these personality constructs across different situations. Also, there are situations in which groups are newly formed or meet infrequently. Results of this study could apply more directly to those types of situations.

Another limitation stems from the fact that a student population was used. Although students from a number of different courses were used, most of the subjects had a great deal in common with each other including age, the department they were taking courses
in, and the fact they were all college students. Although there is research that indicates that student groups have performed substantially the same as "real life" groups, (e.g., Poole, 1981) this factor is a potential limitation.

The task employed in the study was chosen as one that students could relate to insofar as it involved making judgments about individuals very much like themselves. By all indications, subject involvement was high. However, if compared with a "real-life" situation, the results might not be the same. The outcome of the discussion did not directly affect the subjects, therefore subjects would not have to live with the consequences of their decisions.

The internal reliability of the measures used were quite good, with exception to the Mach V scale. Both the Interaction Involvement Scale and Rotter's Internal-External Locus of Control Scale resulted in reliabilities as high or higher than found in most previous studies. The Mach V reliability proved problematic, however. It rated considerably lower than found in most previous studies. Even though a number of the results supported expectations and prior findings using the Mach V scale, any results relative to this scale must be looked at very hard. The author would be
very hesitant to make any strong conclusions on the basis of a scale which yields such a low reliability.

Inter-rater reliability was found to very good in this study. Although the SYMLOG interaction scoring system is relatively new and little research has been done employing this system, its potential looks very good. Indications from this study support the use of this method as a viable method of research.

THEORETICAL IMPLICATIONS

The aim of this study was to examine the inter-relationships between the three personality constructs and their implications to individual behavior. It is important to note that although the setting of this study was in the small group, the focus of analysis was clearly on the individual. As such, this should not be considered small group research.

Although support was found for a number of expected relationships, in other instances questions were raised. One area of future study should focus on the relationship between interaction involvement and task orientation/emotional control. The results of this study did not coincide with those previously found. It would be useful to examine what types of situations lend
themselves to task oriented behavior on the part of high-involved individuals. It would also be worthwhile to examine the relationship between individual's perceptions about behavior and actual coded behavior. As previously mentioned, the author suspects that in ongoing group situations high-involved individuals would exhibit more task oriented behavior. Further research is needed to bear this out.

It would also be useful at this stage to study these constructs in relation to other specific types of behavior. For example, how does interaction involvement affect the type of behavioral alteration techniques used by individuals? How does locus of control orientation affect the style of conflict resolution an individual will engage in? More work could certainly be done along this line.

As the internal reliability level indicates, more work needs to be done on the Mach V scale. Although many researchers have found consistent findings using the scale, more work needs to be done in an effort to discover exactly what it is measuring. The fact that Machiavellianism is no doubt a multi-dimensional construct probably has a lot to do with the Mach V's low level of reliability. An effort should be made to clearly identify the different elements measured by the
scale and either modify them and/or clearly identify them as sub-parts of the scale. As it stands, although the scale may be predictive it is not at all clear what construct(s) are being linked to these predictions.

Another useful endeavor would be to search for any mediating constructs that might be entering into the relationship between interaction involvement, locus of control, and Machiavellianism. It would be interesting to employ a LISREL path analysis to see if any models could be developed to help explain the relationship between these constructs relative to other mediating constructs. For example, it could well be that the construct of self-esteem has an integral relationship between the three constructs examined in this study.

Finally, the issue of the viability of research on individual differences needs to be addressed. In this study, as is the case with many research efforts focusing on personality traits, the correlations with the behavioral index were not particularly large. This does not mean that this is not an important area of study, however. As was mentioned by Berger (1985) earlier, both individual and situational variables should be taken into account. It is important at this stage to start identifying what types of situations will mask behavior related to individual traits as well as
identify those situations which might allow or even enhance the exhibition of such behavior.

