

**THE PREDICTIVE VALUE OF PSYCHOLOGICAL TYPE AND SELF-  
MONITORING ON EMERGENT LEADERSHIP**

by

Maureen C. Walsh

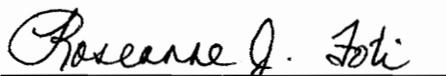
Thesis submitted to the Faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

Industrial/Organizational Psychology

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December, 1992

Blacksburg, Virginia

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(ABSTRACT)

Recent studies (Zaccaro, Foti, and Kenny, 1991; Rueb and Foti, in press) have found a relationship between self-monitoring, a measure of response flexibility, and emergent leadership. The present study re-examined this issue, introducing the hypothesis that psychological type may act as a moderator in the relationship. Subjects completed the Myers-Briggs Type Indicator, the revised Self-Monitoring scale, and four group tasks. After each task, subjects rated each other on perceived leadership. Results indicated that 73% of leadership ratings, and 54% of a rankings measure was stable and due to characteristics of the individual. The relationship between self-monitoring and emergent leadership was not found, thus the interaction between self-monitoring and type with emergent leadership could not be tested. There was a relationship between self-monitoring and agreement in ratings of perceived leadership. Implications of inaccurate ratings are discussed with respect to the emergent leadership/self-monitoring issue.

## Acknowledgments

I would like to extend my gratitude and sincere appreciation to Dr. Roseanne J. Foti. As both my advisor and committee chair, Dr. Foti offered the guidance, support, and encouragement that allowed me to complete this enriching and worthwhile endeavor. I would also like to offer my thanks to the other members of my committee, Dr. Sigrid B. Gustafson, and Dr. Joseph J. Franchina. The contributions that each of the members of my committee has made to my professional development are invaluable. I look forward to their continued friendship, encouragement, and guidance in the future.

I would like to extend a special thanks to Otto Kroeger who took the time to read over original formulations of the hypotheses presented herein. His advice and recommendations regarding Myers-Briggs Type theory are greatly appreciated.

I would also like to thank my research assistants Dayna Loving, Mark Farrell, Heather Brown, Angela Hutton, and Janet Masters. The complex nature of the experimental design required great amounts of time and effort on their part, and this effort is greatly appreciated.

Several members of the psychology department have been tremendously supportive of my efforts in completing this task. I would like to extend my gratitude to Dr. Stuart Greenberg, Gayle Kennedy, Dwayne G. Norris, Amy L. Russell, and Darren Ritzer whose friendship allowed to me continue down a sometimes tortuous road.

In addition, I would like to thank my family for their continuous support of my endeavors. The knowledge that they will always stand behind me, wherever life should take me, gives me a great deal of confidence. I would especially like to thank my mother, Irene C. Walsh, and my father, Gerard P. Walsh. Their love and encouragement gives me the strength to go forth each day with a sense of hope, and purpose. Each in their own way has set an example for me that I will do well to emulate.

Finally, I would like to thank my dear friend W. Edward Beck. I can not thank him enough for the support, love, and patience that he offered to me throughout this project. His constant reassurance, understanding, and belief in my ability to succeed have been a gift without measure.

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## INTRODUCTION

The study of leadership originally attempted to identify a set of traits responsible for the leadership phenomenon (for a review see Stogdill, 1948; Mann, 1959). In the search for a trait-based explanation, one set of researchers sought to compile a list of characteristics that enabled an individual to distinguish himself or herself in such a way that people looked to them for guidance. The characteristics that received the greatest emphasis as potential contributors to leadership were intelligence, dominance, adjustment and masculinity.

Beginning in the late 1940's, research in the area of leadership ceased to focus on trait-based explanations. The abandonment of trait theory in leadership study followed criticism by Stogdill (1948) and Mann (1959), who reported in their respective reviews that the data simply did not support the concept that leadership is a trait phenomenon. Unfortunately, many researchers accepted these conclusions as true. As a result, attempts to demonstrate that leadership stems from stable characteristics of the individual were temporarily suspended (Landy, 1985; Muchinsky, 1991).

A second set of research focused instead on the situational demands of group interaction. These researchers viewed leadership as a process that involved the interaction of the group's needs, and individual members' abilities to satisfy those needs. Thus, leadership qualities were believed to manifest themselves as a result of environmental determinants.

With this in mind, several studies tested for cross-situational consistency in the leadership phenomenon using rotation designs. A rotation design study manipulates either group membership, task requirements, or both. In this way, these studies counteract the effects of a special skill or carry over from a previous group. These studies did not speculate about specific traits, but instead sought to demonstrate that there is consistency in who emerges as a leader across groups and tasks.

While some of these studies were able to demonstrate stability in leader behavior across groups (Bogatta, Bales, & Couch, 1954; Bell & French, 1950), others were able to demonstrate stability as a function of task requirements (Carter & Nixon, 1949). Barnlund (1962), was the first to manipulate both groups and tasks. The data failed to support leader stability across these variables. Barnlund therefore concluded that there did not appear to be a trait-based explanation of leadership, and that leadership is indeed dependent on situational variables.

More recently however, it was suggested that the conclusions drawn in the Stogdill and Mann reviews regarding trait-based explanations of leadership were inaccurate (Lord, De Vader, & Alliger, 1986). Specifically, Lord et al. re-examined the literature reviewed by Mann and concluded that their results had been overgeneralized, resulting in a confounding between leadership *emergence* and leadership *effectiveness*.

Leadership emergence refers to the fact that in a group situation, there generally occurs a phenomenon in which a particular individual emerges as the accepted group leader *without being explicitly assigned the position*. That is, certain individuals are perceived as leaders by other group members. It should be noted that leadership emergence is distinct from leadership effectiveness. Leadership effectiveness focuses on group performance outcomes resulting from leadership efforts. Leadership emergence refers only to group perceptions of leadership independent of group performance.

Lord et al. (1986) found that earlier research was indeed successful in identifying relationships between dispositional variables and leadership if one focused on leader perceptions independent of group performance. Specifically, it was found that 23 of 33 studies returned significant positive correlations between these two constructs. In a similar fashion, 173 of the 196 studies reported in Mann (1959) showed positive correlations.

Further support for the trait-based explanation of leadership was provided by the fact that there was, after all, some cross-situational consistency in the full rotation design

study done earlier by Barnlund (1962). Specifically, Kenny & Zaccaro (1983) reanalyzed the data of the earlier study using the Social Relations Model (Kenny, 1988; Kenny & La Voie, 1984). This model partitions the variance of a individual's rating to account for rater bias, error resulting from the rater/ratee interaction, and a true leadership score.

The *rater bias* term refers to the extent to which an individual tends to see people in a group as a leader. The interaction term is an error term which refers to that variance which stems from the interaction of the rater and the ratee. Finally, the *ratee* effect is the true leadership score and represents the extent to which an individual tends to be seen by others as a leader. In this way, the researchers found that 49% to 82% of leadership variance could be accounted for by stable characteristics within the individual. Thus, regardless of actual performance, certain individuals are *perceived* as leaders across situations.

The idea that leadership is a perception was not new. Specifically, earlier theorists had introduced a perceiver-oriented view of leadership which suggested that leaders' behaviors are unique only insofar as the actors involved have been labeled "leaders" (Calder, 1977; Pfeffer, 1977). Thus, leadership was postulated to be little more than an attribution made by the perceiver in an attempt to explain outcomes for which the "leader" may or may not be directly responsible. Indeed, one common denominator shared by "leaders" is the fact that they are perceived as such. Thus, leadership is "in the eye of the beholder" rather than within the individual themselves.

The focus on leadership perceptions eventually led to the suggestion that leadership is not so much a single quality, as it is a category (Foti, Fraser, & Lord, 1982; Lord, Foti, & De Vader, 1984). This theory builds upon Rosch's theory of category structure (Rosch, 1978). Rosch suggested that, in order to simplify the wide array of stimuli that is encountered by the individual, the environment is segmented into perceptual categories. Nonidentical stimuli that are classified into a given category are subsequently treated as

equivalent for the purposes of information processing. These categories allow the individual to systematically process a potentially overwhelming amount of stimuli, and, perhaps more importantly, to make predictions about future interactions with a given stimulus based on expectations concerning the category (Cantor & Mischel, 1979).

The data have further demonstrated that the probability of membership in a given category increases with the presence of a specific set of attributes. These attributes have been described as being prototypic of category members (Rosch, 1975). A *prototype* is defined as a composite of those characteristics that are most representative of category membership. Interestingly, studies show that once an individual has been categorized, the perceiver tends to attribute qualities associated with the prototype to the individual even in the absence of their behavioral manifestation (Cantor & Mischel, 1979). In other words, these categories are a type of cognitive structure that allow the individual to organize and elaborate on stimuli in the environment.

Extending this theory to the study of leadership, Foti, Fraser, and Lord (1982) found that there is indeed a core set of characteristics that is associated by the perceiver with the leadership phenomenon. For example, characteristics that were considered highly prototypical of a leader were intelligence, honesty, and determination. Thus, there is a leadership category. Moreover, perceivers distinguish among several sub-categories (i.e. political leader) within the broader category of leader and make distinct prototypic attributes associated with each sub-category that significantly differ from each other.

Lord, Foti, and De Vader (1984) also found that these basic level categories are in turn defined by the context in which leadership was observed (i.e. military, religious, business). Thus, if the correct contextual cues are not present, the manifestation of leadership behavior in a given situation may not be recognized as such by observers. In other words, whether or not someone will emerge as a leader is largely determined by the

characteristics of the situation, and the prototypic perceptual category which those characteristics make available in the mind of the observer.

The composite findings of the above studies indicate that (1) there is a relationship between leadership emergence and perceived dispositional characteristics (Lord, De Vader, & Alliger 1986); (2) there is some cross-situational consistency in leadership emergence across group and across tasks (Kenny & Zaccaro, 1983); and (3) there are prototypic categories in the mind of the observer that are, to a certain extent, situationally dependent, and which allow a leader to be classified as such (Foti, Fraser, & Lord, 1982; Lord, Foti, & De Vader, 1984). Thus, certain individuals consistently exhibit behaviors that, under certain conditions, are associated by the perceiver with leadership.

Given this information, it was suggested that one thing that these individuals have in common is the ability to perceive what group members expect of a leader and to adjust their own behavior accordingly in response to those perceived expectations (Kenny & Zaccaro, 1983). This led several researchers to postulate that emergent leaders would score higher in social perceptiveness and behavioral flexibility as measured by Snyder's scale of self-monitoring, a self-report measure of individual differences in this ability.

Self-monitoring is a social psychological concept developed by Snyder (1987) which stems from the tradition of impression management. Snyder described the high self-monitoring individual as one who had a particular concern for social appropriateness, as well as a high sensitivity to social cues. These individuals are especially adept at adjusting their behavior to adapt more easily to changing situational demands.

Several studies have examined the relationship between self-monitoring and emergent leadership (Garland & Beard, 1977; Ellis, 1988; Ellis, Adamson, Dezca, & Cawsay, 1988; Dobbins, Long, Dedrick, & Clemons, 1990; Kent & Moss, 1990; Zaccaro, Foti, & Kenny, 1991; and Rueb & Foti, in press). These studies have all found support

for the hypothesis that high self-monitors are more likely to emerge as leaders than their low self-monitoring counterparts.

Two studies (Zaccaro, Foti, & Kenny, 1991; Foti & Rueb, in press) incorporated a rotation design in order to manipulate the situational requirements of the leader. The results further supported the hypothesis that there is indeed a significant relationship between self-monitoring and leadership emergence. Furthermore, by manipulating the situational requirements, it was demonstrated that high self-monitors do actually change their behavior in response to changing situational demands.

Rueb and Foti (in press) further demonstrated that it is possible to predict leadership emergence even more accurately when multiple predictors are used. Using the Social Relations Model (Kenny, 1988; Kenny & La Voie, 1984), the researcher were able to examine the rater effects in leadership scores. That is, they were able to isolate the extent to which an individual is seen by others as a leader. For example, when the trait measures of dominance and mathematical intelligence were considered in addition to the self-monitoring construct, the amount of variance accounted for from that associated with stable characteristics of the individual being rated (ratee effects) increased significantly. The authors suggest that efforts should be made to further develop the characteristics profile of leadership emergence.

In considering what other characteristics might contribute to leadership emergence, recall that leadership perceptions are guided by the implicit leadership theories of the perceiver. That is, a given set of behaviors will result in the individual being labeled a leader to the extent that the behaviors are congruent with those associated with leadership by the perceiver. In a similar way, the relationship between implicit theories and leadership might be expected to impact on the behaviors themselves. Specifically, in attempting to emulate leadership behaviors, the actor manifests behaviors consistent with their own implicit theories. Given the fact that not all leader-follower relationships are

harmonious, one might conclude that certain discrepancies exist between individuals regarding their implicit leadership theories.

The source of these discrepancies in implicit theories is of legitimate concern. It is here suggested that one such source is cognitive style. That is, systematic differences in information processing result in qualitative differences in experiences, and subsequent category development. Jung noted such differences in the early part of this century and labeled them “preferences” (Hall & Nordby, 1973). His theory of psychological type attempted to describe these differences. More recently, this theory has been quantified so that individual differences in information processing may be more accurately detected and described (Myers & McCaulley, 1989).

In the present study, it is hypothesized that the variance associated with rater effects and leadership emergence can be better accounted for if one considers individual differences in cognitive style of the perceivers. That is, it is suggested that individual differences in information processing may lead to systematic differences in implicit theories of leadership that would modify the relationship between self-monitoring and leadership emergence.

## Literature Review

Since the beginning of the twentieth century ( i.e. Terman, 1904), researchers have been interested in isolating those characteristics that separate leaders from nonleaders . The search for this elusive set of characteristics (i.e. intelligence, dominance, honesty) came to an effective halt following literature reviews by Stogdill (1948) and later by Mann (1959). These reviews reported that numerous studies had failed to find any consistent trait associated with the leadership phenomenon. As a result of these reviews, many researchers abandoned the search for a trait-based explanation of the leadership phenomenon (Siegel & Lane, 1987).

More recently, it has been demonstrated that the conclusions drawn in these reviews were inaccurate. A re-examination of the studies described by Stogdill indicates that there was indeed a “significant trend indicating that leadership and intelligence were associated” (Lord, De Vader, & Alliger, 1986, p. 404). Specifically, it was found that 23 of 33 studies returned significant positive correlations between these two constructs. In a similar fashion, 173 of the 196 studies reported in Mann (1959) showed positive correlations. In addressing these issues, the authors pointed out that the conclusions drawn by Stogdill and Mann have often been misinterpreted insofar as these authors did not directly criticize the trait approach. Instead, they urged researchers to include an analysis of the situational variables involved in leadership.

Perhaps the most important discovery of Lord et al.’s (1986) meta-analysis of Mann’s review pointed out that if one considered leadership emergence independent of subsequent group performance (leadership effectiveness), certain dispositional traits (i.e. intelligence and dominance) were predictive of whether or not someone would be perceived as a leader by group members. This relationship was not significant only if one confused these two concepts. Thus, the authors concluded that “personality traits are associated with

leadership perceptions to a higher degree and more consistently than the popular literature indicates” (p. 407).

In light of these findings, leadership emergence research that had focused its attention on leadership perceptions had new significance. These studies had established that (1) there is a set a characteristics that the perceiver associates with leadership (Foti, Fraser, & Lord, 1982); and (2) the likelihood that a given set of behaviors will be associated with leadership is affected by the context in which the behaviors took place (Lord, Foti, & De Vader, 1984). The question remained as to whether or not certain individuals are consistently perceived as a leader more often than others.

### **Cross-Situational Consistency**

In order to demonstrate that there is indeed some cross-situational consistency in leadership emergence, researchers employed a rotation design in their experiments ( most notably Barnlund, 1962; Bell & French, 1950; Borgatta, Bales, & Couch, 1954; and Carter & Nixon, 1949). These studies typically manipulated group membership, task requirements, or both. The basic assumption of these studies was that “if leadership is a function of personal qualities of the leader, then the same person will emerge as a leader when aspects of the situation are varied” (Kenny & Zaccaro, 1983, p. 679). Thus, should emergent leaders vary with the situational requirements, the trait hypothesis would be rejected.

The earlier attempts at testing the trait hypothesis using the rotation design were successful insofar as they found that leadership was stable across groups when only group membership was varied (Bogatta, Bales, & Couch, 1954; Bell & French, 1950). Furthermore, Carter and Nixon (1949) found partial support for the trait-based explanation of leadership when tasks were manipulated but group consistency remained the same. Barnlund (1962), however, was the first to manipulate both group and task requirements.

