

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

by

Maureen C. Walsh

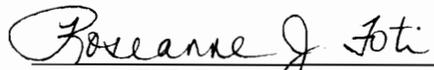
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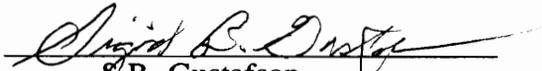
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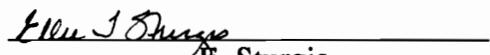
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(ABSTRACT)

Zaccaro, Foti, and Kenny (1991) and Rueb and Foti (in press) found a relation between self-monitoring, a measure of response flexibility, and emergent leadership. Walsh (1992) failed to support this hypothesis; however, a relation between self-monitoring and agreement in ratings of perceived leadership was indicated. The implications of inaccurate ratings suggested that an objective measure of leadership was necessary to further explore the nature of the relationship of self-monitoring and leadership, as well as leadership perceptions. The present study re-examined this issue, introducing an objective measure of leadership, and further examined the hypothesis that psychological type may act as a moderator in these relations. 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 65 percent of the variance in general leadership impressions, and 61 percent of the variance in perceived leadership behaviors was stable and due to characteristics of the individual. In addition, it was found that there is a discrepancy between the variance in perceived leadership ratings and the variance in actual leader behaviors. The hypothesis that self-monitoring and emergent leadership are related was not supported. Hypotheses concerning the relationship between self-monitoring and perceptual agreement and self-monitoring and rating accuracy received partial support. Psychological type did not moderate any of the above relations as predicted but did have an effect. Implications for future research were discussed.

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## INTRODUCTION

Historically, the study of leadership has proven to be an elusive and frustrating pursuit. It began with an attempt to isolate a set of traits which could account for, and explain the phenomenon of leadership (for a review see Stogdill, 1948; Mann, 1959). As such, researchers endeavored to compile a list of characteristics that could differentiate among individuals in such a way as to allow those to whom people look for guidance to be distinguished. Generally, the characteristics that were the focus of these studies were intelligence, dominance, adjustment, and masculinity.

During the late 1940's, however, research in the area of leadership ceased to focus on trait-based explanations. The abandonment of trait theory in the study of leadership followed criticism by Stogdill (1948) and Mann (1959), who reported in their respective reviews of the literature, that the data simply did not support the concept that leadership is a trait phenomenon. 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).

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

Leadership emergence refers to the fact that in a group situation, a particular individual generally 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 without a consideration of group performance.

With this distinction in mind, Lord et al. (1986) found that earlier research was indeed successful in identifying relations between dispositional variables and leadership if one focused on *perceptions* of leadership rather than on group performance outcomes. Specifically, it was found that 23 of 33 studies reviewed by Stogdill (1948) returned significant positive correlations between intelligence and leadership. In a similar fashion, 173 of the 196 studies reported in Mann (1959) showed positive correlations. Thus, trait characteristics are related to whether or not one is *perceived* as a leader.

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 individuals 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, & DeVader, 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 (e.g. political leader) within the broader category of leader and make distinct prototypic attributions that significantly differentiate one sub-category from another.

Lord, Foti, and DeVader (1984) also found that these basic level categories are in turn defined by the context in which leadership is 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 significance of situational variables, and their contribution to leadership was not an unexplored issue. In fact, Stogdill (1948) and Mann (1959) suggested that the situational demands of group interactions should be taken into account. Following this line of thought, one group of researchers proposed that leadership was a process involving the interaction of the group's needs, and individual members' abilities to satisfy those needs (Bogatta, Bales, & Couch, 1954; Bell & French, 1950; Carter & Nixon, 1949; Barnlund,

1962). In this way, leadership qualities manifest themselves as a result of conditions in the environment. Given this perspective, the question arose as to whether or not leadership qualities were inherent in the individual at all. That is, was it possible that leadership was entirely a function of the situation?

With this issue in mind, several studies tested for cross-situational consistency in the leadership phenomenon using rotation designs. A rotation design manipulates either group membership, task requirements, or both, thereby counteracting the effects of a special skill an individual might have, or carry over from a previous group. These studies did not speculate about specific traits, but instead sought to discover whether there is consistency in who emerges as a leader across groups and tasks. Support for a trait-based explanation of leadership required that evidence of such consistency be found.