In conclusion, it appears that this study was successful in demonstrating that the personality variables examined have important implications to each other and to communicative behavior. In addition, this study provides added support for the viability of the SYMLOG coding scheme. Although it is not argued that any of these instruments are perfect, or that SYMLOG is without flaw, they have proved useful in furthering our knowledge of the communication process. Further work with these personality constructs and with the SYMLOG system should prove useful in the future.
Consent form HS027 will be used to obtain subjects' written consent to participate in the study. A summary of the directions to be given to subjects is as follows:

Step 1: "Thank you for allowing me a few minutes of your class time. My name is _______ __________•  1  am conducting a study examining group decision making, and am interested in soliciting volunteers in this project. The project will require a total of 90 minutes of your time. You will need to fill out several questionnaires, which should take no longer than 30 minutes to complete. Then, you will be involved in a short group role play situation in which you and the other members of your assigned group will be asked to come to a group decision about a hypothetical case study. This will take no longer than 60 minutes. Your participation in this study is completely voluntary, and should you not wish to participate nothing will be held against you. For those of you who do participate in this study, extra class credit will be given to you. In addition, you will become eligible to win a $50 cash award at the conclusion of the study. Each of your names will be included in a random drawing, and the person whose name is drawn will win the money. The drawing will occur at (time) in room __________•  . Everyone is welcome to be present at the drawing, although you need not be present to win the award.

In order to analyze the interactions in each group, it is necessary to video tape them. However, you should understand that only personnel connected with this research project will view the video tape. They will not be shown in classes or made available to anyone other than authorized personnel.

You should also understand that you may terminate your participation in this study at any time. If so desired we will erase all or part of any video tape of yourself and you may verify that the tape has been erased.

If at a later time you feel that viewing the video tape of yourself during this study will help you understand your communication behavior, you may contact Professor Wall and he will arrange for you to view the tape. He will also be available to discuss the tape with you and to provide any additional information relevant to your participation in the study.

If you are interested in participating in this study please sign your name to the tentative sign-up sheet, along with three possible times in which you could participate in the group decision making exercise. Your instructor will then give you a packet which includes several questionnaires we would like you to complete. I am giving you now, and a consent form which you need to sign in the event that you wish to participate in the study.
Should you decide to participate in the study, this packet will need to be completed and returned to your instructor by the end of the week. Once again, the total time for the project is approximately 90 minutes. Are there any questions?

Step 2: After the questionnaires have been completed and the consent form has been signed, subjects will be assigned to groups based upon the available times indicated by the subjects. A memo will be sent to each instructor outlining the various group meeting times subjects have been assigned. The instructor will then inform the subjects of these times. In addition, a reminder message will be given to each subject the day before they are to be involved in the experiment.

Step 3: Subjects will arrive at the video taping room. They will be seated at a conference table and asked to sign a seating chart to verify who they are, (to facilitate later interaction coding). Once in place and the seating chart has been signed, they will receive the following directions:

"Thank you for coming to the lab on time and your willingness to participate in this study. What you will be doing for the next 40 to 60 minutes involves a bit of role play on your part. You will be assuming the position of a college faculty. Your task is to read a number of case descriptions of individuals wanting to get into graduate school in your department. Each individual's case description is before you. Each of you individually will then make a ranking of the candidates in order of preference. Write down the order of preference on the sheet provided to you. You will be given 10 to 15 minutes to do this.

After each of you have ranked the candidates, you will then need to arrive at a group decision of ranking preference. Keep in mind that only two of the seven candidates described can be admitted to your graduate program. You will be given up to 40 minutes to complete this part of the task. As before, write the group ranking on the sheet provided. Please make every attempt at arriving at a group consensus on the ranking.

Are there any questions at this time? I will leave the room and allow you to begin the task. I will step in at the end of 10 to 15 minutes to let you know when to begin the group discussion, then again when your hour is up in the event that the group has not made a decision of the rankings by that point."
Step 4: At this point the group role play will be completed. The candidate rating forms will be collected from each subject. They will then be told the following: "Do you have any further questions about the study? If you are interested in receiving a summary of what we found please write your name and a permanent address in this book. We will send you a summary sometime during the summer (1986).

Thank you for participating in the study. Please do not discuss the study with anyone, as we would like people to participate without any preconceived ideas about what we are doing."
APPENDIX B

LABORATORY SIGN-UP SHEET
The study will be conducted in the Communication laboratory in room 207, Derby hall during the hours listed below. Please list your name and phone number, your instructor, and three dates and times that you would be able to participate in the study.