Based on his results, it was concluded that leadership is indeed dependent on situational variables.

More recently however, a reanalysis of these same data using modern psychometric tests revealed that some cross-situational consistency does exist if the individual's interpersonal rating is broken down into three different components (Kenny & Zaccaro, 1983). One of these components, called the *ratee* effect, refers to the extent to which a person is seen as a leader by others. Ratee effects are not confounded by a general tendency on the part of the rater to see people as leaders (*rater* effects) nor by an interaction effect based on the relationship of the rater to the ratee.

Analysis of *ratee* effects across situations revealed that 49% to 82% of leadership variance in the Barnlund (1962) study could be accounted for by stable characteristics within the individual. It is important to note that these findings differ qualitatively from previous trait studies. Specifically, they demonstrate that regardless of actual performance, certain individuals are *perceived* as leaders across situations. Unfortunately, nothing was revealed with respect to individual qualities that these people possessed.

The authors did, however, warn against searching for a specific list of leadership traits as had been done in the past. They pointed out that different situations and group needs require different approaches to leadership. Recall that the leadership phenomenon is associated by the perceiver with a core set of characteristics; and that the accessibility of these characteristics is apparently situationally determined (Foti, Fraser & Lord, 1982; Lord, Foti, & De Vader, 1984). Thus, they concluded that "persons who are consistently cast in the leadership role possess the ability to perceive and predict variations in group situations and pattern their own approaches accordingly" (p. 683).

### **Self-Monitoring**

Self-monitoring is an individual difference variable concerned with the ability to monitor and adapt one's own behavior (Snyder, 1974). Stemming from the tradition of

impression management, self-monitoring is particularly concerned with sensitivity to social cues. These cues are used by the individual as guidelines for the adoption of appropriate behavior in a given situation. Thus it is suggested that these characteristics facilitate the individual in manifesting socially desirable behavior.

According to Snyder (1987), an individual who scores high on the self-monitoring construct is able to “monitor and control the images of self they project in social interaction to a great extent” (p. 5). In contrast, the low self-monitoring individual values “congruence between who they are and what they do” (p. 5). Thus, it would be expected there are several behavioral correlates of the self-monitoring construct. Indeed, this is the case.

For example, research has demonstrated that high self-monitors seek out information about others with whom they expect to interact. In one study, Bersheid, Graziano, Monson, and Dermer (1976) allowed subjects to observe someone whom they later expected to date. It was found that high self-monitors were more likely than their low self-monitoring counterparts to remember details, draw inferences regarding personality traits, and to express an affective response to these individuals based only on these limited observations.

Jones and Baumeister (1976) found that high self-monitors are more sensitive to the motivational context in which a behavior takes place. In their study, subjects observed two individuals taking part in a conversation. The subjects were made aware of the fact that one of the individuals had been instructed to either gain the affection of the second individual, or to win his respect. When asked to record personal reactions to the first individual, only high self-monitors were affected by the motivational context. That is, their attraction was related to whether there was an attempt being made to gain affection or to win respect. This relationship did not exist for the low self-monitors.

This attention to detail and motivational analysis of behavior on the part of the high self-monitor was further demonstrated in a study by Berger and Douglas (1981). In this

study, the type of situation in which individuals were allowed to gather information concerning others was manipulated. Given the choice, high self-monitors expressed a clear preference for a situation in which behavior was relatively unconstrained by explicit and formal role requirements. Under such conditions, it was expected that observed behavior was more likely to reflect dispositional attributes.

Given the above findings, it would be expected that the chameleon-like behavior of the high self-monitor is only weakly, if at all related to their actual attitudes. Indeed, research has demonstrated this to be the case (Ross, McFarland, & Fletcher, 1981; Ajzen, Timko, & White, 1982; and Zanna, Olson & Fazio, 1980). Thus, flexibility and adaptability are behavioral characteristics often associated with high self-monitoring.

While extraversion and self-monitoring are conceptually different, there does appear to be some degree of overlap between these two constructs (Snyder, 1987). In this way, while the extravert does not necessarily engage in the impression management techniques employed by the high self-monitor, the high self-monitor may display extraverted behaviors (i.e. sociability and gregariousness) in order to gather information about social cues. Indeed, Lippa (1978) found that high self-monitors are more likely to be perceived by others as extraverts than are their low self-monitoring counterparts. It was found that those high in self-monitoring are more likely to initiate conversation and to talk more frequently during these conversations. It is interesting to note that these behaviors are often associated with leadership (Lord, Foti, & De Vader, 1984).

**Self-monitoring and leadership.** Research that directly examines the relationship between self-monitoring and the leadership phenomenon has been slowly gaining momentum. In 1977, Garland and Beard required subjects to participate in a brainstorming task that required group members to discuss an issue and arrive at a consensus with only minimal feedback regarding group performance. It was found that in groups of females, high self-monitors were more likely to emerge as leaders. This effect

was not true for males groups in the sample, nor was it demonstrated in a condition involving an anagram task.

The relationship between self-monitoring and emergent leadership was later extended to include other kinds of tasks. Whitmore and Klomoski (cited in Snyder, 1987) found that this relationship held in situations involving problem-solving tasks. Foti and Cohen (cited in Zaccaro, Foti, & Kenny, 1991) manipulated task conditions so that either a task-oriented or a considerate leader would be more appropriate. Subjects participating in three-person groups consisting of one each high, moderate, and low self-monitoring individuals, consistently perceived high self-monitors as the emergent leaders.

Ellis (1988) and Ellis, Adamson, Dezca, and Cawsay (1988) found that this relationship held in long-term situations. Specifically, subjects who had worked together for a four-month period (or a six-week period in the case of Ellis et al.) were still more likely to select high self-monitors as their emergent leaders. Interestingly, the relationship was supported for males only. These studies differed from the Garland and Beard (1977) study in that groups consisted of both male and female members. The earlier study had divided subjects into groups along gender lines.

A gender bias was also observed by Dobbins, Long, Dedrick, and Clemons (1990). Subjects were placed into groups such that each group consisted of two males and two females, with one high and one low self-monitor represented from each sex. The groups worked on a salary allocation task (problem-solving in nature). Upon completion of this task the groups were asked to select one group member as their leader. Once again, high self-monitors were more likely than low self-monitors to be selected, as were males over females.

Given that high self-monitors are more acutely aware of their social situations and possess the ability to manipulate their behaviors to match a situation, Kent and Moss (1990) examined the self-perceptions of these individuals in potential leadership situations.

Their findings not only supported the hypothesis that high self-monitors are more likely to be perceived by others as leaders, but also demonstrated that high self-monitors are more likely to perceive themselves as emerging leaders in hypothetical situations.

More recently, it has been pointed out that if leadership is indeed a trait phenomenon (and is therefore relatively stable), and if self-monitoring is indeed the individual difference variable that determines who will emerge as a leader, then it follows that this relationship should hold across tasks and groups. Thus, some researchers have incorporated a rotation design into their examination of emergent leadership (Zaccaro, Foti, & Kenny, 1991; Rueb & Foti, in press). Zaccaro et al. had subjects complete each of four separate tasks in a newly composed group. Thus, each individual within a rotation set interacted once with every other individual as they completed the different tasks. Ratings of leadership perceptions revealed that 40% of the variance in leadership perceptions could be attributed to some characteristic within the individual. Moreover, self-monitoring was found to be moderately correlated ( $r = .22$ ) related to stable leadership perceptions across groups and tasks.

Rueb and Foti (in press) built on these findings by testing for the effects of traits as predictors of leadership emergence, in addition to self-monitoring. In this study, it was found that by using multiple variables to predict leadership emergence, the researchers were able to account for 18 to 33% of the variance in stable leadership scores as opposed to 11 to 16% accounted for by self-monitoring alone. The authors conclude that efforts should be made to further refine the characteristics profile of leadership emergence.

**Self-monitoring and the perceiver.** Recall that leadership emergence refers to the fact that certain individuals are perceived as leaders by other group members without being explicitly assigned the position. In other words, it is the perceptions of group members that determine who is selected as the leader. This view of leadership places an emphasis on the interactions among group members. Thus, it is reasonable to expect that

the self-monitoring levels of the group members themselves may also have an effect on leadership perceptions. Specifically, an individual's self-monitoring abilities may impact the impression formed of someone else's behavior, and affect the degree to which that individual is regarded as a leader. Snyder (1987) suggested that low self-monitors pay little attention to situational cues, and are in fact quite inaccurate in their attempts to diagnose this information.

Indeed, Anderson and Tolson (1989) found that such was the case. A group of nurses responded to questionnaires concerning their supervisors. This information was later analyzed together with information drawn from the nurses' performance evaluations. It was found that there was a significant relationship between leader behaviors and subsequent worker performance only for those nurses who scored high in self-monitoring. Performance of low self-monitors, who rely more on internal cues to guide behavior, was unrelated to leader behaviors of the supervisors.

Anderson and Tolson (1991) found a similar relationship between self-monitoring and leaders' upward influence with regard to members' perceived control as well as perceived work-group support. In this study, high self-monitors were more likely than low self-monitors to be affected by the leader's ability to influence the upper echelons of the organization. Specifically, the degree to which an employee perceived control over their fate in an organization was significantly related to the perceived upward influence of their supervisor *only in the case of high self-monitors*. Similarly, the degree to which an employee perceived support and cooperation among their work-group members was significantly related to their supervisors upward influence for high self-monitors only.

These two studies (Anderson and Tolson, 1989; 1991) are important in that they provide evidence that perceptions of leadership are not only related to the self-monitoring levels of potential leaders, but also to the self-monitoring levels of individual group members. This makes intuitive sense in that someone who is less likely to focus attention

on social and situational cues would be expected to be less likely to notice and respond to the leader behaviors of others.

**Self-monitoring and the leadership process.** This leads to another question regarding the characteristics of emergent leaders. Specifically, while there is evidence that self-monitoring is related to leadership emergence, the correlations are low enough (.18-.33) to suggest that low self-monitors also manage to emerge as leaders. Since low self-monitors do not monitor social cues, and in fact minimize their responsiveness to situationally induced behavioral adaptation, it follows that these individuals may go about the leadership process in a qualitatively different way than do high self-monitors.

Such was the focus of a review of leadership training programs by Anderson (1990). Anderson sorted leadership training programs into two broad categories. The first kind of training program requires leaders to change their own behavior in response to group needs. These programs typically require the trainee to learn to diagnose the groups need across a number of dimensions. Then, based on this diagnosis, the leader is expected to model his behavior accordingly. This behavior change is expected whether or not the behaviors are congruent with the leader's private beliefs. Thus, as Anderson points out, "the requirements of [this kind of training] are a nearly perfect match with the unique abilities of the high self-monitor" (p. 156).

The second type of training focuses on techniques and leadership models whose aim is to help the leader change their organizational environments. These types of programs instruct the leader to analyze their own leadership style, and then to restructure the group in order establish a match. Anderson cites TORI-team building, T groups, or sensitivity training as examples of these types of programs. The basic principle behind these types of programs is that the personality of the leader is stable and unlikely to change significantly. These techniques allow the leader to redesign both upward and downward relationships so that the "leader's intrinsic values and attitudes are displayed with great

honesty and principled self-management”(p. 159). Thus, low self-monitors would be expected to be most comfortable with this second type of leadership training.

The fact that there exist two different types of leadership training programs indicates these two different types of leaders are fairly prevalent in the general population. It is suggested that self-monitoring is the process by which only a portion of emergent leaders arrive at their leadership positions. In addition, there is a second group of individuals for whom this may not be true. This latter group achieves leadership status by way of an entirely different route. Since leadership can be viewed as an interaction between individual characteristics and situational determinants, this interaction is moderated by something other than self-monitoring alone.

### **The Myers-Briggs Type Indicator and Cognitive Style**

The Myers-Briggs Type Indicator (MBTI) is a quantification of Jung’s theory of psychological type. Psychological type can be described as a cognitive style or a way of processing information. In other words, this theory focuses on the mental processes that result in behavior rather than on the behavior itself.

The basic assumption behind Jung’s theory of psychological type is that much of human behavior that appears to be due to chance is not due to chance at all. Instead, it is the logical result of what Jung called “preferences”. The concept of psychological type is categorical in nature. Specifically, a type is a “category into which people with similar but not necessarily identical characteristics are placed” (Hall & Nordby, 1973, p. 96).

The underlying idea behind Jung’s theory is that a major part of human mental activity consists of two different processes; perception and judgment (Myers & Myers, 1980). That is, in every situation, the individual must perceive the situation, and then make some sort of judgment based on these perceptions.

**The perception function.** As has been stated, in any given situation, the human being is first required to perceive the situation. Thus, perception is a sort of data

collection process in which the individual becomes aware of things. Myers-Briggs theory begins by distinguishing between two fundamentally different ways that an individual can collect data; sensing (which is designated with an S) and intuition (which is designated with an N).

Perception through sensing is an awareness of things and individuals as experienced through direct stimulation of the five sense organs. It has as its goal the “fullest possible experience of what is immediate and real” (Myers & McCaulley, 1989, p. 13). The source of stimulation for the sensor can easily be isolated in the environment. Since stimulation of the five senses brings to awareness that which is present and real, it might be expected that sensing types would manifest such characteristics as realism, common sense, practicality, conservatism, preference for the concrete rather than abstract, and pleasure in the moment. Indeed, correlations of sensing as measured with the MBTI and instruments that measure these qualities range from .40 to .67 (Myers & McCaulley, 1989, p. 207).

Intuition, on the other hand, is an indirect form of perception “by way of the unconscious, incorporating ideas or associations that the unconscious tacks on to perceptions coming in from outside” (Myers & Myers, 1980, p. 2). This type of perception focuses on meanings, possibilities, and relationships more through insight than by actual sensory stimulation. The intuitive tends to pay little attention to the actual details in a situation and more on the possibilities that present themselves as a result of those details. One might expect to find someone who relies on intuition to be flexible, complex, artistic, analytical, creative, theoretical, liberal, and even existential. Again, we find correlations between intuition and scales measuring these characteristics to be rather high (.40 to .62) (Myers & McCaulley, 1989, p. 207).

The theory states that these two ways of perceiving compete for the individual’s attention from infancy. As the individual develops, it is soon discovered that one of these

forms of perception is preferred more than the other. In this way, the preferred function tends to develop, while the other form tends to be largely ignored. Thus, the sensor pays close attention to the actualities (concrete properties) around them, while having little interest in the ideas or intuitions (abstractions) that seemingly arise out of nowhere. In contrast, the intuitive is absorbed by intuitions and the possibilities, leaving little energy to attend to the actualities.

It is here emphasized that these two ways of perceiving should be conceptualized as *preferences*. That is, every individual has the capacity to use both methods of perception. The theory only suggests that there is a preference for one over the other. As a result, the preferred function is used more often, is more thoroughly developed, and the individual trusts the results of that preference more than the other. Thus, the sensor may experience a “hunch”, but is less apt to pay attention to it than an intuitive experiencing the same hunch.

**Differences in perception as observed in the lab.** These qualitative differences in perception as described by Jung have been noted independently by other researchers. For example, by Egan and Grimes-Farrow (1982) examined mental representations that are “spontaneously” adopted by subjects when working through reasoning problems. These mental representations were examined using introspective reports. Subjects were asked to solve several reasoning problems, and then described to the researchers how they went about finding solutions. The problems involved spatial representational schemes involving geometric figures.

Results demonstrated that subjects reported one of two basic types of mental representations when solving the problems. The researchers labeled the individuals in these groups “abstract directional thinkers” or “concrete properties thinkers”. It was noted by the researchers that the abstract directional thinkers differed from the other group in that they tended to concentrate on the *relationships* among the geometric figures. For example, one subject reported:

“rather than imagining a rough/smooth figure, I put the figures in a horizontal line, in my mind in the order of left/right rather than rough/smooth” (p. 301).

In contrast, the concrete properties thinkers reported that they focused more on the actual physical properties of the figures rather than on their relationship to one another.

“I also drew a picture, and if something was rough - I would put craters in it in my mind - smooth was just plain white” (p. 301).

Indeed, Egan and Grimes-Farrow had stumbled across the behavioral manifestations associated with intuition and sensing when they spoke of “abstract directional thinkers” and “concrete properties thinkers” respectively. Interestingly, the “abstract directional thinkers” outperformed the “concrete properties thinkers” on the task. The authors therefore concluded that the “abstract directional” orientation was the better, and perhaps more advanced way of thinking. In contrast, Myers-Briggs theory would suggest that the subjects had been required to perform an inherently “intuitive” task. In this sense, it is expected that the intuitive will outperform the sensor. Thus, the results merely suggest a mismatch in type and task, and would be expected to be different if the task had been “sensing” in nature.