Whereas some of these studies were able to demonstrate stability in leader emergence across groups (Bogatta, Bales, & Couch, 1954; Bell & French, 1950), others demonstrated stability despite changing task requirements (Carter & Nixon, 1949). Barnlund (1962), however, was the first to manipulate both groups and tasks. The data failed to support leader stability across situations when both of these variables were controlled. 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.

These conclusions were later challenged, and it was found that there was, after all, some cross-situational consistency in Barnlund's study. Kenny & Zaccaro (1983) reanalyzed the data using the Social Relations Model (Kenny, 1988; Kenny & La Voie, 1984). This model partitions the variance of a leadership rating, and is able to differentiate between rater bias, error resulting from the rater/ratee interaction, and a true leadership score. Thus, one can isolate the extent to which an individual tends to be seen by others as a leader. Using the Social Relations Model, the researchers found that 49 percent to 82 percent 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 composite findings of the above studies indicate that (1) there is a relation between leadership emergence and perceived dispositional characteristics or traits (Lord, DeVader, & Alliger 1986); (2) there are prototypic categories in the mind of the observer that are situationally dependent, and which allow a leader to be classified as such (Foti, Fraser, & Lord, 1982; Lord, Foti, & DeVader, 1984); and (3) there is some cross-situational consistency in leadership emergence across groups and across tasks (Kenny & Zaccaro, 1983). 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 these individuals have in common is the ability to perceive what group members expect of a leader and to adjust their own behavior accordingly (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), based on 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 relation 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 than their low self-monitoring counterparts to emerge as leaders .

Two studies (Zaccaro, Foti, & Kenny, 1991; Foti & Rueb, in press) used a rotation design to manipulate the situational requirements of the leader. The results further supported the hypothesis that there is indeed a significant relation between self-monitoring and leadership emergence. Furthermore, by manipulating the situational requirements, it was demonstrated that high self-monitors do 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 from multiple predictors. When the trait measures of dominance and mathematical intelligence were considered in addition to the self-monitoring construct, the amount of variance accounted for by 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. In a similar way, the relation between implicit theories and leadership might be expected to impact on the behaviors themselves. Specifically, in attempting to emulate leadership behaviors, actors manifest 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).

With this in mind, it was hypothesized that the variance associated with ratee effects and leadership emergence could be better accounted for if one considered individual differences in the cognitive style of emergent leaders (Walsh, 1992). That is, it was suggested that individual differences in information processing led to systematic differences in implicit theories of leadership. In turn, these differences were thought to modify the relation between self-monitoring and leadership emergence.

Instead, results indicated that there was no relation between self-monitoring and emergent leadership at all. That is, the relation which had been found in previous studies was not detected. Interestingly, the data did indicate that perceptual agreement among raters concerning who emerged as a leader was moderated by self-monitoring. Specifically, only high self-monitors agreed upon who indeed had emerged as a leader. Further analyses found that the degree of perceptual agreement among raters was additionally moderated by psychological type. That is, only high self-monitors with certain cognitive styles manifested agreement between their ratings of any given group member, and overall ratings of that individual.

Heretofore, emergent leadership had been treated as a function of perceptual agreement among group members. The implications of the above findings are that perceptual agreement is not ensured by stability in leadership ratings. In this study, it is hypothesized that the variance associated with ratee effects and leadership emergence can be better accounted for if one considers individual differences in cognitive style of the perceivers (raters) themselves. That is, it is suggested that individual differences in information processing may lead to systematic differences in implicit theories of leadership, which in turn affect leadership perceptions.

## 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, however, came to an effective halt following literature reviews by Stogdill (1948) and later by Mann (1959). These reviews reported that, although numerous studies had attempted to find a consistent trait associated with the leadership phenomenon, all had failed to support a trait-based explanation. As a result of these reviews, many researchers abandoned the search for an interpretation of leadership that rested in the individual (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 indicated that there was indeed a “significant trend indicating that leadership and intelligence were associated” (Lord, DeVader, & 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 considering the implications of their findings, the authors pointed out that the conclusions drawn by Stogdill and Mann have often been misinterpreted insofar as these authors had not directly criticized the trait approach. Instead, they had 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 to the fact that only if one confused leadership emergence with leadership effectiveness was the relation between certain dispositional traits (i.e. intelligence and dominance) and leadership not significant. If one were to examine perceptions of leadership emergence, without taking into account subsequent group performance (leadership effectiveness), the above mentioned traits were predictive of whether or not someone would be *perceived* as a leader by group members. 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).