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<th>Mon., May 5</th>
<th>Tue., May 6</th>
<th>Wed., May 7</th>
<th>Thur., May 8</th>
<th>Fri., May 9</th>
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<td>4-5 p.m.</td>
<td>4-5 p.m.</td>
</tr>
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</table>

Your Name & Phone #  Instructor  3 Dates & Times You Can Attend
APPENDIX C
CONSENT FORM
CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in (or my child's participation in) research entitled:
"An Investigation of Individual Decision-making Behavior in a Small Group."

Dr. Victor D. Wall, Jr. or his/her authorized representative has
(Principal Investigator)
explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child's) participation. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child). The information obtained from me (my child) will remain confidential unless I specifically agree otherwise by placing my initials here.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ___________ Signed: ___________ (Participant)

Signed: ___________ Signed: ___________ (Principal Investigator or his/her Authorized Representative) (Person Authorized to Consent for Participant - If Required)

Witness: ________________________________

RS-027 (Rev. 12-81) -- To be used only in connection with social and behavioral research.
APPENDIX D

ADMISSIONS COMMITTEE APPLICATION PROFILE SHEETS
Larry Hutch

Larry attended a medium-sized, church-affiliated school in the upper Midwest, majored in psychology and biology, and will receive a B.A. degree this year.

### Educational Record

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<th>Details</th>
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<tr>
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<tr>
<td>total</td>
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<tr>
<td>verbal</td>
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<tr>
<td>quantitative</td>
<td>34 (74 %ile)</td>
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<tr>
<td>Best subject:</td>
<td>biology</td>
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</table>

### Major Activities

- Student productions (producer); theater (publicity manager)

### Work Experience

- Summer work on a farm, in a hospital, and as a student laborer

### Recommendations

- One good; one average

### Personal Data

- Age: 22
- Marital status: single
- U.S. citizen: yes
- Military service: no
- Father's occupation: farmer
- Mother's occupation: roadside produce business
- Hobbies: skiing, canoeing

### Additional Information

- None
Edward Jakes
Ed, a graduate of a medium-sized school in the South that serves predominantly minority cultures, majored in political science and received a B.A. degree two years ago.

Educational Record:
- Cumulative G.P.A.: 3.1
- G.P.A. last two years: 3.0
- Rank in class: 31/437
- GMAT scores:
  - total: 283 (4 %ile)
  - verbal: 14 (7 %ile)
  - quantitative: 13 (2 %ile)
- Best subject: politics

Major Activities:
- Student Government Association (attorney general); various student committees; Political Science Club

Work Experience:
- Full-time work as an insurance salesperson; part-time employment as a sales clerk, restaurant worker, and legislative assistant for the General Assembly of a Southern state

Recommendations:
- Two good

Personal Data:
- Age: 25
- Marital status: single
- U.S. citizen: yes
- Military service: no
- Father's occupation: deceased
- Mother's occupation: teacher of government
- Hobbies: reading

Additional Information:
- None
### ADMISSIONS COMMITTEE APPLICANT PROFILE SHEET VII

**Richard Morris**

Richard, a graduate of a very small school in the South that serves predominantly minority cultures, majored in business administration and received a B.A. degree one year ago.

**Educational Record:**
- Cumulative G.P.A.: 3.3
- G.P.A. last two years: 3.2
- Rank in class: 11/244
- GMAT scores:
  - total 398 (21%ile)
  - verbal 20 (17%ile)
  - quantitative 24 (28%ile)
- Best subjects: business, economics

**Major Activities:**
- Student Government Association (director of financial affairs)
- Class government (president)
- Business Club (president)

**Work Experience:**
- Accountant (full time)
- Management intern (summer)

**Recommendations:** None provided

**Personal Data:**
- Age: 22
- Marital status: married
- U.S. citizen: yes
- Military service: no
- Father’s occupation: auto mechanic
- Mother’s occupation: nurse
- Hobbies: reading, listening to jazz

**Additional Information:** None
Anne Wa-Wen Chek
Anne, a graduate of Cheng-Kung University, Republic of China, with a major in mathematics, received a B.A. degree two years ago.