**The judgment function.** The second preference that an individual has is judgment. Given that the perception process has collected a certain kind of data, it is now required that some sort of judgment be made or conclusions be drawn based on that data (Myers & Myers, 1980). As with perception, there are two ways of drawing these conclusions; thinking (T) and feeling (F).

In the case of the thinker, conclusions are drawn objectively with the ultimate goal being truth. The personal feelings and wishes of the thinker or anyone else are irrelevant. Thinking is a very logical, objective process, aimed at making impersonal decisions. It relies on principles of cause and effect and tends to be impersonal. In interpersonal

relationships, thinking types tend to exhibit a certain coolness or distance. Personality characteristics that are correlated with thinking (.40 to .57) are dominance, assertiveness, autonomy, achievement, and aggression (Myers & McCaulley, 1989, p. 208).

In contrast, the feeler tends to look for harmony and personal satisfaction in the decisions that are made. Feeling involves using personal, more subjective values as a guide for making decisions. Characteristics exhibited by feelers tend to be concern for others, nurturing, succorance, affiliation and sociability. Correlations with scales measuring these characteristics range from .40 to .55 (Myers & McCaulley, 1989, p. 208).

It is interesting to note that this is the only scale that shows a gender bias in the general population. 66% of all women are feelers, while 66% of all men are thinkers (Kroeger & Thuesen, 1988, p. 20). The corresponding characteristics associated with these two types may be recognized by the reader as being somewhat stereotypical characteristics of women and men respectively.

**An attitude of introversion/extraversion.** In the Myers-Briggs conceptualization of introversion (I) / extraversion (E), the key concept is that of energy source. Specifically, from where does the individual draw on energy. It is this energy source that will determine how and where one performs the perception and judgment functions.

In the case of introversion, the individual finds stimulation in the inner world of ideas and concepts. Conversely, the extravert prefers the outer world of people and things. In this way, we find that “the introvert concentrates perception and judgment upon ideas, while the extravert likes to focus them on the outside environment” (Myers & Myers, 1980, p.7). Personality characteristics that are correlated with introversion are a tendency to be withdrawn, quiet, silent, retiring, while displaying a need for privacy. Correlations with these characteristics range from .40 to .75. (Myers & McCaulley, 1989,

p. 206). In contrast, extraverts tend to be talkative, gregarious, and outgoing with correlations ranging from .44 to .77 (Myers & McCaulley, 1989, p. 176).

**An attitude of judgment/perception.** The final preference that describes an individual's type is the judgment (J) /perception (P) choice. This scale was developed by Briggs and Myers as a result of their own observations. It is described as an attitude that reflects whether the individual prefers his perceiving function or his judgment function in everyday interactions and routines. Although both are used adeptly, one is preferred since it is difficult to perceive and judge at the same time.

Thus, the perceiver tends to find the collection of data and information rewarding. There is no need to come to closure or make a decision about that data. In fact, the perceiver tends to avoid situations that require that a decision be made, since the decision represents the closing off of options. As a result the perceiving type correlates (.40 - .57) are spontaneity, adaptability, complexity, and open-mindedness (Myers & McCaulley, 1989, p. 208).

The judger, in contrast, is driven to closure and is uncomfortable leaving things undecided. The judging individual prefers schedules, plans, and some order. For the judger, the open-ended might be thought of as an abyss and somewhat threatening. In fact, it has been found that "perception tends to be shut off as soon as [the judger has] observed enough to make a decision" (Myers & McCaulley, 1989, p. 14). Behavioral correlates of this type include order/organization, proper/rule-bound attitude, and decisiveness (.40 - .50) (Myers & McCaulley, 1989, p. 208).

**The four preferences.** Taken together, the four preferences potentially answer a lot of questions about any given individual. Do they prefer perception or judgment? When perceiving, are they likely to pay attention to details and facts; or, will the relationships between, and the possibilities behind the facts be attended to? When judging, will emotions and personal values be factored into the decision; or will truth,

justice, and principles have the major role? And finally, is this individual more comfortable in the inner or outer world?

**Temperament.** The concept of temperament was introduced by Kiersey and Bates (1984) as a systematic way of describing “consistency of actions” (p. 28). This approach focuses on only two of the original four scales described above. The first scale that is considered is based on the individual’s perception preference (S-N). While these two letter combinations are not as informative as the full type analysis, they “afford the widest base of accurate behavioral predictions” that lend insight into how people operate (Kroeger & Thuesen, 1988, p. 50).

According to Kiersey, the four temperaments are the basis of the personality and direct behavior. As such, within any given temperament, behavior is uniform enough to allow us to discuss it in fairly general terms. For example, given an intuitive feeling type (NF), one might expect certain behavioral patterns to manifest themselves regardless of whether the individual prefers to extravert or introvert. Thus, in order to organize behavioral trends for the purposes of hypothesis development, these temperament descriptions will be elaborated upon here.

Temperament theory begins with the identification of the individual’s perception preference (S-N). According to Kiersey, since this preference establishes how people gather information in the world, it creates the most basic of human differences. Thus, to identify an individual’s temperament, one begins by determining whether the individual is an intuitive or a sensor.

The first two temperaments that will be discussed are those associated with the intuitive function. Recall that if the individual is an intuitive type (N), information is gathered in an abstract and conceptual way. These data are elaborated upon intuitively, with the actual details often being lost in the process. For this type of individual, the second most important preference is the *way* in which the gathered information is

evaluated and elaborated upon. Thus, we look next to the judgment preference (T-F). In the case of the thinker (NT), this is accomplished in an objective and logical way. The feeler (NF), on the other hand, prefers a more subjective approach to the evaluations of incoming stimuli.

In contrast to these individuals, the final two temperaments consist of sensors (S), who gather data in a concrete, direct, and literal manner. As such, the information is less subject to distortion. Therefore, *how* the evaluation is done is not so important as *what* is actually done with the data. Thus, one refers to the fourth preference scale (J-P). In this way, information gathered by the sensor is either organized and put in order (SJ), or gathered continuously without coming to closure if at all possible (SP)?

As mentioned above, these temperaments are useful in that there are several general behavior patterns that accompany each one. As such they provide a useful framework from which we may predict behavior. Kiersey and Bates (1984) have organized these behavior patterns conceptually and describe them in terms of “quests”.

For the NF, the quest is for *identity*. As such, these individuals continually seek information that can help them understand themselves. These individuals tend to be people oriented, “being articulate, and persuasive,. . . [with] the ability to affirm others freely and easily” (Kroeger & Thuesen, 1988, p. 53).

The intuitive thinker (NT), in contrast, seeks out *competence* and has a tendency to theorize and to intellectualize everything. This temperament is driven by a need to understand the world. The quest to understand “Why?” often manifests itself by presenting a challenge to any authority or source. The tendency to offer a challenge often earns the NT the reputation of being difficult and argumentative. It is the need to understand that is central to the NT’s character in its never-ending search for competence.

The quest of the sensing judger (SJ) has to do with the need to *belong to and uphold meaningful institutions*. These people have an amazing capacity to organize and

put things in order. This includes “people, furniture, schedules, organizations, etc.” (Kroeger & Thuesen, 1988, p. 56). They are characteristically dependable, and make ideal administrators.

The sensing perceiver (SP) is somewhat more flexible than their judging counterparts. Grounded in reality by their literal perception preference, these individuals live in the moment and are capable of dealing with that reality in any number of ways as they are continually *processing* the environment. Often described as troubleshooters, these individuals seek *action* and tend to have a live-for-now nature.

**Temperament and cognitive functioning.** As was stated above, the behaviors associated with the temperaments are uniform enough across types to be useful for generating hypotheses. In the realm of cognitive research, it has been demonstrated that the four temperaments differ even in the extent to which they are subject to well established cognitive biases. Hicks (1985) examined the relationship between temperament and the fundamental attribution error. In this study, it was found that intuitive thinkers (NT) were the least likely of the temperaments to incorrectly assign behaviors to dispositional characteristics. In fact, this temperament appeared to avoid the attribution error. In contrast, the intuitive feeler (NF) made the largest attributional error, followed closely by the two sensing temperaments. Interestingly, this study found no relationship between self-monitoring and the fundamental attribution error.

Theoretically, these results are not surprising from the Myers-Briggs standpoint. Intuitive types in general are the most likely to look for the relationships among environmental stimuli. The NT does this in a logical and analytical manner. Indeed, it has been found that the scientific mind set utilized by the NT increases the use of implicit and explicit base-rate information. In contrast, the NF individual analyzes the relationships among environmental stimuli in a personal way and approaches life with a humanistic interpersonal orientation. Thus, these individuals have a natural tendency to personalize

information resulting in a large rate of error in attribution. Sensing types would simply be expected to “give insufficient weight to the constraints experienced by the imagined essay writer because their perceptual orientation does not foster participation in the situation of another who is not immediately present” (p. 439). Thus, we see that the temperaments do indeed differ at the cognitive level in a predictable fashion.

**The MBTI and leadership.** By its very nature, as a measure of process over product, the MBTI would seem to lend itself quite easily to the developing study of leadership. While the situation itself is taken into consideration in any behavioral description of a Myers-Briggs type, it is the individual’s cognitive style that leads to a certain amount of cross-situational consistency.

It is not surprising then that occupational choice has been suggested to be a matter of type preferences (Myers & McCaulley, 1989). While it is not suggested that there is a perfect match between any occupation in particular and psychological type, the interests that an individual has are expected to be related to type. Thus, “in theory, occupations should attract particular types, and similar occupations should have similar type distributions” (p. 77). It is therefore expected that an occupation will be dominated by particular type.

Given that there is a relationship between type and choice of occupation, as well as success in performing a given task, we would expect to find certain types dominating in any management population. In this way, specific qualities that are related to leadership behaviors might be isolated by studying the types whose tendency is to rise to leadership positions.

An examination of the type distributions in a population of approximately 13,000 managers and entry level personnel revealed that there is indeed a relationship between type and managerial positions (reported in Kroeger & Thuesen, 1992). For example, as one moves from entry-level positions to middle managers, “feelers and perceivers [begin]

to disappear, either staying at the bottom or dropping out and opting for other vocations” (Kroeger & Thuesen, 1992, p. 394). Indeed, the percentage of thinkers (T) increases from 58% in the entry-level pool to just over 86% in the middle management pool. This number increases to 93% in senior managers and again to 95% at the executive level (pp. 391-396). A preference for judging (J) also increases as one goes up the corporate ladder reaching a high of 87% at the executive level. Sensors seem to thrive across the organizational hierarchy representing approximately 78% at the entry level. It is interesting that this percentage drops to 66% at the executive level - their approximate representation in the general population. These data are further supported by Smith and Haar (1990). An examination of a sample of project managers in the People’s Republic of China revealed that subjects tended to be Sensing, Thinking, Judging types.

From these numbers, it would appear that the characteristics associated with STJ are particularly suited for these managerial positions, in that it is this type that is most likely to be promoted to these positions. In the workplace the sensor (S) likes to concentrate on what they are doing, is generally unconcerned about what’s next, prefers results that are tangible, and would rather work with facts and figures rather than ideas and theories. The thinker (T) rarely shows emotion, likes analysis and putting things in order, makes decisions impersonally, and is likely to be firm-minded. Judgers (J) work best when they can follow a plan, like things settled and finished, and make decisions quickly.

The sensing judger (SJ - someone who possesses both of these preferences) likes an established way of doing things, is patient with routine details, seldom makes errors of fact, and works steadily with a realistic idea of how long a task will take (Kroeger & Thuesen 1988, 1992). These behavioral patterns fit neatly into the generally accepted definition of management which is “the process of getting work done through others by . . . planning, organizing, implementing, coordinating, communicating, controlling, and evaluating” (Barr & Barr, 1989, p. 7).

Attention is also directed to the drop in the percentage of sensors at higher levels of management. This drop is interesting in that it is accompanied by a corresponding increase in intuitives. Indeed, their representation goes from 22% at entry level to almost 35% at the executive level. In a series of studies conducted on 2,000 U.S. managers in both the private and public sectors, Agor (1985; 1986) found that there was an increasing trend towards intuitives at higher levels of management. Subjects who scored highest on intuition claimed that their intuitive skills best served them when they were operating under higher levels of uncertainty, in situations where there was little precedent, when the variables involved in a decision had little scientific predictability, when facts and time are limited, and when several plausible alternative solutions exist. Indeed, Myers and McCaulley (1989) predicted that intuitives in the workplace tend to like solving new problems, dislike doing the same thing repeatedly, work in bursts of energy, and are patient with complicated situations while disliking routine details.

**Type and the leadership experience.** Given that there are differential type representations among leaders, attention is directed to the actual leadership styles and behaviors that accompany these types. In particular, do different types actually go about their leadership responsibilities in behaviorally distinct ways? Research has demonstrated that this is indeed the case.

For example, one issue that permeates studies of leadership and management style deals with organizational conflict and how it is handled. It has been found that style of conflict-handling is strongly related to psychological type (Mills, Robey, & Smith, 1985). Specifically, it was found that judging types (J) preferred the compromise mode of conflict handling as described by Thomas. The compromise mode is described as being a point intermediate between avoidance and collaboration. Furthermore, thinking types (T) were more assertive, distributive, and competitive in their conflict-handling, whereas feeling types (F) tended to be more cooperative and accommodating. Thus, thinking judgers (TJ)

tended to compromise in an assertive, distributive way focusing on the issues at hand. In contrast, feeling judges compromised in a cooperative and accommodating way, focusing more on the people involved.

In addition, the MBTI has been used in studies addressing individual differences in susceptibility to burnout at the management level. Burnout can be described as exhaustion due to excessive stress, and can be a particular problem at the managerial level. In approaching this problem, Garden (1989) examined that fact that different situations affect managers in different ways. For example, what may create stress and burnout for one manager may have no effect on another. The data revealed that there is indeed a qualitative difference related to the thinking/feeling dimension of the MBTI. Specifically, managers with a preference for feeling experience burnout as a result of emotional demands and a lack of caring for others. In contrast, mental demands and lower ambitiousness led to psychological burnout in thinking types.

In summary, the differential type distributions in managerial populations indicate that there are indeed certain types that are better suited to these positions of leadership than are others. Furthermore, it would seem that the leadership requirements at different organizational levels change to a certain degree insofar as the distributions of types shift. Finally, research supports the idea that different types do indeed experience leadership in qualitatively different ways. Thus, it is reasonable to expect that different types would emerge as leaders in qualitatively different ways. In other words, different types would go about manifesting leadership in what might be considered a “type-appropriate” way.

### **Self-Monitoring and Psychological Type**

Given the relationship between psychological type, as measured by the MBTI, and leadership positions in organizations, it follows that some relationship should exist between self-monitoring and psychological type since self-monitoring has also been linked to leadership. Indeed, such is the case. A study that correlated the Self-Monitoring scale

and the MBTI found that self-monitoring was correlated with extraversion ( $r = .41$ ) and judgment ( $r = .49$ ) (Mill, 1984).

Behaviorally, this makes sense. In the case of the judgment correlation, it has been postulated that high self-monitors “prefer to be in predictable situations and with people whose actions reflect their true attitudes, since it is in these environments that they can better plan their behavior according to situational demands” (p. 383). Individuals who prefer the judgment orientation prefer the structured and ordered. In the case of the high correlation with extraversion, it would be theoretically expected that high self-monitors, being acutely aware of situational demands would seek their stimulation in the outer world of things and actions.

An interesting point regarding the relationship between the self-monitoring scale and the MBTI is that the relationships between the self-monitoring scale and either the N/S scale or the T/F scale were not significant. That is, while self-monitoring has been used as an effective predictor of emergent leadership, it is unrelated to those scales of the MBTI that significantly differentiate leaders from nonleaders in large organizations.

In this study, it is suggested that the scales that are unrelated to the self-monitoring construct itself may lend some insight to the relationship between self-monitoring and leadership. As suggested above, it is possible that only a certain portion of the population uses self-monitoring as a tool for achieving leadership status. Given the differential cognitive processes of the various Myers-Briggs temperaments, and the corresponding differences in leadership experiences, it is proposed that the portion of the population that uses self-monitoring to arrive at leadership positions can be identified by their Myers-Briggs type preferences.

### **Hypotheses and Summary**

In summary, the above research indicates that there is a relationship between self-monitoring and leadership emergence. Specifically, high self-monitors are more likely

than their low self-monitoring counterparts to be perceived as leaders in any given group. This relationship is stable even across groups and tasks in a rotation design experiment (Zaccaro, Foti & Kenny 1991; and Rueb & Foti, in press).