These conclusions were supported by previous research into leadership perceptions. Recall that Foti, Fraser, and Lord (1982) found that there is a core set of characteristics that is associated by the perceiver with leadership. Thus, there is a cognitive category associated with the phenomenon. In addition, the individual is capable of successfully differentiating among several sub-categories (i.e. political leader) within the broader category of leader and make distinct prototypic attributes associated with each.

Moreover, Lord, Foti, and DeVader (1984) found that the probability that prototypic attributes will be made based on a given sub-category is in turn determined by the context in which leadership was observed (i.e. military, religious, business). That is, 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. Thus, 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, & DeVader, 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.

Earlier attempts at testing the trait hypothesis with the rotation design were successful insofar as they demonstrated that leadership was stable across groups when only group membership was varied (Borgatta, 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 has revealed that some cross-situational consistency exists 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, & DeVader, 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, low self-monitoring individuals value “congruence between who they are and what they do” (p. 5). Thus, it would be expected that 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 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 relation 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.

Whereas extraversion and self-monitoring are conceptually different, there does appear to be some degree of overlap between these two constructs (Snyder, 1987). Although 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, & DeVader, 1984).

**Self-monitoring and leadership.** Research that directly examines the relation 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 male groups in the sample, nor was it demonstrated in a condition involving an anagram task.

The relation 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 relation 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 relation 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 relation 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 situational demands, 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 stable characteristic in the individual (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 relation should hold across tasks and groups. Some researchers have incorporated a rotation design into their examination of emergent leadership (Zaccaro, Foti, & Kenny, 1991; Foti & Rueb, 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 percent of the variance in leadership perceptions could be attributed to some characteristic within the individual. Moreover, self-monitoring was found to be moderately correlated ( $r = .22$ ) with stable leadership perceptions across groups and tasks.

Rueb and Foti (in press) further tested the effects of traits in addition to self-monitoring as predictors of leadership emergence. They found that by using multiple variables to predict leadership emergence, the researchers were able to account for 18 to 33 percent of the variance in stable leadership scores as opposed to 11 to 16 percent accounted for by self-monitoring alone. Foti and Rueb concluded that efforts should be made further to refine the characteristics profile of leadership emergence.

**Self-monitoring and the leadership process.** In considering what other characteristics may contribute to the profile of emergent leaders, an interesting question arises with respect to the relation between self-monitoring and emergent leadership. Specifically, whereas 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 behaviors, it follows that these individuals may go about the leadership process differently 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, leaders are expected to model their own 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 leaders change their organizational environments. These programs instruct leaders to analyze their own leadership style, and then to restructure the group in order to establish a match. Anderson cites TORI-team building and sensitivity training as examples of these types of programs. The basic principle behind these 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 contrast, 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 defined 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 random 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 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 senses. It is the function which “mediates the perception of a physical stimulus” (Jung, 1971, p. 461), and 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. Because stimulation of the five senses brings to awareness that which is present and real, sensing types manifest such characteristics as realism, common sense, practicality, traditional, preference for the concrete rather than abstract, and pleasure in the moment. In fact, 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). Jung (1971) explained that through intuition, “a content presents itself whole and complete, without our being able to explain or discover how this content came into existence” (p. 453). For the individual who prefers intuition, the detailed information presented by sensory stimulation becomes secondary in importance. Instead, the sensory details serve as a backdrop against which the intuitive associations among the details, fraught with meaning and possibilities, become the focus. Thus, the intuitive type pays less attention to the actual details in a situation and more attention to the possibilities that present themselves as a result of those details. Someone who relies on intuition is expected to be complex, analytical, creative, theoretical, and original. Indeed, correlations between intuition and scales which purport to measure these characteristics range from (.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, one of these forms of perception is

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

It is emphasized that these two ways of perceiving are 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 is more trusted than the non-preferred function. For example, whereas the sensor may experience a “hunch”, this type is less apt to trust in it than will an intuitive experiencing the same hunch.