Educational Record:
- Cumulative G.P.A.: B (approximate)
- G.P.A. last two years: B+ (approximate)
- Rank in class: not available
- GMAT scores:
  - total: 357 (14 %ile)
  - verbal: 12 (5 %ile)
  - quantitative: 27 (45 %ile)
- Best subject: business

Test of English as a Foreign Language (TOEFL):
- 578 (national TOEFL average about 500)

Major Activities:
- Catholic Student Organization; swimming team; basketball team

Work Experience:
- Assistant to professors (part time)

Recommendations:
- Two good

Personal Data:
- Age: 22
- Marital status: single
- U.S. citizen: no
- Military service: no
- Father's occupation: school teacher
- Mother's occupation: homemaker
- Hobbies: reading, travel, camping, sports

Additional Information:
- None
Frank Green
Frank attended a small, Southern, church-affiliated school for two years before transferring to a large metropolitan university in the North. Frank will receive a B.S. degree this year with a major in accounting.

Educational Record:
- Cumulative G.P.A.: 2.2
- G.P.A. last two years: 2.4
- Rank in class: not available
- GMAT scores:
  - total: 486 (53 %ile)
  - verbal: 32 (70 %ile)
  - quantitative: 22 (23 %ile)

Major: Accounting
Activities: Social fraternity (president); Accounting Club (treasurer)
Work Experience: Summer employment at textile plant and as junior auditor
Recommendations: Two excellent; one average

Personal Data:
- Age: 24
- Marital status: single
- U.S. citizen: yes
- Military service: no
- Father's occupation: accountant
- Mother's occupation: legal secretary
- Hobbies: flying, stamp collecting, soccer, reading

Additional Information: None
ADMISSIONS COMMITTEE APPLICANT PROFILE SHEET I

Sam Dameon

Sam is a graduate of a small, private, church-affiliated institution in the South, where he majored in psychology and received a B.S. degree two years ago.

Educational Record:
Cumulative G.P.A.: 2.3
G.P.A. last two years: 2.5
Rank in class: 340/551
GMAT scores:
  total 487 (55 %ile)
  verbal 32 (70 %ile)
  quantitative 24 (30 %ile)
Best subject: psychology

Major Activities:
Social fraternity (social chairman); R.O.T.C.; Interfraternity Council

Work Experience:
First Lieutenant (U.S. Army); summer work as construction laborer, salesperson; part-time employment as laborer, research assistant, sandwich sales business operator

Recommendations: None provided

Personal Data:
Age: 23
Marital status: married
U.S. citizen: yes
Military service: yes
Father's occupation: certified public accountant
Mother's occupation: newspaper editor
Hobbies: fishing, golf, painting

Additional Information: None
ADMISSIONS COMMITTEE APPLICANT PROFILE SHEET VI

Tim Miller
Tim is a graduate of a large, land grant college in the South, where he majored in electrical engineering and received a B.S.E.E. one year ago. He is presently in the Army.

Educational Record:
- Cumulative G.P.A.: 2.3
- G.P.A. last two years: 2.6
- Rank in class: 1542/2117
- GMAT scores:
  - total: 534 (72 %ile)
  - verbal: 31 (66 %ile)
  - quantitative: 33 (70 %ile)
- Best subjects: electronics, physics

Major: R.O.T.C. (adjutant); Student Government Association (senator); Honor Court (associate justice)

Activities:

Work Experience:
Second Lieutenant (U.S. Army); store worker (summer)

Recommendations:
One excellent; one good

Personal Data:
- Age: 22
- Marital status: single
- U.S. citizen: yes
- Military service: yes
- Father's occupation: research chemist
- Mother's occupation: program director for local TV station
- Hobbies: reading; ham radio

Additional Information:
Granted full fellowship by U.S. Army
Jim Lorain

Jim is a graduate of a very small, private, church-affiliated college in the South, where he majored in economics. He will receive a B.A. degree this year.