In addition, it has been demonstrated that cognitive styles, as measured by the MBTI, are differentially represented among leadership populations (Kroeger & Thuesen, 1992; "Center for Applications", 1985). Furthermore, it has been found that individuals of different cognitive styles actually experience leadership in qualitatively different ways (Mills, Robey, & Smith, 1985; Garden, 1989).

Mill (1984) demonstrated that, while self-monitoring is related to the introversion/extraversion and perceiving/judging attitude scales of the MBTI, it is not related to the perception or judgment functions. Interestingly, type distributions in leader populations have shown that there is a relationship between these functions and which individuals ascend the corporate ladder. Thus, it would seem that the relationship between self-monitoring and emergent leadership may not be as straightforward as previously thought. It is hypothesized that self-monitoring may be the process by which only a portion of the population achieves leadership status.

Based on these facts, the present study replicated the study done by Zaccaro, Foti, and Kenny (1991) with the addition of the Myers-Briggs type theory as a predictor variable. In this way, the present author believes that the relationship between self-monitoring and leadership can be shown to be mediated by cognitive style.

Specifically, this study hypothesizes that:

- 1.) Leadership will be stable across the four task situations. As was demonstrated in the earlier study by Zaccaro et al. (1991), it was expected that perceptions of leadership behavior would be stable, such that the same individuals would consistently receive higher leadership ratings independent of task, or group membership.

2.) Self-monitoring will predict leadership emergence only for certain temperament types. Specifically, given the quest of the NF for identity and their people-oriented approach, and the SJ need to belong to meaningful institutions, it is predicted that these temperament types will use self-monitoring as the preferred path to leadership. In contrast, when NT or SP types arrive at these positions, it will be done independent of self-monitoring levels. Thus, the relationship between emergent leadership and self-monitoring will be stronger for NF and SJ leaders, than for NT and SP leaders.

3.) Self-monitoring will moderate perceptual agreement in leadership ratings. Recall that low self-monitors do not monitor social cues to the extent that high self-monitors do. Thus, the final hypothesis suggests that the leadership ratings will be influenced by the self-monitoring levels of the rater. Specifically, the correlation between overall adjusted leadership scores for group members, and an individual's raw score ratings of those members will be examined. It is expected that leadership perceptions for raters who are high self-monitors will be related to overall group perceptions, while perceptions of for raters who are low self-monitors will not be.

## METHODS

### Subjects

108 undergraduate volunteers enrolled in the introductory psychology course at VPI & SU participated as subjects. These 108 subjects formed 12 groups of 9 subjects each (rotations). Five rotations, or 45 subjects were female. Seven rotations, or 63 subjects were male. Subjects received extra credit points that counted towards their final grade in this class in exchange for their participation. All subjects read and signed an informed consent form prior to participation in the study (Appendix A).

### Procedure

Subjects participated in two different experimental sessions. During the first session, all subjects were administered the revised Self-Monitoring Scale (Lennox & Wolfe, 1984) and the Myers-Briggs Type Indicator (Form F). Subjects were then invited back for a second session in which to complete a set of four tasks. Second sessions took place within two weeks of the first session. Tasks were the same as those used previously in Zaccaro, Foti & Kenny (1991), and in Rueb & Foti (in press).

During the second session, subjects participated in groups of nine. These groups will subsequently be referred to as a "rotations". Throughout the second session, the nine subjects were divided into three groups of three members each. The members of the smaller groups worked together on one of the experimental tasks. When each task was completed, subjects were "rotated" to a new group, until all four tasks were finished. The membership of the smaller groups was manipulated such that each individual participated once and only once with every other member of the group.

Protocol guidelines were provided to research assistants so that each task period was standardized. Thus, task assignments were explained to each task-group by a research assistant who read the instructions from the set of protocols. Time allotted for each task varied according to task assignment. Following completion of each task, subjects were

given two questionnaires, and asked to rate the leadership abilities of each of the other persons within the group. Subjects were also asked to rank each group member (including themselves) in order of leader preference if the group were asked to meet a second time to work on the same kind of task.

## **Tasks**

Four different tasks were used in the present study. The tasks included a manufacturing game, a simple construction task, a leaderless discussion, and a current social problem. Zaccaro et al. (1991) found that these tasks were significantly associated with leadership.

**Manufacturing game.** At the beginning of the task, each group was given \$10,000, and itemized list of supply costs and resale prices, and product specification drawings. Across three different sessions, the assigned group goal was to make as much money as possible. Each session had different supply costs and selling prices. The group was then be given the opportunity to purchase production parts (Lego blocks), from which they produced either robots, boats, or jeeps to sell (Appendix B).

**Leaderless group discussion.** Instructions informed group members that they were participating as members of a Township school board. Each member was assigned a different point of view concerning the allocation of a school board budget surplus of \$80,000. Each group member was presented with a position and proposals. Following presentation of viewpoints, the three group members discussed the proposals and wrote a recommendation for the budget surplus allocation (Appendix C).

**Current social problem.** The group considered the question, “should children with AIDS be allowed to attend school?” The group discussed all possible options and then prepared recommendations, accounting for the needs of the children, parents, peers, and school personnel, and the community (Appendix D).

**Simple construction task.** The group was required to make as many moon tents as possible. A moon tent is made from a simple paper folding exercise, and looks like a small paper tent. Each group was informed that an extra credit point would be given to each group member of the group that produced more moon tents than the other two groups in the rotation. Groups had two ten minute sessions to build moon tents with a ten minute break between sessions. During the break, each group was told that they trailed the lead group by five moon tents. At the end of the task, all the moon tents were collected and all subjects received an extra point (Appendix E).

### Questionnaires

**The Myers-Briggs Type Indicator.** The Myers-Briggs Type Indicator (Form F) was used to identify the psychological type of each subject (Appendix F). This scale is a forced choice inventory in which choices are between seemingly inconsequential everyday events. Each choice represents two poles of the same Jungian preference (i.e. the questions address each preference separately in a mutually exclusive fashion). Responses that are most predictive with a prediction ratio of 72% or greater carry a weighted “2” in scoring. Items with a prediction ratio of 63% to 71% are weighted “1”. Items that are considered overpopular are weighted “0”. These questions are included since their removal changes the prediction ratios of the other questions (for a more elaborate description see Myers and McCaulley, 1989).

Based on the results of this scale, subjects will be assigned to a temperament in a categorical fashion. The use of categorical variables is a conservative test of type theory, and is recommended by the developers of the test when it is used in research (Myers and McCaulley, 1989).

**Self-Monitoring Scale.** Self-monitoring was measured using the revised self-monitoring scale (Lennox and Wolfe, 1984). The anchors on this scale range from 1 (Certainly always false) to 6 (Certainly always true). A sample item is “I am able to read

people's true emotions correctly through their eyes". A high score on this scale indicates a high self-monitor (Appendix G). Internal reliability for the self-monitoring scale was checked for these data, with  $\alpha = .75$ .

### Dependent Measures

Leadership was measured by the General Leadership Impression - GLI (Appendix H). This is a 5-item questionnaire which requests each member of the group to rate every other member of the group on leadership ability. This scale uses a 5-point Likert scale ranging from 1 (Nothing) to 5 (Extreme Amount).

A second measure of leadership emergence required group members to complete the following: "If you were asked to meet a second time with this same group to work on the same task, please rank in order, your preference for a group leader. Indicate your choice by putting the number assigned to each group member in the space provided. Please include yourself in the rankings." Subjects were instructed to rank 1 to their top choice for the leadership position, 2 to their second choice, and 3 to their last choice.

## **Results**

Descriptive statistics are available for this sample in Table 1. This table presents Myers-Briggs temperament type, self-monitoring scores, adjusted self-monitoring scores, adjusted leadership ratings, and adjusted leadership rankings for each subject (Calculation of adjusted scores is described below).

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Insert Table 1 about here

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In order to test hypothesis one, scores from the General Leadership Impression scale were computed by assigning values to each response using a 5-point Likert scale. A value of 1 was assigned to the response "Nothing", and a value of 5 was assigned to the response "Extreme Amount". These item values were totalled to yield composite scores ranging from 5 to 25 points. Unadjusted leadership ratings were computed by averaging

the composite ratings assigned by the other group members. In the case of the ranking measure, an individual's unadjusted leadership rankings were scored directly. Thus, each subject's score was the average of the ranks assigned by other group members.

The amount of trait-based variance in the leadership emergence scores was analyzed using the Social Relations Model (Kenny, 1988; Kenny and La Voie, 1984), and its corresponding ROTO computer program (Kenny, 1989). This model partitions the variance of the ratings into three separate parts. These include the rater effect, the ratee effect, and an interaction term.

The ratee effect is the true leadership score and represents the extent to which an individual tends to be seen by others as a leader. The rater effect is a rater bias term which refers to the tendency of an individual to see people in a group as a leader. Finally, the interaction term is an error term which refers to that variance which stems from the interaction of the rater and the ratee.

In order to look for stability across tasks, it is necessary to further partition the ratee and rater variance into their stable and unstable components. Stable ratee variance indicates that an individual is seen as a leader *across tasks*. Stable rater variance examines the tendency of a rater to see others as high on leadership *across tasks*. In other words, stable variance is predictive in nature, in so far as it indicates the degree to which performance or ratings in one task are related to performance or ratings on another.

In contrast, unstable variances reflect fluctuations in the behavior of the rater and ratee. For example, unstable variances are the extent to which performance or ratings in one task is *not* indicative of performance or ratings on another. Unstable variance can be further partitioned so that *true* unstable variance, or that not related to random error, is isolated.

Of particular interest in this analysis is the term  $\lambda^2$ . This term is computed by dividing the stable variance in a set of ratings by the sum of the stable and true unstable

variance. Thus, it represents the extent to which leadership is stable across different tasks.  $\lambda^2$  was analyzed using F-tests in order to determine if the amount of variance in the ratings representing ratee effects was significant.

In this study, both GLI ratings as well as the rankings assigned to individuals were partitioned using ROTO and the Social Relations Model in order to test for stability in leadership emergence. Results indicated that 73% of the variance in GLI ratings represented stable ratee effects,  $t(11) = 3.48, p < .01$ . Similarly, 54% of the variance in the rankings was due to stability in the ratee's leader behavior,  $t(11) = 4.18, p < .01$ . The proportion of the variance due to a rater bias was 33% for the GLI scale,  $t(11) = 3.23, p < .01$ . No rater-based variance can exist in rankings.

In order to truly test Hypothesis 1, it was necessary to examine the proportion of ratee's behavior that was stable across groups and tasks, or  $\lambda^2$ . Analyses completed on subjects' GLI ratings indicated that the proportion of stable leader behaviors was significant,  $\lambda^2 = .89, F(11) = 9.11, p < .05$ . Similarly,  $\lambda^2$  was significant for the rankings measure,  $\lambda^2 = .78, F(11)=4.52, p < .05$ . Thus, Hypothesis 1 was supported. Perceptions of leadership behavior were stable across tasks, such that the same individuals consistently received higher leadership ratings independent of task or group membership.

In order to test Hypothesis 2, adjusted leadership scores were computed for both the GLI and ranking measures using the unadjusted leadership scores described above. Adjusted leadership scores were computed by subtracting the average of an individual's unadjusted leadership scores from the rotation's average unadjusted leadership scores. Thus, the adjusted leadership scores were a mean deviation score for each individual by rotation. In this way, scores were adjusted for differences in mean leadership ratings across rotations, as well as for individual averages between tasks within a rotation.

Total raw scores for the self-monitoring scale were calculated by summing the values for each of 13 question (question 2 and 9 were reversed scored). These values ranged from 1 (certainly always false) to 6 (certainly always true). In a similar manner, the results from the self-monitoring scale were then adjusted for mean differences by rotation.

The second hypothesis was tested using sub-group analysis. That is, for both the GLI and ranking measures, Pearson's correlations were calculated between the adjusted leadership scores, and self-monitoring for each of the four temperament types. None of these correlations were significant. Thus, Hypothesis 2 was not supported. The relationship between emergent leadership and self-monitoring was further investigated with a Pearson correlation between adjusted leadership scores and self-monitoring for all four groups as a whole. This relationship was also not significant. Due to the evidence presented by Garland and Beard (1979) that the relationship between self-monitoring and leader emergence may be related to gender, a second sub-group analysis tested for gender effects. Again, this analysis was not significant. Results from these analyses are presented in Table 2.

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Insert Table 2 about here

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The third and final analysis examined the effect of self-monitoring on the leadership ratings themselves. That is, does one's level of self-monitoring affect the degree to which one's ratings of other group members agrees with the adjusted leadership scores derived in Hypothesis 2. This analysis focused on ratings made using the General Leadership Impression (GLI) scale. The nature of this scale is ideal for this analysis since the ratings focus on an individual's behaviors *independent of other group members' behaviors*. Thus, as opposed to the rankings measure, it does not force the rater to give different ratings to each member of group. In fact, it is often the case that raters using this scale give similar if not identical ratings to other group members.

In order to test Hypothesis 3, self-monitoring scores were divided into two categories, high and low self-monitors, using a median split on the continuous scores. To determine if indeed the high self-monitoring raters demonstrated more agreement in their ratings of an emergent leader, correlations between individual GLI ratings and overall emergent leadership scores were compared. Thus, mean ratings made by an individual rater of the other members of the rotation group were correlated with the averaged adjusted leadership scores of those members. Results of this analysis are presented in Table 3. Rater's self-monitoring was indeed significantly related to emergent leader ratings. That is, high self-monitors demonstrated more agreement in their ratings than did their low self-monitoring counterparts.

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Insert Table 3 about here

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In light of these findings, the relationship between emergent leadership and self-monitoring that was examined in Hypothesis 2 was further scrutinized. Specifically, the researcher was curious as to how the distribution of self-monitors may have affected this relationship by rotation. In this way, Pearson correlations were computed between GLI ratings and self-monitoring for each rotation. Since each rotation consisted of only nine subjects, these correlations were extremely sensitive to group outliers, and none were expected to be significant. It was interesting, however, to compare these correlations with the number of high self-monitors present in each group. The results of these analyses are presented in Table 4.

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Insert Table 4 about here

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As was expected, none of the correlations between emergent leadership and self-monitoring were significant. However, an examination of these correlations reveals that only seven of the twelve rotations were in the expected direction. Specifically, only seven

rotations had a positive relationship between the variables of interest. What is interesting to note is that each of the rotations that had a positive relationship between emergent leadership and self-monitoring had at least four members who were high self-monitors.

The relationship between rater self-monitoring and level of agreement with overall ratings was further investigated in a set of exploratory analyses examining the role of temperament. Specifically, a sub-group analysis was performed on high self-monitoring raters to see if the level of agreement between individual ratings and adjusted leadership scores was moderated by type. Results are presented in the lower portion of Table 3. These results suggest that type does indeed act as a moderator. That is, only NF and SJ high self-monitors manifested agreement between individual leadership ratings and overall leadership ratings. This correlation was only significant for SJ high self-monitors ( $p < .05$ ).

Given the evidence that only high self-monitoring SJ and NF raters were in agreement with the overall leadership ratings, a set of exploratory analyses was done to examine who was emerging according to this group. In this way, adjusted leadership scores were calculated based on the perceptions of these raters only. That is, for each rotation, an individual's leadership score was determined using the ratings given to that individual by the high self-monitoring SJ and NF raters in the rotation. These scores were then correlated with self-monitoring scores using a Pearson correlation, and the relationship was examined by type. Rotation #2 was dropped from the analysis since none of its members fit into this category. Results from this analysis are presented in Table 5. None of the correlations were significant, although the relationship for the SJ ratees approached significance ( $r = -.34, p < .06$ ).

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Insert Table 5 about here

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## Discussion

The hypothesis that emergent leadership is stable across groups and tasks was supported by the present study. Using the Social Relations Model developed by Kenny (1989), it was demonstrated that 73% of the variance in leadership ratings using the GLI was stable, and attributable to individual characteristics. Similarly, 54% of the variance in leadership ratings was stable using the ranking measure. This study supports the findings of several earlier studies (Kenny & Zaccaro, 1983; Zaccaro, Foti, & Kenny, 1991; Rueb and Foti, in press), and further distinguishes itself by isolating the most stable variance that has been reported in leadership ratings to date (previous studies reported between 33% and 65% stable variance). Thus, it appears that leadership is indeed a phenomenon that occurs in the individual rather than the situation. More specifically, an individual who is perceived as an leader in one situation, is likely to be perceived as a leader in another situation, independent of situational variables.