**Differences in perception as observed in the laboratory.** Qualitative differences in perception, analogous to those identified by Jung, have been noted by independent researchers. For example, 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 solved several reasoning problems, and then described to the researchers the process through which they arrived at their 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”. Abstract directional thinkers differed from members of the other group in that they tended to concentrate on the *relations* 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 focused more on the actual physical properties of the figures than on their relation 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”. 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. That is, the problems required the individual to focus on the relations among objects, rather than on characteristics of the objects themselves. Thus, it would be expected that the intuitive would outperform the sensor. 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 information (Myers & Myers, 1980). As with perception, Jung identified two ways of drawing these conclusions; thinking (T) and feeling (F).

Thinking, according to Jung (1971), is “the psychological function which, following its own laws, brings the contents of ideation into conceptual connection with one another” (p 481). For the thinker, conclusions are drawn objectively through the “linking up of ideas by means of a concept . . . no matter whether this act [of judgment] is intentional or not” (Jung, 1971, p. 481), with the ultimate goal being truth. Thus, thinking is a very logical, objective process relying on principles of cause and effect and aimed at making impersonal decisions. The personal feelings and wishes of the thinker, or anyone else, are

irrelevant in the formation of judgments. This tendency towards logic and objectivity manifests itself in a certain coolness or personal distance in interpersonal relationships. Personality characteristics that are correlated with thinking (.40 to .57) are dominance, assertiveness, autonomy, achievement, and aggression (Myers & McCaulley, 1989, p. 208).

In contrast, feeling is “an entirely subjective process, which may be in every respect independent of external stimuli” and is a kind of judgment whose “aim is not to establish conceptual relations but to set up a subjective criterion of acceptance or rejection” (Jung, 1971, p.434). Thus, feeling involves using more personal, subjective values as a guide for making decisions and “imparts to the [perceived] content a definite *value* in the sense of acceptance or rejection (‘like’ or ‘dislike’)” (Jung, 1971, p. 434). The goal of the feeler in making decisions tends to be harmony and personal satisfaction. Characteristics exhibited by feelers are 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 percent of all women are feelers, whereas 66 percent 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.** Jung’s conceptualization of introversion (I) and extraversion (E), focuses on the direction of energy flow or interest. In the case of the former there is a “movement of interest away from the object to the subject and his own psychological processes” (Jung, 1971, p. 4), whereas for the latter there is a “movement of interest towards the object” (p. 4). It is the direction of this energy flow that will determine how and where one performs the functions of perception and judgment.

In the case of introversion, “interest does not move towards the object but withdraws from it into the subject” (Jung, 1971, p. 452). Thus, the introvert finds stimulation in the inner world of ideas and concepts. Conversely, the extravert experiences a “positive movement of subjective interest towards the object” (p. 427) and prefers the outer world of people and things. Thus, we find that “the introvert concentrates perception and judgment upon ideas” (Myers & Myers, 1980, p.7), whereas the extravert “thinks, feels, and acts in relation to the object” (Jung, 1971, p. 427) and concentrates on the environment. Personality characteristics that are correlated with introversion are a tendency to be withdrawn, quiet, silent, retiring, and 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 scale of the MBTI that differentiates information processing styles among psychological types reflects a preference for the perceiving function (P) or the judgment function (J) in the course of everyday interactions and routines. This scale was developed by Briggs and Myers as a result of their own observations. Although both functions are used adeptly, one dominates cognitive activity as it is difficult to perceive and judge at the same time.

The individual who prefers perception finds the collection of data and information most interesting and inherently rewarding. For the perceiver, the judgment function represents the termination of options, and produces a certain amount of psychological anxiety lest a decision be made in the absence of all relevant information. Thus, the perceiver tends to avoid situations that call for closure in the form of judgment or decision. 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. For the judger, situations in which many options are available can be

overwhelming and somewhat threatening. In fact, it has been found that “perception tends to be shut off as soon as [the judge 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 numerous 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 relations among, and the possibilities behind the facts attended to? When judging, will emotions and personal values be factored into the decision, or will “truth”, and objective principles have the major role? And finally, is this individual more comfortable in the inner, subjective world or the outer, objective one?

**Temperament.** The concept of temperament was introduced by Kiersey and Bates (1984) as a systematic way of describing “consistency of actions” (p. 28) among groups of individuals who are of similar, but not identical psychological types. A temperament is a particular combination of two of the original four scales described above, based on the perception function. Whereas temperaments do not offer as much information as a 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. Within any given temperament, behavior is uniform enough to allow discussion 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 to introvert. Thus, in order to organize behavioral trends in a theoretically meaningful way for the purposes of hypothesis development, these temperament descriptions are elaborated upon here.