Educational Record:
- Cumulative G.P.A.: 2.7
- G.P.A. last two years: 3.2
- Rank in class: not available
- GMAT scores:
  - total: 410 (27 %ile)
  - verbal: 23 (30 %ile)
  - quantitative: 22 (23 %ile)
- Best subjects: economics, business

Major Activities:
- Student Government Association (chairman of a committee); intramural sports

Work Experience:
- Summer employment for a construction firm and management intern for a large corporation

Recommendations:
- Two good

Personal Data:
- Age: 22
- Marital status: single
- U.S. citizen: yes
- Military service: no
- Father's occupation: doctor
- Mother's occupation: volunteer work, homemaker
- Hobbies: sports

Additional Information:
- None
APPENDIX E

INTERACTION INVOLVEMENT SCALE
INSTRUCTIONS: This questionnaire is designed to provide information about how people communicate. There are no right or wrong answers to any of the questions. You only need to indicate the extent to which you feel that each questionnaire item describes your own behavior.

In responding to some of the questionnaire items, you might say, "sometimes I do that and sometimes I don't." You should respond to each questionnaire item in a way that best describes your general manner of behavior; that is, how you tend to respond in most situations. If you cannot decide how a particular item applies to you, then mark the "not sure" alternative. However, try to be careful and thoughtful in making all your responses.

1. I am keenly aware of how others perceive me during my conversations.
   (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like like unlike me me much like me

2. My mind wanders during conversations and I often miss parts of what is going on.
   (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like like unlike me me much like me

3. Often in conversations I'm not sure what to say, I can't seem to find the appropriate lines.
   (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like like unlike me me much like me

4. I carefully observe how others respond to me during my conversations.
   (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like like unlike me me much like me

5. Often I will pretend to be listening to someone when in fact I'm thinking about something else.
   (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like like unlike me me much like me

6. Often in conversations I'm not sure what my role is; that is, I'm not sure how I'm expected to relate to others.
   (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like like unlike me me much like me
7. I listen carefully to others during a conversation.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

8. Often I am preoccupied in my conversations and do not pay complete
attention to the others.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

9. Often in conversations I'm not sure what the other is really saying.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

10. Often in conversations I am not sure what others' needs (e.g.,
reassurance, a compliment, etc.) are until it is too late to respond
appropriately.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

11. During conversations I am sensitive to others' subtle or hidden
meanings.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

12. I am very observant during my conversations with others.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

13. In conversations I pay close attention to what others say and do
and try to obtain as much information as I can.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

14. Often I feel sort of 'unplugged' from the social situation of which
I am part; that is, I'm uncertain of my role, others' motives, and
what's happening.
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me

15. In my conversations I really know what's going on; that is, I have
a "handle on the situation."
(1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very
all like like unlike me like me me much like me
16. In my conversations I can accurately perceive others' intentions quite well. (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like me unlike me like me me much me like me

17. Often in conversations I'm not sure how I'm expected to respond. (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like me unlike me like me me much me like me

18. In conversations I am responsive to the meaning of others' behavior in relation to myself and the situation. (1) Not at (2) Not (3) Somewhat (4) Not sure (5) Somewhat (6) Like (7) Very all like me unlike me like me me much me like me
APPENDIX F

ROTTER'S LOCUS OF CONTROL OF REINFORCEMENT SCALE
INSTRUCTIONS: The following questionnaire consists of 29 items of two statements each. Circle the statement in each item that you most agree with. Be sure to complete each of the 29 items.

1. A. Children get into trouble because their parents punish them too much
   B. The trouble with most children nowadays is that their parents are too easy with them.

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

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

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

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

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

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

8. A. Heredity plays the major role in determining one's personality.
   B. It is one's experiences in life which determine what one is like.

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

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

11. A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
    B. Getting a good job depends mainly on being in the right place at the right time.
12. A. The average citizen can have an influence in government decisions.
   B. This world is run by the few people in power, and there is not much the little guy can do about it.

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

14. A. There are certain people who are just no good.
   B. There is some good in everybody.

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

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

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

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

19. A. One should always be willing to admit mistakes.
   B. It is usually best to cover up one's mistakes.

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

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

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

23. A. Sometimes I can't understand how teachers arrive at the grades they give.
   B. There is a direct connection between how hard I study and the grades I get.
24. A. A good leader expects people to decide for themselves what they should do.
   B. A good leader makes it clear to everybody that their jobs are.

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

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

27. A. There is too much emphasis on athletics in high school.
   B. Team sports are an excellent way to build character.