In light of this, the lack of support for the second hypothesis was particularly disturbing. Given the unusually high amount of stable leadership ratings found in Hypothesis 1, it had been expected that the relationship between self-monitoring and emergent leadership predicted in Hypothesis 2 would be that much easier to detect. Instead, these data indicated no relationship at all. Sub-group analysis by type did not yield any significant relationships, nor did an examination of gender effects. While these results are difficult to understand in and of themselves, the fact that support was found for Hypothesis 3 may help to clarify the issue.

Hypothesis 3 predicted that self-monitoring would moderate perceptual agreement in leadership ratings. Indeed, these data indicated that the relationship between a rater's perceptions of other group members, and the overall leadership scores for those members was stronger for high self-monitors. In fact, the relationship for low self-monitors was

not significant. Thus, low self-monitors displayed little agreement with the overall leadership scores of group members.

This hypothesis was theoretically derived from the fact that leadership emergence, as defined here, is a function of group members' perceptions. Low self-monitors by definition, are less successful in recognizing and interpreting social cues than are their high self-monitoring counterparts. Furthermore, research in the area of leadership has demonstrated that the performance of low self-monitors, as well as perceptions of that performance are unrelated to the behaviors of a leader (Anderson & Tolson, 1989; Anderson & Tolson, 1991). Such is not the case for high self-monitors.

The present data support the idea that leadership perceptions of low self-monitors may reflect subjects' idiosyncrasies, resulting in more variability in ratings. In contrast, high self-monitors are more systematic in their ratings. Theoretically, this follows since they are more likely to perceive, interpret, and respond to the behaviors of others, including an emergent leader.

The relationship between ratings of high self-monitors and total adjusted leadership scores was of particular interest. Given the findings for the third hypothesis, it is not surprising that there was no significant relationship between self-monitoring and emergent leadership found in the Hypothesis 2. Historically, this relationship was not very robust. In the past, the correlations have typically been low, ranging from .18 to .33. The fact that these correlations were low enough to suggest that something was moderating the relationship between self-monitoring and emergent leadership served as the original foundation for the second hypothesis. The results of the present study indicate that this relationship may be more complex than originally thought.

Specifically, while the correlation between self-monitoring and emergent leadership itself is moderate, one should recall that the emergent leadership scores used to test the relationship reflect the perceptions of low self-monitors, as well as the high self-

monitoring raters. Thus, one of the reasons that this relationship might have been so low in the first place is due to the variance introduced by these raters.

The data presented in Table 4 lend moderate support to this suggestion. Specifically, the rotations in the present study that did reflect the expected relationship between self-monitoring and emergent leadership had at least four group members who were high self-monitors. Thus, the adjusted leadership scores for the members of these rotations had at least four ratings that were likely to be in agreement with regard to emergent leadership. While these data can only serve as a starting point for an investigation of this relationship, future research should examine the role of self-monitoring in emergent leadership in the face of an objective measure of leadership.

Recall that emergent leadership has heretofore been treated as a function of perceptual agreement among group members. One of the implications of Hypothesis 3 is that perceptual agreement is not ensured by stability in leadership ratings. That is, while some people display high levels of perceptual agreement with the overall group ratings, others simply do not. By relying on these perceptions as a measure of leadership emergence, further development of leadership theory will be difficult at best. Not only do the ratings of low self-monitors cloud the issue by introducing unsystematic variance, it is unclear if the agreement that was displayed by high self-monitors reflects accuracy or not. That is, high self-monitoring raters may be in agreement - but what are they agreeing to?

By introducing an objective measure of leadership (i.e. a video record of the group interaction), these questions could be answered. In this way, independent raters could determine leadership emergence, against which groups members' perceptions could be compared. In addition, such a measure would allow for a true test of the relationship between emergent leadership and self-monitoring. Specifically, would high self-monitors be more likely to emerge as leaders, if leadership were being measured independently of group members' perceptions.

These issues are further complicated by the exploratory analyses which found that perceptual agreement among raters is additionally moderated by type. Specifically, only NF and SJ high self-monitors manifested agreement between their ratings of group members, and overall leadership ratings. In fact, the relationship disappeared altogether for NT and SP raters. While the correlation was significant only for the high self-monitoring SJ subjects, it is suggested that the small sample size is responsible for the lack of significance in NF high self-monitors. If further research could demonstrate that this is indeed the case, the implications are extensive.

As was stated earlier, it is difficult to know what was perceived and rated as “leader behaviors” in the absence of an objective measure of leadership. However, the final set of exploratory analyses attempted to do just that. Specifically, the relationship between emergent leadership and self-monitoring was examined using only the judgements made by high self-monitoring SJ and NF raters. This group was chosen since they had shown agreement with overall group perceptions in Hypothesis 3.

Unfortunately, none of the relationships were significant, although the relationship for SJ rates approached significance. Again, it is suggested that a small sample size could be responsible for the lack of significance in this measure. Specifically, of the 108 subjects, only 32 were high self-monitoring NF and SJ raters. In some rotations, adjusted leadership scores were determined by as few as two raters. One rotation had to be dropped altogether since there were no raters from the desired group.

It is interesting to note, however, that the relationship between emergent leadership and self-monitoring for SJ subjects was opposite in direction than had been expected. Specifically, in the case of SJ individuals, those that are *higher* in self-monitoring are *less* likely to emerge as leaders. It is for future researchers to discover whether this is indeed a significant relationship. Should this be the case, it would indicate that the behaviors that

are being rated as “leader behaviors” by this group of raters do not involve those associated with self-monitoring.

Given the fact that the present study found no relationship between emergent leadership and self-monitoring, a test of Hypothesis 2 was not possible. This hypothesis predicted that the relationship between self-monitoring and emergent leadership was moderated by temperament *at the level of actual leader behaviors*. Thus, it was expected that only NF and SJ subjects would show the relationship between high self-monitors and emergent leadership. In contrast, it was expected that NT and SP subjects would arrive at positions of leadership independent of their self-monitoring levels. It is here suggested that such a hypothesis is still plausible. In other words, it is hypothesized that a future study which incorporated objective measures of leadership might still find that such a moderated relationship exists.

Further questions are raised by the present data regarding the underlying reasons for the differences in rater agreement. Are NT and SP raters less accurate in their perceptions - independent of level of self-monitoring? Or rather, do these types actually possess different implicit leadership theories than do SJ and NF raters? Such an analysis was not possible in the present study, in that it would require an objective measure of leadership emergence with which to compare subjects ratings. Theoretically, however, there is reason to believe that the latter possibility might be the case.

Recall that both NF and SJ individuals tend to be people oriented in their approach. For the NF, this is the result of the search for identity, as well as a desire to be in harmony with the world. The SJ, on the other hand, strives to belong to meaningful institutions. The self-definition of the SJ is derived by their membership in these institutions. While the motivations of these two temperaments are theoretically distinct, both are driven to understand the needs of the people around them. For the NF, this understanding facilitates harmony, while for the SJ it fosters a sense of belonging.

In contrast, NTs and SPs have quite another approach. In considering the NT, recall that the quest for these individuals is *competence*. It is important to understand that NTs have “their own standard and benchmarks for what is ‘competent’, against which they measure themselves, and everybody else” (Kroegeer & Thuesen, 1988, p. 54). As such, it is probable that what is considered to be a “competent leader” by one NT, is not necessarily considered to be competent by another.

The SP individual has *action* as a goal. Action for its own sake. Action that is not instrumental in achieving an objective. It is not the concern of the SP if they happen to get something accomplished along the way. For these types “‘authority’ isn’t necessarily in an individual or institution, it’s accomplishing whatever needs to be done in a given moment” (Kroegeer & Thuesen, 1992). How the needs of the situation are defined are based entirely on the individual experiences of the SP. Thus, interpretation of any given situation would be expected to vary from one SP to another, based on their past pursuits of action.

Again, while the theoretical roots of behavior of the NT and SP are distinct, it is suggested that the outcomes in terms of implicit leadership theories would be similar. Specifically, these two groups could be expected to show less conformity, and more dispersion in what they think of as being “prototypical to leader behaviors” than their SJ and NF counterparts. This variability would be introduced by differing concepts of competence, and differing background experiences for the NT and SP respectively. Further, it would potentially manifest itself as less agreement among group members when rating the behaviors of a given individual.

In conclusion, this study was able to provide evidence that perception of leadership is something inherent in the perceived individual. Specifically, by rotating individuals through multiple tasks, and by varying group membership, it was demonstrated that certain people are consistently seen by others as possessing the qualities of a leader. This

fact strengthens the notion that leadership is indeed something stable in the individual rather than in the situation.

While the present data failed to support the theory that self-monitoring is positively related to emergent leadership, they were able to demonstrate the complexity of the issue. That is, these data indicate that leadership perceptions of self-monitors are moderated by type. Thus, perceptions of leadership are not as uniform as previously thought. While certain individuals (i.e. SJ and NF high self-monitors) do demonstrate agreement in their ratings, others (NT and SP) do not. It is for future research to better explore the nature of this relationship.

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**Appendix A**

**Statement of Informed Consent**

## Informed Consent Form

Title: Social Perceptions and Group Interactions

Experiment #:1016-92

You are invited to participate in a study investigating social perceptions in group interactions. To accomplish the goals of the study, you will be asked to work in groups of three. Subjects will be asked to perform each of four tasks. These tasks include a manufacturing game where group members will simulate a small business that manufactures products in order to gain maximal profit. The second task requires students to participate in a group discussion concerning a current social problem. The third task requires students to defend different points of view on a local school board. The final task is a paper construction task. Two questionnaires will be administered prior to the first task session. This experiment will take approximately three and one half hours of the students time.

If you wish to participate in this research project, please read the following carefully:

- 1.) This study will assess the perception process in group interactions. Understanding the process is necessary to interpret the end results of perceptions. Hence, this result can potentially add to the literature in group interactions. Furthermore, since everyone has engages in group interactions, this study has practical importance. For example, understanding the dynamics of group interactions allows individuals to better understand their own contributions and their effects on others. Finally, results of the study will be made available to those interested in this topic upon request. No guarantee of benefits has been made to induce you to participate.
- 2.) The results of the study will remain strictly confidential. At no time will the researcher release the results of the study to anyone, other than those individuals working on the project. The information you provide will be analyzed independent of your name, and only a subject number will be assigned to your data to identify you during any analyses and write-up.
- 3.) You may cease participation at any time without penalty.
- 4.) You will receive a total of five (4) points towards your total extra credit points for Introductory Psychology 2004 in exchange for your participation. Withdrawal from the experiment will not affect your receiving extra credit.
- 5.) The information accumulated by this research may be used for scientific or education purposes and information relating to your responses may be presented at scientific meetings and/or published and republished in professional journals or books, or used for any other purpose which Virginia Tech's Department of Psychology considers proper in the interest of education, knowledge, or research.
- 6.) This research project has been approved by the Human Subjects Committee of the Psychology Department, and by the institutional review board of Va. Tech.

Stated Permission From Subjects:

- 1.) I have read and understand the above description of the experiment, had an opportunity to ask questions, and had them answered, and hereby acknowledge the above and give my voluntary consent for participation in this study.
- 2.) I understand that I am participating freely and in full understanding that I need not participate if I do not wish to, and if I participate I may withdraw at any time without penalty.
- 3.) I understand that should I have any questions about this research and its conduct, I should contact any of the following.

Researcher: Maureen C. Walsh	Phone: 552-2157
Faculty Advisor: Dr. Roseanne Foti	Phone: 231-5814
Chair, HSC: Dr. J.J. Franchina	Phone: 231-5664
Chair, IRB: Dr. E. Stout	Phone: 231-9359

NAME (Please Print): \_\_\_\_\_ Signature\_\_\_\_\_

**Appendix B**  
**Manufacturing Game: Protocol and Instructions**

### **Protocol: Manufacturing Game**

- 1.) "In this session you are going to be completing an exercise called the Manufacturing Task".
- 2.) Distribute Instructions.
- 3.) Read Instructions aloud and ask if there are any questions.
- 4.) Put price lists up for session one and distribute money. (Tell subjects they get \$10,000).
- 5.) Tell subjects that they have 5 minutes to organize themselves.
- 6.) Leave the room.
- 7.) Come back in and tell subjects time allotted for session 1 is 15 minutes.
- 8.) Begin manufacturing session 1.
- 9.) After session 1 is over say: "Stop"; and trading stops for that session.
- 10.) Change price list for session 2.
- 11.) Tell subjects they have 2 minutes to organize themselves.
- 12.) Leave the room.
- 13.) Come back and tell subjects amount of time for session 2 is 10 minutes.
- 14.) Begin manufacturing task for session 2. When session is over, trading stops.
- 15.) Change price list for session 3.
- 16.) Tell subjects they have 2 minutes to organize themselves. Leave the room.
- 17.) Come back and tell subjects amount of time for session 3 is 10 minutes.
- 18.) Begin manufacturing task for session 3. When session is over, trading stops.
- 19.) Count up money; let the subjects know how much they made.
- 20.) "We would like you to fill out the following questionnaires. Please think carefully about your responses and answer each question as honestly as you can".
- 21.) Distribute questionnaires; read instructions and then ask if they have any questions.
- 22.) Collect questionnaires.
- 23.) Thank participants.
- 24.) Rotate or leave.

## **Manufacturing Game Instructions**

You are a business organization which manufactures the products displayed on the buyer's table. In this exercise, you will be purchasing raw materials, making the products, and selling them back to the buyer. You will be provided with an itemized list of supply costs and selling prices. All transactions will be made with either the supplier or the buyer.

You will be manufacturing three products: jeeps, robots, and boats. You have been provided with the assembly instructions for each of the products. The Lego components you will need are small blocks, large blocks and tall blocks, and various specialty blocks (these parts are illustrated on a sheet included with the illustrated assembly instructions).

You will construct these products in three separate sessions. The component parts will vary in cost from session to session. The selling prices will also vary, and some products may not be saleable during some sessions. You will be provided with a price list and information about the amount of time allotted for each session. Your company will also receive \$10,000 in start up funds.

How you go about the assembly, what roles you play, and how you organize the company is entirely up to you. Before beginning the first session, you will have 5 minutes to organize yourselves. In this exercise it is important that you keep in mind the following points:

- 1.) Assembly instructions must be followed exactly for the products to be saleable. Products which do not match the model will not be bought by the buyer.
- 2.) No component parts may be bought and no products may be sold after the session. However, only the costs and prices for that session will be in effect.
- 3.) Your group objective is to make as much money as possible. After the final session, only the cash you have on hand will be counted. Remaining parts and/or unsold products will not be considered in the final profit figure.