Temperament theory begins with identifying the individual's perception preference (S-N). According to Kiersey, since this preference distinguishes 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 (N) or a sensing (S) type.

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 processed in an abstract and conceptual way. Data are evaluated and elaborated upon intuitively, with the actual details often being lost in the process. In order to most clearly differentiate among intuitive types, the relevant issue concerns 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), information is elaborated upon 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 groups of individuals, sensors (S), gather data in a concrete, direct, and literal manner. As such, the information is less subject to distortion. Therefore, the critical issue in differentiating among sensors is not *how* the evaluation is done but *what* is actually done with the data. Thus, one refers to the fourth preference scale (J-P). Information gathered by the sensor is either organized and put in order (SJ), or gathered continuously without attempts to come to closure (SP).

As mentioned above, these temperaments are useful in that there are several general behavior patterns that accompany each one. Thus, 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, information is gathered intuitively and evaluated along "a subjective criterion of acceptance or rejection" (Jung, 1971, p. 434). Thus, the relations among stimuli are continually processed in terms of their subjective value (like or dislike), with the

result that NFs are provided with information regarding their personal relationship to the world around them. Over time, this cognitive style manifests itself in a quest for *identity*. That is, these individuals continually seek information that can help them understand themselves; as such, they tend to be people oriented, and are “highly responsive to interpersonal transactions” (Kroeger & Thuesen, 1992, p. 54).

The intuitive thinker (NT), in contrast, intuitively elaborates upon perceived stimuli in a very logical, objective manner, relying on principles of cause and effect. Whereas, like the NF, the NT is driven by a need to understand the world, unlike the NF, this understanding is in terms of right and wrong, rather than like or dislike. There is a tendency to theorize and to intellectualize and, over time, this cognitive style manifests itself in a quest for *competence*. The need to understand is central to the NT’s never-ending search for competence.

The sensing judger (SJ) gathers data in a concrete, direct, and literal manner, and immediately attempts to come to closure. Due to the factual nature of sensing data, this closure is categorical and finite, rather than relational, as it is with data collected intuitively. Thus, data is classified according to its belongingness to a given category. The SJ has an amazing capacity to organize and put things in order, including “people, furniture, schedules, organizations, etc.” (Kroeger & Thuesen, 1988, p. 56). This drive to closure through classification extends to the individual’s place in the world, with the result that the SJ is extremely sensitive to the hierarchical structure of group interactions. This structure is viewed as the essence of society. Therefore, the quest of the SJ manifests itself in a need to *belong to and uphold meaningful institutions*. It is not surprising that they are characteristically dependable, and make ideal administrators (Kroeger and Thuesen, 1988).

Sensing perceivers (SPs) are 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 reality in any number of ways as they are

continually *perceiving* the environment. Often described as troubleshooters, the quest of the SP is *action* and is accompanied by a tendency to have a live-in-the-moment 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 relation between temperament and the fundamental attribution error. 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 number of attributional errors, followed closely by the two sensing temperaments. Interestingly, this study found no relation between self-monitoring and the fundamental attribution error.

These results are not surprising when viewed in the framework of psychological type. Intuitive types in general are the most likely to look for the relations 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 relations among environmental stimuli in a subjective, personal way and approaches life with a humanistic interpersonal orientation. These individuals have a natural tendency to personalize information, a process that results in a high 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. Whereas the situation itself is taken into consideration in any behavioral description of a psychological 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). Whereas 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 relation 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. Therefore, 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 relation 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 percent in the entry-level pool to just over 86 percent in the middle management pool. This number increases to 93 percent in senior managers and again to 95 percent 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 percent at the executive level. Sensors seem to thrive across the organizational hierarchy, representing approximately 78 percent at the entry level. It is interesting that this percentage drops to 66 percent 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 managerial positions, in that it is this type that is most likely to be promoted to these positions. In the workplace, sensors (S) like to concentrate on what they are doing, are generally unconcerned about what is to come, prefer results that are tangible, and would rather work with facts and figures 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) 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 (Kroegeer & 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 percent at entry level to almost 35 percent 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 were limited, and when several plausible alternative solutions existed. 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 judges (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 experienced 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 relation between psychological type, as measured by the MBTI, and leadership positions in organizations, it follows that some relation 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).

Theoretically, 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 be more likely to seek stimulation in the outer world of things and actions.