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

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

MACH V SCALE
INSTRUCTIONS: You will find twenty groups of statements listed below. Each group is composed of three statements. Each statements refers to a way of thinking about people or things in general. The statements reflect opinions and not matters of fact—there are no "right" or "wrong" answers, and different people have been found to agree with different statements.

Read each of the three statements in each group. First decide which of the statements is most true or the closest to your own beliefs. Put a plus sign (+) in the space provided before that statement. Then decide which of the remaining two statements is most false or farthest from your own beliefs. Put a minus sign (-) in the space provided before that statement. Leave the last of the three statements unmarked.

Most true = +
Most false = -

Here is an example:

A. It is easy to persuade people but hard to keep them persuaded.
B. Theories that run counter to common sense are a waste of time.
C. It is only common sense to go along with what other people are doing and not be too different.

In this example, statement B would be the one you believe in most strongly and statements A and C would be ones that are not as characteristic of your opinions. Of these two, statement C would be the one you believe in least strongly and the one that is least characteristic of your beliefs.

You will find some of the choices easy to make; others will be quite difficult. Do not fail to make a choice no matter how hard it may be. Remember; mark two statements in each group of three—the one that is the closest to your own beliefs with a + and the one that is the farthest from your beliefs with a -. Do not mark the remaining statement. Do not mark the remaining statement. Be sure to not omit any group of statements.

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

2. A. People are more concerned with the car they drive than with the clothes their spouses wear.
   B. It is very important that imagination and creativity in children be cultivated.
   C. People suffering from incurable diseases should have the choice of being put painlessly to death.
3. A. Never tell anyone the real reason you did something unless it is useful to do so.
   B. The well-being of the individual is the goal that should be worked for before anything else.
   C. Once a truly intelligent person makes up his/her mind about the answer to a problem s/he rarely continues to think about it.

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

5. A. Most people are basically good and kind.
   B. The best criterion for a wife or husband is compatibility--other characteristics are nice but not essential.
   C. Only after you have gotten what you want from life should you concern yourself and the injustices in the world.

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

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

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

9. A. The world would be a much better place to live in if people would let the future take care of itself and concern themselves only with enjoying the present.
   B. It is wise to flatter important people.
   C. Once a decision has been made, it is best to keep changing it as new circumstances arise.
10. **A.** It is a good policy to act as if you are doing the things you do because you have no other choice.
   **B.** The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.
   **C.** Even the most hardened and vicious criminal has a spark of decency somewhere inside.

11. **A.** All in all, it is better to be humble and honest than to be important and dishonest.
   **B.** People who are able and willing to work hard have a good chance of succeeding in whatever they want to do.
   **C.** If a thing does not help us in our daily lives, it is not very important.

12. **A.** People should not be punished for breaking a law that they think is unreasonable.
    **B.** Too many criminals are not punished for their crimes.
    **C.** There is no excuse for lying to someone else.

13. **A.** Generally speaking, people will not work hard unless they are forced to do so.
    **B.** Every person is entitled to a second chance, even after committing a serious mistake.
    **C.** People who cannot make up their minds are not worth bothering about.

14. **A.** A person's first responsibility is to spouse, not to parents.
    **B.** Most people are brave.
    **C.** It is best to pick friends who are intellectually stimulating rather than ones who are comfortable to be around.

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

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

17. **A.** It is possible to be good in all respects.
    **B.** To help oneself is good; to help others is even better.
    **C.** War and threats of war are unchangeable facts of human life.
18.  ____A. Barnum was probably right when he said that there is at least one sucker born every minute.  
   ____B. Life if pretty dull unless one deliberately stirs up some excitement.  
   ____C. Most people would be better off if they controlled their emotions.  

19.  ____A. Sensitivity to the feelings of others is worth more than poise in social situations.  
   ____B. The ideal society is one in which all people know their place and accept it.  
   ____C. It is safest to assume that all people have a vicious streak and that it will come out when the chance arises.  

20.  ____A. People who talk about abstract problems usually do not know what they are talking about.  
   ____B. Anyone who completely trusts anyone else is asking for trouble.  
   ____C. It is essential for the functioning of a democracy that everyone vote.
BIBLIOGRAPHY