**MANUFACTURING GAME: COMPONENT COSTS AND SELLING PRICES**

<u>Components</u>	<u>Session</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
2X4 Block	80	100	100	80
2X2 Block	60	40	20	40
Wheels	110	125	150	125

<u>Selling Prices:</u>	<u>1</u>	<u>2</u>	<u>3</u>
Jeep	1750	1920	1940
Robot	1510	1460	1485
Boat	1800	1880	1560

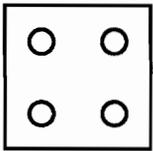
Time Sequence:

Session 1	15 minutes
Break	2 minutes
Session 2	10 minutes
Break	2 minutes
Session 3	10 minutes

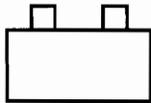
Required Legos Blocks for Manufacturing Task

<u>Blocks</u>	<u>Product</u>		
	<u>Jeep</u>	<u>Boat</u>	<u>Robot</u>
2X2	5	12	11
2X4	13	12	10
Wheels	2	-	-

**2X2 Block**

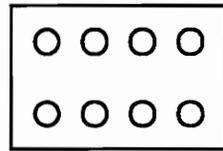


Top



Side

**2X4 Block**

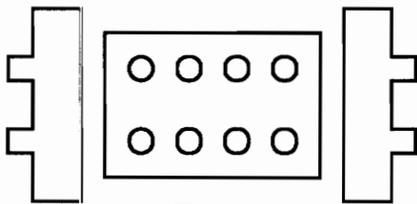


Top

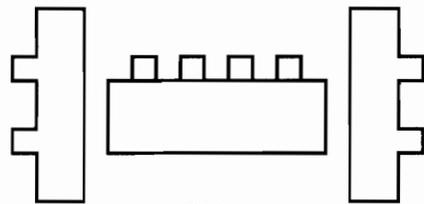


Side

**Wheels**

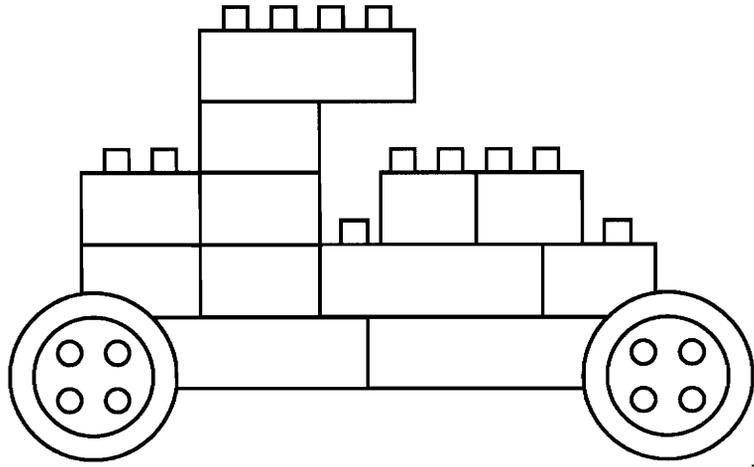


Top

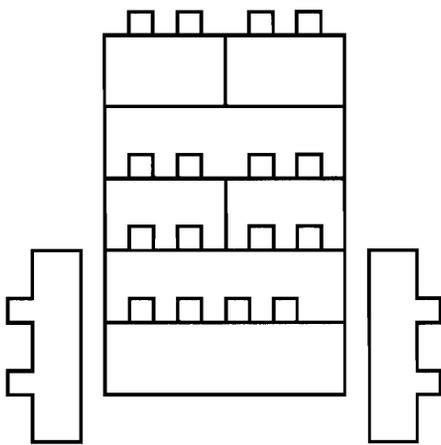


Side

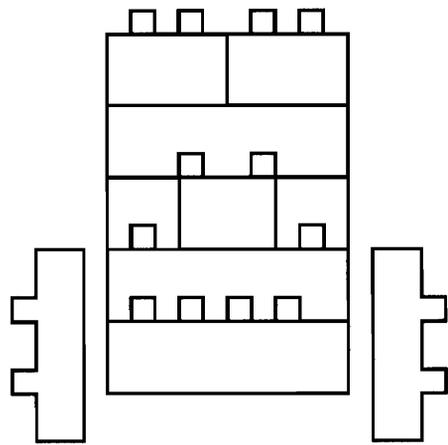
**Required Lego Blocks for Manufacturing Task.**



Sideview



Frontview

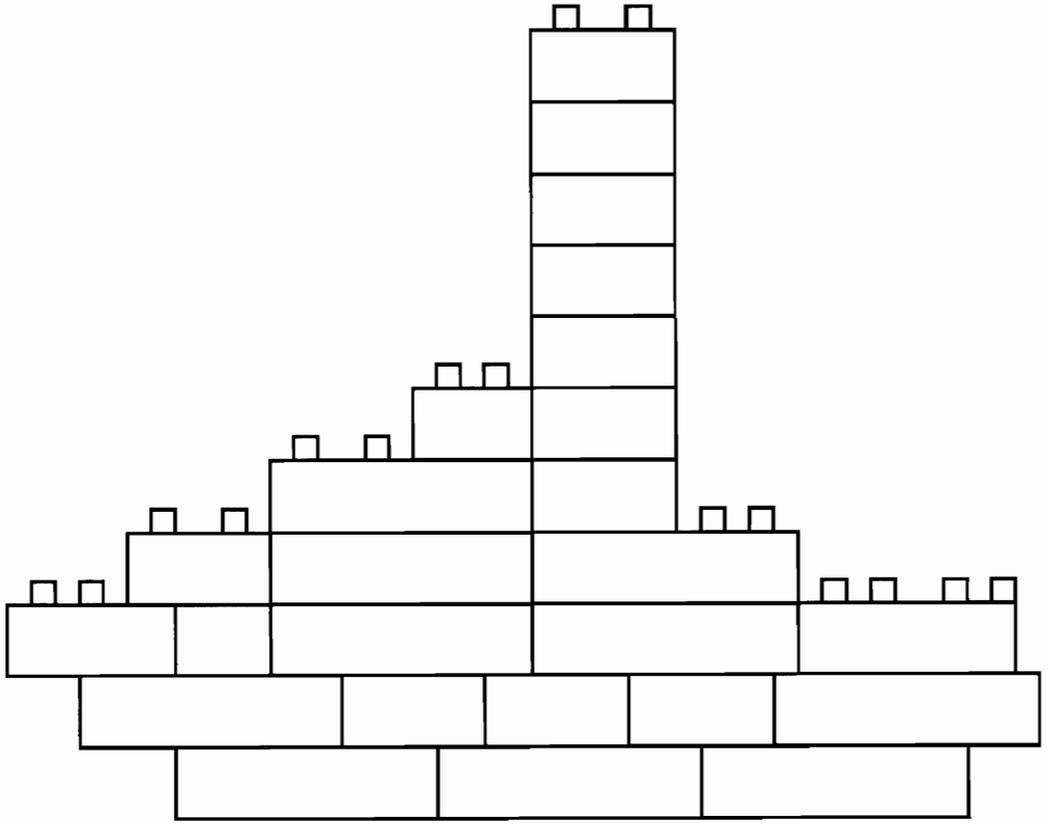


Rearview

**Manufactured Jeep**

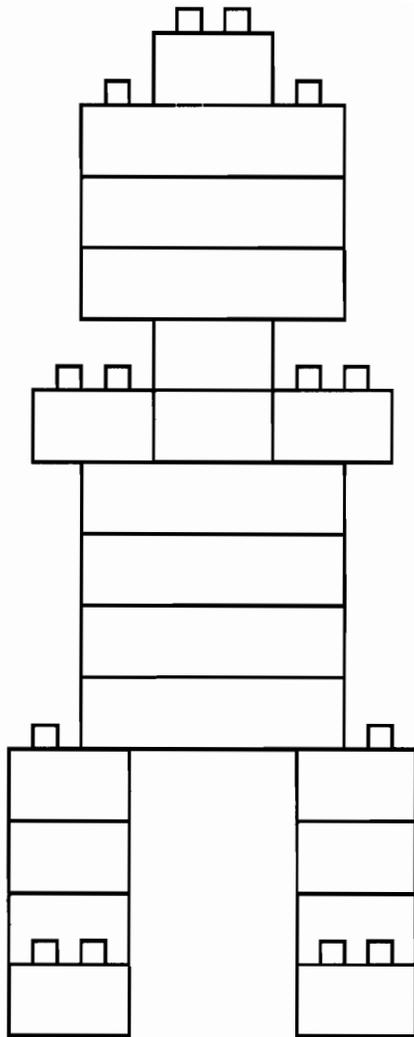


Frontview

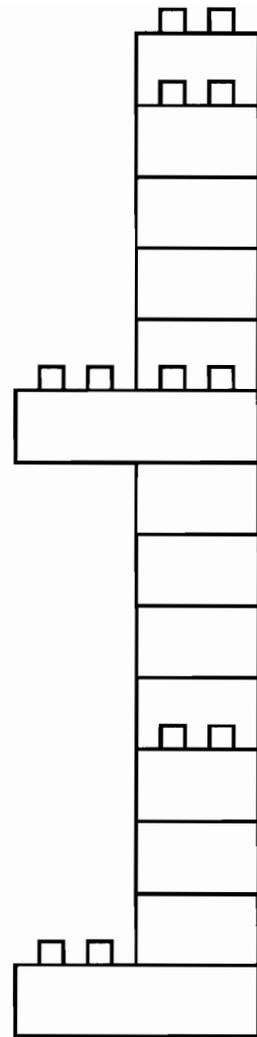


Sideview

**Manufactured Boat**



Frontview



Sideview

**Manufactured Robot**

## Appendix C

### Leaderless Group Discussion: Protocol and Instructions

### **Protocol: Leaderless Group Discussion**

- 1.) "In this session you will be completing a group discussion exercise."
- 2.) "Each of you will be defending a particular viewpoint in the group."
- 3.) Hand out instructions and read along with the group. Read up to point #1 of background information.
- 4.) "Are there any questions? Now, each of you should read the rest of the background information and then read your particular viewpoint that you will defend."
- 5.) After they finish reading their positions, ask them if they have any questions. Remind them that they have 10 minutes to prepare their arguments and tell them to begin.
- 6.) After 10 minutes, tell them to stop and have position #1 begin his/her 5 minute presentation. Then positions 2 and 3 proceed in order. After all arguments are presented, tell the group they are to discuss the proposals from 20 minutes and prepare a set of reasonable written recommendations.
- 7.) When 20 minutes are up, (or when the participants finish) collect the recommendations.
- 8.) "We would now like you to fill out the following questionnaires. Please think carefully about your responses and answer each question as honestly as you can."
- 9.) Distribute questionnaires; read instructions and then ask if they have any questions.
- 10.) Collect questionnaires.
- 11.) Thank participants.
- 12.) Rotate or leave.

## **Leaderless Group Discussion Instructions**

### **Background Information: Group Discussion Exercise**

In this exercise, you are to play the part of a member of a township school board. You are to assume that you are attending a special meeting of the board to decide what to do with a budget surplus of \$80,000. At the end of the fiscal year, the school system found itself with the extra money that it must put to use to be eligible for a budget increase in the next fiscal year. The purpose of the board meeting is to determine the best possible use or uses for the money. Each of you will be advocating a different use for the money. It is up to you, the board members, to decide what proposals will be accepted and how much money will be allocated to each proposal. You will have 10 minutes to prepare your argument to present to the board. Each board member will in turn, have 5 minutes to present his or her argument. Finally, there will be a 20 minute session during which the board (all of you) will discuss the proposals and come to a reasonable written recommendation or set of recommendations.

- 1.) There are five elementary schools, grades 1-4, with a total enrollment of 3,869.
- 2.) There are four middle schools, grades 5-7, with a total enrollment of 3,024.
- 3.) There are two junior high schools, grades 8-9, with a total enrollment of 1,482.
- 4.) Grades 10-12 are taught at two senior high schools; the total enrollment is 2,175.
- 5.) There is a vocational school which students from the two high schools attend who are enrolled in Voc-Education program. The school serves approximately 489 students in two separate sessions, one in the morning and one in the afternoon. Juniors attend classes in the mornings and seniors attend the afternoon classes. During the rest of the day, students are at their respective high schools.
- 6.) The school system has 28 school buses, most of which are at least five years old.

7.) The aggregate performance of students at various grades on standardized achievement tests given state-wide was as follows for the most recent test administrations:

Grade	Percentile	
	Verbal	Numerical
1	69	58
2	73	54
3	70	55
4	68	52
5	57	46
6	47	48
7	43	50
8	48	47
9	50	46
10	42	57
11	45	51
12	48	47

(Note: the higher the percentile, the better the performance.)

8.) For the last fiscal year, teachers' salaries were 12% below the state average.

Principals' salaries were 7% below the state average.

## GDE Candidate Position #1

Your primary concern in the board meeting is in allocating the surplus funds to remedial reading programs in the elementary schools. The following points are important to your argument:

- 1.) Performance on the statewide achievement tests has declined by an average of 18 percentile points for grades 1-4 over the last five years.
- 2.) Reading programs have not been emphasized at the elementary levels. There are only 3 schools that provide special services for students with reading difficulties, and these schools are limited in the number of children they can handle.
- 3.) The school system has not purchased new reading texts for the primary grades for six years. Furthermore, no money has been spent on additional reading materials or audiovisual aids in the last two years.
- 4.) The school system presently employs only two reading specialists, It would be much better if three more were hired so that each elementary school could have its own reading specialist.
- 5.) The success of the school system at the higher levels is going to critically depend on the progress of the students in language skill at early grades.

Overall, it is your goal to get as much money as possible earmarked for improvements in the reading programs at the elementary levels. It would also be advantageous to suggest programs that would not require additional funds to strengthen your argument.

## GDE Candidate Position #2

Your primary concern in the board meeting is in allocating the surplus funds to the vocational school. The following points are central to your argument:

1.) The vocational school is next to last in the state in the amount of money spent per student for vocational education.

2.) Much of the equipment now used in the vocational school is out of date. Furthermore, repair costs have been greatly increased over the last few years due to the difficulty of finding replacement parts for much of the equipment used.

3.) Many classes are crowded. The school would greatly benefit by hiring three new teachers. The crowding has been linked to a decline in the quality of the education students are receiving, as well as the discipline problems.

4.) It is anticipated that a large number of students will be pursuing vocational education programs in the next few years, due to the surplus of college graduates in many fields, and the recent increases in college tuition.

5.) If the vocational school fails to adequately prepare its students, many of them will be either unemployed or will be working at low paying jobs in the community. This could turn into skepticism towards the school system and a lack of community support for and interest in education.

Overall, it is your goal to get as much money as possible earmarked for the vocational education program. It would also be advantageous to suggest programs that would not require additional funds to strengthen your argument.

### GDE Candidate Position #3

Your primary concern in the board meeting is in allocating the surplus funds to the repair and overhauling of the school system's buses. The following points are central to your argument:

1.) Most of the buses are old and are not kept in good repair. An obvious safety problem is presented, especially for the younger students, a majority of whom depend on the buses to get to school.

2.) Many of the buses do not have the extensive interior padding that newer buses have. In the event of an accident, injury caused by impact against the bare metal frame that is behind each seat can be serious. In fact, in the last year, two students were severely injured in such an accident.

3.) If buses break down and cannot be repaired immediately, the remaining buses will be overcrowded.

4.) Many buses will need new tires before the next winter, for which the money does not presently exist.

5.) An increased movement of families out into the suburbs increases the dependence of children on the buses to get to school.

Overall, it is your goal to get as much money as possible earmarked for the buses. It would also be advantageous to suggest programs that would not require additional funds to strengthen your argument.

**Appendix D**

**Current Social Problem: Protocol and Instructions**

### **Protocol: AIDS Question**

- 1.) “Welcome, in this session you will be discussing a controversial issue.”
- 2.) While reciting step 1, had out the question, scrap paper, and pencils if needed.
- 3.) Read question aloud to subjects.
- 4.) Ask if there are any questions.
- 5.) Tell subjects to begin discussion.
- 6.) Leave the room.
- 7.) Check on subjects periodically.
- 8.) When subjects are finished, collect questions and written suggestions.
- 9.) “We would now like you to fill out the following questionnaires. Please think carefully about your responses and answer each question as honestly as you can.”
- 10.) Distribute questionnaires; read instructions and then ask if they have any questions.
- 11.) Collect questionnaires.
- 12.) Thank participants.
- 13.) Rotate or leave.

### **Discussion Session Instructions**

In this group session, we would like you to consider the following question:

Should children with AIDS be allowed to attend school?

Please discuss this question as a group, considering all possible options. Then prepare a set of recommendations, taking into account the needs of the children, parents, peers, school personnel, and the community.

Appendix E  
Simple Construction Task: Protocol

### **Protocol: Moon Tents**

- 1.) "Welcome! In this session you will be completing an exercise called Moon Tents."
- 2.) "Before we begin, I want to show you how to make a moon tent."
- 3.) "Take a piece of paper from under your chair and follow me.
- 4.) Go through the steps for making a moon tent.
- 5.) "Now, please practice making three moon tents."
- 6.) "In this exercise, you will be competing with the groups in the other rooms to see who makes the most moon tents."
- 7.) "We are offering the group who makes the most moon tents an extra credit point. This means if you make more moon tents than the other groups, you will receive 1 extra point."
- 8.) "Therefore, your task as a work group is to make as many moon tents as you can in 20 minutes."
- 9.) "You will work for a 10-minute session; then we will have a break while you count up the number of moon tents you make. The other group will be doing the same thing and I will then tell you how many moon tents they made. Then you will work for another 10-minute session; after which, we will count moon tents and determine the total number of moon tents made."
- 10.) Begin first 10 minute session.
- 11.) When the 10 minutes have passed, have subjects count their moon tents. The number made is their score. Leave room, pretending to find out the other group's scores.
- 12.) "Your score was \_\_\_\_\_, the best group's score was \_\_\_\_\_(add 5 to first group's score) and the other groups score was \_\_\_\_\_(make this the lowest score)."
- 13.) Begin session 2.
- 14.) When over, take box of moon tents outside and give the participants the questionnaires. Tell them you will count the moon tents while they fill out the questionnaires.
- 15.) "We would now like you to fill out the following questionnaires. Please think carefully about your responses and answer each question as honestly as you can."
- 16.) Distribute questionnaires; read instructions and then ask if they have any questions.
- 17.) Collect questionnaires.
- 18.) Thank participants.
- 19.) Rotate or leave.