An interesting point regarding the relation between the self-monitoring scale and the MBTI is that neither the correlations between the self-monitoring scale and the S/N scale

nor the T/F scale of the MBTI were significant. That is, whereas 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.

Thus, it was suggested that the scales that are unrelated to the self-monitoring construct itself may lend some insight into the relation between self-monitoring and leadership (Walsh, 1992). As noted 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 preferences, and the corresponding differences in leadership experiences, it follows that the portion of the population that uses self-monitoring to arrive at leadership positions could be identified by their Myers-Briggs type preferences.

With this in mind, Walsh (1992) replicated the rotation-design study done by Zaccaro, Foti, and Kenny (1991), with the addition of the Myers-Briggs type theory as a predictor variable. The researcher hoped to demonstrate that the established relation between self-monitoring and leadership, is moderated by systematic differences in information processing.

Results supported the concept that leadership is indeed a phenomenon that occurs in the individual rather than the situation. Specifically, emergent leadership was found to be stable across groups and tasks. In fact, using the Social Relations Model developed by Kenny (1989), it was found that as much as 73 percent of the variance in leadership ratings were attributable to individual characteristics. This study therefore supported the findings of several earlier studies (Kenny & Zaccaro, 1983; Zaccaro, Foti, and Kenny, 1991; and Foti & Rueb, in press), and further distinguished itself by isolating the most stable variance in leadership ratings to date (previous studies reported between 33 percent and 65 percent stable variance). Thus, an individual who is perceived as a leader in one situation, is likely to be perceived as a leader in another situation.

Given the unusually high level of stability in leadership ratings, one might expect that the relation between self-monitoring and emergent leadership would have been that much easier to detect. Instead, no relation was found. Whereas these results were difficult to understand, a third hypothesis which predicted that self-monitoring would also affect rating accuracy helped to clarify the issue.

Specifically, it was predicted that self-monitoring would moderate perceptual agreement in leadership ratings. Results confirmed that only high self-monitors were in agreement with respect to who emerged as a leader. That is, there was a significant relation between the ratings of high self-monitors and the overall leadership scores of individual group members. In contrast, there was no relation between ratings made by low self-monitors and overall leadership scores.

This hypothesis was theoretically derived from the fact that leadership emergence, as defined here, *is a function of group members' perceptions*. Low self-monitors are, by definition, less successful in recognizing and interpreting social cues than are their high self-monitoring counterparts. Indeed, 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 and Tolson, 1991). Such is not the case for high self-monitors.

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

**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 affect 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 relation 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 relation 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 employees 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 employees 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 is expected to be less likely to notice and respond to the leader behaviors of others. Thus, leadership perceptions of low self-monitors may reflect subjects' idiosyncrasies, resulting in more variability in ratings, whereas high self-monitors are more systematic in their ratings.

Recall that emergent leadership has heretofore been treated as a function of perceptual agreement among group members. Given the evidence that only high self-monitors are in agreement with regard to who has emerged as a leader (Walsh, 1992), reliance on group members' perceptions as a measure of leadership emergence presents a significant problem in the further development of emergent leadership theory. Not only do the ratings of low self-monitors cloud the issue by introducing unsystematic variance, it is unclear if the agreement displayed by high self-monitors reflects accuracy in rating leadership or not. That is, high self-monitoring raters are in agreement - but what are they agreeing to? Are their ratings based on actual behaviors that have been traditionally associated with leadership, or are they responding to some other criteria entirely?

### **Objective Measures of Leadership.**

Since leadership ratings of group members are subject to perceptual biases, the necessity for an objective measure of leadership becomes clear. Such a measure would allow emergent leaders to be identified based on actual leader behaviors, independent of group members' perceptions. Furthermore, a comparison could be made with the leadership perceptions of the participants. Thus, the nature of these perceptions could be more thoroughly explored.

Stodgill (1969) demonstrated that it is possible to obtain accurate ratings of leader behaviors from independent observers. In that study, subjects viewed actors via videotape

who had been trained to display a specific set of leader behaviors that are measured by the Leader Behavior Description Questionnaire (LBDQ). Each actor emphasized a certain behavior over all others. In other words, not only were specific behaviors to be presented, but the degree to which each behavior was present, relative to others, was also manipulated. Results indicated that subjects could accurately rate which behaviors were present, and consistently rated the emphasized behavior significantly higher than other behaviors. Thus, experimentally manipulated behaviors can be accurately measured by independent observers.