Appendix F  
Myers-Briggs Type Indicator (Form F)

**Which answer comes closest to telling you how you usually feel or act?**

- 1.) Does following a schedule  
(1) appeal to you, or  
(2) cramp you?
- 2.) Do you usually get along better with  
(1) imaginative people, or  
(2) realistic people?
- 3.) If strangers are staring at you in a crowd, do you  
(1) often become aware of it, or  
(2) seldom notice it?
- 4.) Are you more careful about  
(1) people's feelings, or  
(2) their rights?
- 5.) Are you  
(1) inclined to enjoy deciding things, or  
(2) just as glad to have circumstances decide a matter for you?
- 6.) When you are with a group of people, would you usually rather  
(1) join in the talk of the group, or  
(2) talk individually with people you know well?
- 7.) When you have more knowledge or skill in something than the people around you, is it more satisfying  
(1) to guard your superior knowledge, or  
(2) share it with those who want to learn?
- 8.) When you have done all you can to remedy a troublesome situation, are you  
(1) able to stop worrying about it, or  
(2) still more or less haunted by it?
- 9.) If you were asked on a Saturday morning what you were going to do that day, would you  
(1) be able to tell pretty well, or  
(2) list twice too many things, or  
(3) have to wait and see?
- 10.) Do you think on the whole that  
(1) children have the best of it, or  
(2) life is more interesting for grown-ups?
- 11.) In doing something that many other people do, does it appeal to you more to  
(1) do it in the accepted way, or  
(2) invent a way of your own?
- 12.) When you were small, did you  
(1) feel sure of your parents' love and devotion to you, or  
(2) feel that they admired and approved of some other child more than they did of you?
- 13.) Do you  
(1) rather prefer to do things at the last minute, or  
(2) find that hard on the nerves.
- 14.) If a breakdown or mix-up halted a job on which you and a lot of others were working, would your impulse be to  
(1) enjoy the breathing spell, or  
(2) look for some part of the work where you could still make progress, or  
(3) join the "trouble-shooters" who were wrestling with the difficulty.
- 15.) Do you usually  
(1) show your feelings, or  
(2) keep your feelings to yourself?
- 16.) When you have decided upon a course of action, do you  
(1) reconsider it if unforeseen disadvantages are pointed out to you, or  
(2) usually put it through to a finish, however it may inconvenience yourself and others?
- 17.) In reading for pleasure, do you  
(1) enjoy odd or original ways of saying things, or  
(2) like writers to say exactly what they mean?
- 18.) In any of the ordinary emergencies of everyday life, do you prefer to  
(1) take orders and be helpful, or  
(2) give orders and be responsible?
- 19.) At parties, do you  
(1) sometimes get bored, or  
(2) always have fun?
- 20.) Is it harder for you to adapt to  
(1) routine, or  
(2) constant change?
- 21.) Would you be more willing to take on a heavy load of extra work for the sake of  
(1) extra comforts and luxuries, or  
(2) a chance to achieve something important?
- 22.) Are the things you plan or undertake  
(1) almost always things you can finish, or  
(2) often things that prove too difficult to carry through?
- 23.) Are you more attracted to  
(1) a person with a quick and brilliant mind, or  
(2) a practical person with a lot of common sense?
- 24.) Do you find people in general  
(1) slow to appreciate and accept ideas not their own, or  
(2) reasonably open-minded?
- 25.) When you have met strangers, do you find it  
(1) pleasant, or at least easy, or  
(2) something that takes a good deal of effort?
- 26.) Are you inclined to  
(1) value sentiment more than logic, or  
(2) value logic more than sentiment?

- 27.) Do you prefer to  
 (1) arrange dates, parties, etc., well in advance, or  
 (2) be free to do whatever looks like fun when the time comes?
- 28.) In making plans which concern other people, do you prefer to  
 (1) take them into your confidence, or  
 (2) keep them in the dark until the last possible moment?
- 29.) Is it a higher compliment to be called  
 (1) a person of real feeling, or  
 (2) a consistently reasonable person?
- 30.) When you have a decision to make, do you usually  
 (1) make it right away, or  
 (2) wait as long as you reasonably can before deciding?
- 31.) When you run into an unexpected difficulty in something you are doing, do you feel it to be  
 (1) a piece of bad luck, or  
 (2) a nuisance, or  
 (3) all in the day's work?
- 32.) Do you almost always  
 (1) enjoy the present moment and make the most of it, or  
 (2) feel that something just ahead is more important?
- 33.) Are you  
 (1) easy to get to know, or  
 (2) hard to get to know?
- 34.) With most of the people you know, do you  
 (1) feel that they mean what they say, or  
 (2) feel you must watch for a hidden meaning?
- 35.) When you start a big project that is due in a week, do you  
 (1) take time to list the separate things to be done, or  
 (2) plunge in?
- 36.) In solving a personal problem, do you  
 (1) feel more confident about it if you have asked other people's advice, or  
 (2) feel that nobody else is in as good a position to judge as you are?
- 37.) Do you admire more the people who are  
 (1) conventional enough never to make themselves too conspicuous, or  
 (2) too original and individual to care whether they are conspicuous or not?
- 38.) Which mistake would be more natural for you:  
 (1) to drift from one thing to another all your life, or  
 (2) to stay in a rut that didn't suit you?
- 39.) When you run across people who are mistaken in their beliefs, do you feel that  
 (1) it is your duty to set them right, or  
 (2) it is their privilege to be wrong?
- 40.) When an attractive chance for leadership comes to you, do you  
 (1) accept it if it is something you can really swing, or  
 (2) sometimes let it slip because you are too modest about your own abilities,  
 (3) or doesn't leadership ever attract you?
- 41.) Among your friends, are you  
 (1) one of the last to hear what is going on, or  
 (2) full of news about everybody?
- 42.) Are you at your best  
 (1) when dealing with the unexpected, or  
 (2) when following a carefully worked-out plan?
- 43.) Does the importance of doing well on a test make it generally  
 (1) easier for you to concentrate and do your best, or  
 (2) harder for you to concentrate and do yourself justice?
- 44.) In your free hours, do you  
 (1) very much enjoy stopping somewhere for refreshments, or  
 (2) usually want to use the time and money another way?
- 45.) At the time in your life when things piled up on you the worst, did you find  
 (1) that you had gotten into an impossible situation, or  
 (2) that by doing only the necessary things you could work your way out?
- 46.) Do most people you know  
 (1) take their fair share of praise and blame, or  
 (2) grab all the credit they can but shift any blame on to someone else?
- 47.) When you are in an embarrassing spot, do you usually  
 (1) change the subject, or  
 (2) turn it into a joke, or  
 (3) days later, think of what you should have said?
- 48.) Are such emotional "ups and downs" as you may feel  
 (1) very marked, or  
 (2) rather moderate?
- 49.) Do you think that having a daily routine is  
 (1) a comfortable way to get things done, or  
 (2) painful even when necessary?
- 50.) Are you usually  
 (1) a "good mixer", or  
 (2) rather quiet and reserved?
- 51.) In your early childhood (at six or eight), did you  
 (1) feel your parents were very wise people who should be obeyed, or  
 (2) find their authority irksome and escape it when possible?

- 52.) When you have a suggestion that ought to be made at a meeting, do you  
 (1) stand up and make it as a matter of course, or  
 (2) hesitate to do so?
- 53.) Do you get more annoyed at  
 (1) fancy theories, or  
 (2) people who don't like theories?
- 54.) When you are helping in a group undertaking, are you more often struck by  
 (1) the cooperation, or  
 (2) the inefficiency,  
 (3) or don't you get involved in group undertakings?
- 55.) When you go somewhere for the day, would you rather  
 (1) plan what you will do and when, or  
 (2) just go?
- 56.) Are the things you worry about  
 (1) often really not worth it, or  
 (2) always more or less serious?
- 57.) In deciding something important, do you  
 (1) find you can trust your feeling about what is best to do, or  
 (2) think you should do the *logical* thing, no matter how you feel about it?
- 58.) Do you tend to have  
 (1) deep friendships with a very few people, or  
 (2) broad friendships with many different people?
- 59.) Do you think your friends  
 (1) feel you are open to suggestions, or  
 (2) know better than to try to talk you out of anything you've decided to do?
- 60.) Does the idea of making a list of what you should get done over the week-end  
 (1) appeal to you, or  
 (2) leave you cold, or  
 (3) positively depress you?
- 61.) In traveling, would you rather go  
 (1) with a companion who made the trip before and "knew the ropes", or  
 (2) alone or with someone greener at it than yourself?
- 62.) Would you rather have  
 (1) an opportunity that may lead to bigger things, or  
 (2) an experience that you are sure to enjoy?
- 63.) Among your personal beliefs, are there  
 (1) some things that cannot be proved, or  
 (2) only things that *can* be proved?
- 64.) Would you rather  
 (1) support the established methods of doing good, or  
 (2) analyze what is still wrong and attack unsolved problems?
- 65.) Has it been your experience that you  
 (1) often fall in love with a notion or project that turns out to be a disappointment - so that you "go up like a rocket and come down like a stick", or do you  
 (2) use enough judgment on your enthusiasm so that they do not let you down?
- 66.) Do you think you get  
 (1) more enthusiastic about things than the average person, or  
 (2) less enthusiastic than the average person?
- 67.) If you divided all the people you know into those you like, those you dislike, and those toward whom you feel indifferent, would there be more of  
 (1) those you like, or  
 (2) those you dislike?
- [On this next question *only*, if two answers are true, mark both]
- 68.) In your daily work, do you  
 (1) rather enjoy an emergency that makes you work against , or  
 (2) hate to work under pressure, or  
 (3) usually plan your work so you won't need to work under pressure?
- 69.) Are you more likely to  
 (1) praise, or  
 (2) blame?
- 70.) Is it higher praise to say someone has  
 (1) vision, or  
 (2) common sense?
- 71.) When playing cards, do you enjoy most  
 (1) the sociability, or  
 (2) the excitement of winning,  
 (3) the problem of getting the most out of each hand,  
 (4) the risk of playing for stakes,  
 (5) or don't you enjoy playing cards?

**Which word in each pair appeals to you more?**

- |          |             |                |     |           |            |             |     |
|----------|-------------|----------------|-----|-----------|------------|-------------|-----|
| 72.) (1) | firm minded | warm-hearted   | (2) | 98.) (1)  | sensible   | fascinating | (2) |
| 73.) (1) | imaginative | matter-of-fact | (2) | 99.) (1)  | changing   | permanent   | (2) |
| 74.) (1) | systematic  | spontaneous    | (2) | 100.) (1) | determined | devoted     | (2) |
| 75.) (1) | congenial   | effective      | (2) | 101.) (1) | system     | zest        | (2) |
| 76.) (1) | theory      | certainty      | (2) | 102.) (1) | facts      | ideas       | (2) |
| 77.) (1) | party       | theater        | (2) | 103.) (1) | compassion | foresight   | (2) |
| 78.) (1) | build       | invent         | (2) | 104.) (1) | concrete   | foresight   | (2) |
| 79.) (1) | analyze     | sympathize     | (2) | 105.) (1) | justice    | mercy       | (2) |
| 80.) (1) | popular     | intimate       | (2) | 106.) (1) | calm       | lively      | (2) |
| 81.) (1) | benefits    | blessings      | (2) | 107.) (1) | make       | create      | (2) |
| 82.) (1) | casual      | correct        | (2) | 108.) (1) | wary       | trustful    | (2) |
| 83.) (1) | active      | intellectual   | (2) | 109.) (1) | orderly    | easy-going  | (2) |
| 84.) (1) | uncritical  | critical       | (2) | 110.) (1) | approve    | question    | (2) |
| 85.) (1) | scheduled   | unplanned      | (2) | 111.) (1) | gentle     | firm        | (2) |
| 86.) (1) | convincing  | touching       | (2) | 112.) (1) | foundation | spire       | (2) |
| 87.) (1) | reserved    | talkative      | (2) | 113.) (1) | quick      | careful     | (2) |
| 88.) (1) | statement   | concept        | (2) | 114.) (1) | thinking   | feeling     | (2) |
| 89.) (1) | soft        | hard           | (2) | 115.) (1) | theory     | experience  | (2) |
| 90.) (1) | production  | design         | (2) | 116.) (1) | sociable   | detached    | (2) |
| 91.) (1) | forgive     | tolerate       | (2) | 117.) (1) | sign       | symbol      | (2) |
| 92.) (1) | hearty      | quiet          | (2) | 118.) (1) | systematic | casual      | (2) |
| 93.) (1) | who         | what           | (2) | 119.) (1) | literal    | figurative  | (2) |
| 94.) (1) | impulse     | decision       | (2) | 120.) (1) | peacemaker | judge       | (2) |
| 95.) (1) | speak       | write          | (2) | 121.) (1) | accept     | change      | (2) |
| 96.) (1) | affection   | tenderness     | (2) | 122.) (1) | agree      | discuss     | (2) |
| 97.) (1) | punctual    | leisurely      | (2) | 123.) (1) | executive  | scholar     | (2) |

- 124.) Do you find the more routine parts of your day  
 (1) restful, or  
 (2) boring?
- 125.) If you think you are not getting a square deal in a club or team to which you belong, is it better to  
 (1) shut up and take it, or  
 (2) use the threat or resigning if necessary to get your rights?
- 126.) Can you  
 (1) talk easily to almost anyone for as long as you have to, or  
 (2) find a lot to say only to certain people or under certain conditions?
- 127.) When strangers notice you, does it  
 (1) make you uncomfortable, or  
 (2) not bother you at all?
- 128.) If you were a teacher, would you rather teach  
 (1) fact courses, or  
 (2) courses involving theory?
- 129.) When something starts to be the fashion, are you usually  
 (1) one of the first to try it, or  
 (2) not much interested?
- 130.) In solving a difficult personal problem, do you  
 (1) tend to do more worrying than is useful in reaching a decision, or  
 (2) feel no more anxiety than the situation requires.
- 131.) If people seem to slight you, do you  
 (1) tell yourself they didn't mean anything by it, or  
 (2) distrust their good will and stay on guard with them thereafter?
- 132.) When you have a special job to do, do you like to  
 (1) organize it carefully before you start, or  
 (2) find out what is necessary as you go along?
- 133.) Do you feel it is a worse fault  
 (1) to show too much warmth, or  
 (2) not to have warmth enough?
- 134.) When you are at a party, do you like to  
 (1) help get things going, or  
 (2) let others have fun in their own way?
- 135.) When a new opportunity comes up, do you  
 (1) decide about it fairly quickly, or  
 (2) sometimes miss out through taking too long to make up your mind?
- 136.) In managing your life, do you tend to  
 (1) undertake too much and get into a tight spot, or  
 (2) hold yourself down to what you can comfortably handle?
- 137.) When you find yourself definitely in the wrong, would you rather  
 (1) admit you are wrong, or  
 (2) not admit it, though everyone knows it,  
 (3) or don't ever find yourself in the wrong?
- 138.) Can the new people in you meet tell what you are interested in  
 (1) right away,  
 (2) only after they really get to know you?
- 139.) In your home life, when you come to the end of some undertaking, are you  
 (1) clear as to what comes next and ready to tackle it, or  
 (2) glad to relax until the next inspiration hits you?
- 140.) Do you think it more important to  
 (1) be able to see the possibilities in a situation, or  
 (2) be able to adjust to the facts as they are?
- 141.) Do you feel that the people whom you know personally owe their successes more to  
 (1) ability and hard work, or  
 (2) luck, or  
 (3) bluff, pull and shoving themselves ahead of others?
- 142.) In getting a job done, do you depend upon  
 (1) starting early, so as to finish with time to spare, or  
 (2) the extra speed you develop at the last minute?
- 143.) After associating with superstitious people, have you  
 (1) found yourself slightly affected by their superstitions, or  
 (2) remained entirely unaffected?
- 144.) When you don't agree with what has just been said, do you usually  
 (1) let it go, or  
 (2) put up an argument?
- 145.) Would you rather be considered  
 (1) a practical person, or  
 (2) an ingenious person?
- 146.) Out of all the good resolutions you may have made, are there  
 (1) some you have kept to this day, or  
 (2) none that have really lasted?
- 147.) Would you rather work under someone who is  
 (1) always kind, or  
 (2) always fair?
- 148.) In a large group, do you more often  
 (1) introduce others, or  
 (2) get introduced?
- 149.) Would you rather have as a friend someone who  
 (1) is always coming up with new ideas, or  
 (2) has both feet on the ground?

- 150.) When you have to do business with strangers, do you feel  
 (1) confident and at ease, or  
 (2) a little fussed or afraid that they won't want to bother with you?
- 151.) When it is settled well in advance that you will do a certain thing at a certain time, do you find it  
 (1) nice to be able to plan accordingly, or  
 (2) a little unpleasant to be tied down?
- 152.) Do you feel that sarcasm  
 (1) should never be used where it can hurt people's feelings, or  
 (2) is too effective a form of speech to be discarded for such a reason?
- 153.) When you think of some little things you should do or buy, do you  
 (1) often forget it till much later, or  
 (2) usually get it down on paper to remind yourself, or  
 (3) always carry through on it without reminders?
- 154.) Do you more often let  
 (1) your heart rule your head, or  
 (2) your head rule your heart?
- 155.) In listening to a new idea, are you more anxious to  
 (1) find out all about it, or  
 (2) judge whether it is right or wrong?
- 156.) Are you oppressed by  
 (1) many different worries, or  
 (2) comparatively few?
- 157.) When you don't approve of the way a friend is acting, do you  
 (1) wait and see what happens, or  
 (2) do or say something about it?
- 158.) Do you feel it is a worse fault to be  
 (1) unsympathetic, or  
 (2) unreasonable?
- 159.) When a new situation comes up which conflicts with your plans, do you try first to  
 (1) change your plans to fit the situation, or  
 (2) change the situation to fit your plans?
- 160.) Do you think the people close to you know how you feel  
 (1) about most things, or  
 (2) only when you have had some special reason to tell them?
- 161.) When you have a serious choice to make, do you  
 (1) almost always come to a clear-cut decision, or  
 (2) sometimes find it so hard to decide that you do not wholeheartedly follow up either choice?
- 162.) On most matters, do you  
 (1) have a pretty definite opinion, or  
 (2) like to keep an open mind?
- 163.) As you get to know people better, do you more often find that they  
 (1) let you down or disappoint you in some way, or  
 (2) improve upon acquaintance?
- 164.) When the truth would not be polite, are you more likely to tell  
 (1) a polite lie, or  
 (2) the impolite truth?
- 165.) In your way of living, do you prefer to be  
 (1) original, or  
 (2) conventional?
- 166.) Would you have liked to argue the meaning of  
 (1) a lot of these questions, or  
 (2) only a few?

**Appendix G**  
**Self-Monitoring Scale**

## Self-Monitoring Scale

- 1.) In social situations, I have the ability to alter my behavior if I feel that something else is called for.
- 2.) I am often able to read people's true emotions correctly through their eyes.
- 3.) I have the ability to control the way I come across to people, depending on the impression that I wish to give them.
- 4.) In conversations, I am sensitive to even the slightest change in facial expression of the person I'm conversing with.
- 5.) My powers of intuition are quite good when it comes to understanding other's emotions and motives.
- 6.) I can usually tell when others consider a joke to be in bad taste, even though they may laugh convincingly.
- 7.) When I feel that the image I am portraying isn't working, I can readily change it to something that does.
- 8.) I can usually tell when I've said something inappropriate by reading it in the listener's eyes.
- 9.) I have trouble changing my behavior to suit different people and different situations.
- 10.) I have found that I can adjust my behavior to meet the requirements of any situation I find myself in.
- 11.) If someone is lying to me, I usually know it at once from that person's manner of expression.
- 12.) Even when it might be to my advantage, I have difficulty putting up a good front.
- 13.) Once I know what the situation calls for, it's easy for me to regulate by actions accordingly.

## Appendix H

### General Leadership Impression Scale

## Leadership Ratings

The following questions concern your feelings toward and evaluations of group member \_\_\_\_\_. Please circle the answer which reflects your feelings.

1.) How much did this member contribute to the effectiveness of the task?

Extreme Amount	Substantial Amount	Moderate Amount	Very Little	Nothing
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2.) What degree of influence did this member exert in determining the final outcome of the task?

Extreme Amount	Substantial Amount	Moderate Amount	Very Little	Nothing
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3.) How much leadership did this member exhibit?

Extreme Amount	Substantial Amount	Moderate Amount	Very Little	Nothing
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4.) How much control over a group's activities did this member exhibit?

Extreme Amount	Substantial Amount	Moderate Amount	Very Little	Nothing
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5.) If you had to choose a leader for a task, how willing would you to vote for this member as leader?

Extreme Amount	Substantial Amount	Moderate Amount	Very Little	Nothing
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Appendix I  
Tables

Table 1

Individual Scores by Rotation

Rotation 1 (Female)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	NT	61	6.22	1.01	-.51
2	SP	59	4.22	1.76	-.76
3	SJ	47	-7.78	-1.36	.11
4	NF	58	3.22	.14	.24
5	SJ	46	-8.78	-.24	.24
6	NF	52	-2.78	.01	.36
7	NT	57	2.22	-.74	.11
8	SJ	58	3.22	-1.74	.61
9	SJ	55	.22	1.14	-.39

Self-Monitoring Mean: 54.78  
 Self-Monitoring SD: 5.33

Rotation 2 (Female)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	SJ	48	-4.67	-1.58	.00
2	NT	53	.33	-.58	-.13
3	NF	45	-7.67	3.79	-.50
4	SJ	53	.33	1.54	.25
5	SP	62	9.33	.17	.13
6	SP	52	-.67	.04	-.13
7	NF	53	.33	-2.71	.13
8	SJ	54	1.33	1.17	-.13
9	SJ	54	1.33	-1.83	.38

Self-Monitoring Mean: 52.67  
 Self-Monitoring SD: 4.637

Rotation 3 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	SJ	56	-4.11	-.97	.33
2	SJ	71	10.89	.03	.33
3	NF	61	.89	-1.85	.33
4	SP	58	-2.11	.15	-.04
5	SJ	70	9.89	-.10	.21
6	NT	58	-2.11	.78	-.42
7	NF	68	7.89	1.15	-.92
8	NT	47	-13.11	-.10	.46
9	NF	52	-8.11	.90	-.29

Self-Monitoring Mean: 60.11  
 Self-Monitoring SD: 8.24

Note. The scores reported above for GLI and Ranks have been adjusted for the rotation mean.

Table 1 (continued)

Rotation 4 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	SP	49	-4.22	-1.40	.26
2	SP	57	3.78	-.15	.14
3	SJ	49	-4.22	1.10	.01
4	SJ	58	4.78	-.28	.39
5	SP	50	-3.22	-1.15	-.11
6	SP	63	9.78	.85	-.36
7	NF	56	2.78	1.22	-.61
8	SJ	44	-9.22	.72	-.24
9	SJ	53	-.22	-.90	.51

Self-Monitoring Mean: 53.22

Self-Monitoring SD: 5.83

Rotation 5 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	NF	57	3.33	-.85	.33
2	NT	47	-6.67	.40	.08
3	NT	54	.33	-1.47	-.04
4	NF	49	-4.67	-.35	.46
5	NT	61	7.33	.65	-.42
6	NF	58	4.33	.40	-.17
7	SP	59	5.33	-1.97	.33
8	NT	43	-10.67	1.28	-.29
9	SJ	55	1.33	1.90	-.29

Self-Monitoring Mean: 53.67

Self-Monitoring SD: 6.06

Rotation 6 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	NT	55	-4	1.28	.32
2	NT	66	7	3.10	-.81
3	SP	62	3	-2.15	.07
4	SP	57	-2	1.35	-.31
5	SJ	46	-13	-.28	.32
6	SP	65	6	.72	.44
7	NF	55	-4	-.40	.44
8	NT	65	6	-2.65	.19
9	SJ	60	1	1.60	-.68

Self-Monitoring Mean: 59

Self-Monitoring SD: 6.48

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Note. The scores reported above for GLI and Ranks have been adjusted for the rotation mean.

Table 1 (continued)

Rotation 7 (Female)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	SJ	56	3.78	1.21	-.89
2	SJ	64	11.78	-.67	.49
3	SJ	51	-1.22	1.33	-.26
4	SP	54	1.78	-.17	-.14
5	SJ	47	-5.22	1.21	-.39
6	NF	53	.78	-.42	.24
7	SP	44	-8.22	.83	.74
8	NF	51	-1.22	-2.92	.24
9	SJ	50	-2.22	-.42	-.01

Self-Monitoring Mean: 52.22

Self-Monitoring SD: 5.69

Rotation 8 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	NT	62	7.11	1.31	-.29
2	NT	60	5.11	.06	-.04
3	SP	64	9.11	.68	.08
4	NT	52	-2.89	-3.44	.71
5	SJ	53	-1.89	-.82	.33
6	NT	53	-1.89	.93	-.04
7	NF	55	.11	1.68	-.79
8	NT	38	-16.89	.68	-.29
9	SJ	57	2.11	-1.07	.33

Self-Monitoring Mean: 54.89

Self-Monitoring SD: 7.62

Rotation 9 (Female)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	NF	48	-5.11	.90	-.06
2	NF	61	7.89	-.22	.07
3	NF	58	4.89	1.15	-.31
4	SP	54	.89	.65	.19
5	SJ	58	4.89	-2.10	.94
6	SJ	52	-1.11	.65	-.68
7	SP	47	-6.11	.03	-.06
8	SP	50	-3.11	1.53	-.68
9	SJ	50	-3.11	-2.60	.57

Self-Monitoring Mean: 53.11

Self-Monitoring SD: 4.94

Note. The scores reported above for GLI and Ranks have been adjusted for the rotation mean.

Table 1 (continued)

Rotation 10 (Female)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	SP	59	1.78	1.76	-.61
2	SJ	53	-4.22	.61	.51
3	NF	56	-1.22	.39	-.24
4	NF	60	2.78	2.51	-.74
5	SJ	59	1.78	-.86	.51
6	SP	61	3.78	-4.74	.64
7	NF	48	-9.22	.51	-.36
8	SJ	61	3.78	2.01	-.11
9	SJ	58	.78	-.99	.39

Self-Monitoring Mean: 57.22  
 Self-Monitoring SD: 4.29

Rotation 11 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	NF	56	3.22	.03	.56
2	NF	64	11.22	-1.60	.43
3	SP	40	-12.78	-3.72	.68
4	NT	54	1.22	1.15	-.32
5	NT	56	3.22	1.65	-.69
6	NF	47	-5.78	1.28	-.19
7	SJ	43	-9.78	1.53	-.32
8	NF	50	-2.78	.15	-.07
9	NT	65	12.22	-.47	-.07

Self-Monitoring Mean: 52.78  
 Self-Monitoring SD: 8.64

Rotation 12 (Male)

Subject	Type	Self-Monitoring	Adjusted SM	GLI	Rank
1	SJ	55	.67	.01	-.10
2	NT	54	-.33	-1.61	.65
3	NF	52	-2.33	.51	-.47
4	SJ	56	1.67	-1.11	.40
5	NF	60	5.67	.51	-.35
6	NT	51	-3.33	1.01	-.10
7	SP	56	1.67	.01	-.10
8	NT	56	1.67	1.26	-.72
9	SP	49	-5.33	-.61	.78

Self-Monitoring Mean: 54.33  
 Self-Monitoring SD: 3.27

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Note. The scores reported above for GLI and Ranks have been adjusted for the rotation mean.

Table 2

Correlations Between Measures of Emergent Leadership and Self-Monitoring

Group	N	GLI and Self-monitoring	Ranks and Self-monitoring
		r	r
NT	23	.04	-.29
NF	27	-.22	.03
SP	23	.21	-.28
SJ	35	-.05	.18
All	108	-.003	-.07
Males	63	.05	-.13
Females	45	.09	.04

Note. None of the above correlations were significant.

Table 3

Correlations between individual ratings and overall leadership scores

Subjects	N	<i>r</i>	<i>p</i>
Low SM	51	.12	.38
High SM	57	.28	.03
-----			
High self-monitors (by type)			
NT	12	.05	.85
NF	15	.47	.07
SP	13	-.03	.91
SJ	17	.54	.02

Table 4

Correlations between GLI ratings of emergent leadership and self-monitoring by rotation

<b>Rotation</b>	<b>r</b>	<b># of high self-monitors</b>
1	.39	6
2	-.29	1
3	.04	6
4	.17	4
5	-.31	5
6	.13	8
7	-.23	2
8	.12	5
9	-.14	3
10	-.06	7
11	.07	4
12	.09	5

Note. None of the above relationships were significant. Rotations whose correlations are in the expected direction are rotations 1, 3, 4, 6, 7, 11, and 12.

Table 5

Correlations between emergent leadership and self-monitoring

Subjects	N	<i>r</i>	<i>p</i>
Total	108	-.06	.50
NT	22	.21	.35
NF	25	.04	.83
SP	13	.0005	.99
SJ	17	-.34	.06

Note. The emergent leadership scores used in these analyses were calculated using only the ratings of the high self-monitoring SJ and NF raters.

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#### **Education**

1990-1992: Virginia Polytechnic Institute and State University, Blacksburg, VA.  
Master of Science in Psychology. Area: Industrial/Organizational.  
December, 1992.

Thesis title: *The Predictive Value of Psychological Type and Self-Monitoring on Emergent Leadership*

1985-1989: The College of William and Mary, Williamsburg, VA.  
Bachelor of Arts with High Honors in Psychology  
May, 1989.

Honor's Thesis title: *The Role of Self-Esteem in Behavioral Performance*

#### **RESEARCH EXPERIENCE:**

- 10/91-12/92           Thesis Research  
Roseanne J. Foti (Chair), VPI & SU,  
Blacksburg, VA  
Designed and implemented a laboratory study to assess the stability of leadership across multiple groups and task situations; the role that self-monitoring and psychological type as measured by the Myers-Briggs Type Inventory play in leadership was also examined.
- 6/88-4/89             Honor's Research  
Robert A. Johnson (Chair), The College of William and Mary.  
Williamsburg, VA.  
Translated the Coopersmith Self-Esteem Inventory into Spanish and administered it to students at the University of Valencia in Valencia, Spain in order to establish normative data for this population.  
Designed and implemented a laboratory study to assess the role that self-esteem has in performance.

#### **TEACHING EXPERIENCE:**

- 8/92-12/92           Graduate Teaching Assistant  
Virginia Polytechnic Institute and State University, Department of  
Psychology,  
Blacksburg, VA.  
Served as the lecture assistant for the Measurement in Psychology class. Attended lectures; administered and corrected exams; provided individual assistance when needed.

- 1/92-5/92 Graduate Teaching Assistant  
Virginia Polytechnic Institute and State University, Department of Psychology,  
Blacksburg, VA.  
Served as the lecture assistant to the Learning and Motivation class; assisted in the administration and correction of exams; kept class records for final grades. Also served as the lecture assistant for the Abnormal psychology class. Attended lectures, and kept notes; wrote exam questions; assisted in the administration of exams.
- 8/90-12/91 Graduate Teaching Assistant  
Virginia Polytechnic Institute and State University, Department of Psychology,  
Blacksburg, VA.  
Instructed laboratory session of introductory psychology course; facilitated class discussion; prepared and presented lectures and demonstrations; assisted in administration of exams; provided individual assistance as needed.
- 1/90-5-90 Graduate Teaching Assistant  
The Catholic University of America, Department of Psychology.  
Washington, D.C.  
Instructed the laboratory session of the Cognitive Psychology course; prepared and presented lectures and demonstrations; planned class projects; assisted in statistical analyses of those projects when needed; administered exams.

## **EMPLOYMENT HISTORY**

- 12/91-1/92 **Bell Atlantic Company**  
Associate Manager - Engaged for validation study associated with the Universal Test Battery intended for selection. Administered a computerized selection test, assisted in set-up of test; provided individual assistance to test takers.
- 1/91-4/91 **Neil Hauenstein, Consultant**  
Assisted in the development of a merit pay system for hospital employees. Interviewed employees for the purpose of developing job analyses.

## **GRADUATE COURSE WORK:**

### **I/O Courses and Seminars:**

Industrial Psychology  
Organizational Psychology  
Leadership Perceptions  
Performance Appraisal

### **Quantitative and Methodological Courses:**

Research Methodology  
General Statistics  
Multiple Regression  
Advanced Quantitative Topics  
Advanced Psychometrics

**CERTIFICATIONS:**

7/90

Typewatching Qualifying Workshop  
Otto Kroeger Associates  
Fairfax, VA.

Certified to give, score, and interpret the Myers-Briggs Type Indicator.

**PROFESSIONAL ASSOCIATIONS:**

4/92-present

Member of the Society of Industrial Organizational Psychologists (SIOP)

*Maureen C. Walsh*