Similarly, Sims and Manz (1984) demonstrated that leader behaviors could be reliably observed using videotaped recordings of leader-subordinate interactions. In questioning whether “psychometric measures of leader behavior are really a reflection of the ‘objective environment’” (p. 224), the researchers had independent raters observe a series of leader-subordinate interactions in which leader behaviors had been experimentally manipulated. Once again, it was found that independently observed ratings of leader behaviors accurately reflected the presence of actual behaviors.

### **Leader Behaviors vs. Leader Perceptions.**

Given that leadership behaviors can be accurately measured by independent raters, the question arises concerning the relation between ratings made by independent observers, and those made by participants. Specifically, does the evidence support the idea that a discrepancy exists between these two types of measures?

Ilgen and Fujii (1976) found this is indeed the case. In their study, the leadership perceptions of participating group members were compared to ratings made by independent observers. These comparisons were made across a number of different behaviors, and were measured on a variety of different scales. Results indicated that whereas the relation between the ratings of participants and those of independent observers was significantly different from zero, only 25 percent of the variance in ratings was shared by the two sets of measures.

Interestingly, when the leader's behavior toward individual group members was considered, no relation existed. That is, despite high interrater agreement on the part of independent observers regarding the leader's behavior toward any given group member, there was no correlation between these ratings and individual group members' perceptions of the leader's behavior toward themselves. Thus, only in the aggregate were actual leader behaviors congruent with leader perceptions.

The authors pointed out that previous research had assumed that differences in leader perceptions were largely due to error variance, and that by averaging these perceptions across group members, this bias was reduced. Given the degree of discrepancy when actual leader behaviors were objectively measured, it becomes clear that differences in perceived leader behaviors represent something other than error.

Lord (1977) also examined the relation between actual leader behaviors and leader perceptions. In this case, results indicated that whereas these two sets of ratings were significantly related, actual leadership behaviors and group members' perceptions of those behaviors were "by no means identical" (p.126). In fact, only one third of the variance in leadership perception ratings was a function of leader behavior. Thus, a significant amount of variance in leadership perceptions was unrelated to actual leader behavior.

In summary, the findings of the above research support the findings of Walsh (1992) insofar as they confirm that a discrepancy between actual leader behaviors and group members' perceptions of those behaviors. Despite the fact that this discrepancy has been identified, its origin remains unclear. What is clear, however, is that pursuing "the sources of member perceptions, . . . eventually leads to the need to assess *actual* leader behavior" (Ilgen and Fujii, 1976, p. 650).

## Summary and Hypotheses

In summary, the findings of Walsh (1992) suggest that the relation between self-monitoring and leadership emergence is not as straightforward as it originally appeared. Whereas the hypothesis that emergent leadership is stable across groups and tasks was supported, self-monitoring was not a predictor of that emergence. The data did, however, provide evidence that self-monitoring was related to perceptual agreement among group members with regard to who emerged as a leader. Specifically, only high self-monitoring group members manifested agreement between their ratings of other group members, and aggregate ratings of that individual. This relation was further complicated by the fact that perceptual agreement among raters was additionally moderated by psychological type.

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. Despite the fact that high self-monitors of certain psychological types agreed with each other with respect to who emerged as a leader, no evidence exists that the individual exhibited what typically are considered to be “leader behaviors”. Indeed, it could be that the leadership perceptions of these individuals were related to some other criteria entirely.

Given this background, the present study will introduce an objective measure of leadership into the original rotation design of Walsh (1992) against which leadership perceptions of group members can be compared. In this way, the present author believes that the relation between self-monitoring, psychological type, emergent leadership, and leadership perceptions can be further explored and clarified. Specifically, this study hypothesizes that:

- 1.) Leadership will be stable across the four task situations. Zaccaro et al. (1991) and Walsh (1992) demonstrated that perceptions of leadership behavior will be stable in that the same individuals will consistently receive high leadership ratings independent of task or of group membership.

**Rater Behavior.**

2.) Self-monitoring will moderate to the degree to which leadership perceptions reported by individuals are related to overall emergent leadership scores of the same rater. Recall that low self-monitors, by definition, are less successful in recognizing and interpreting social cues than are high-self-monitors. Furthermore, it has been found 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; 1991). Therefore, it is expected that the leadership perceptions reported by low self-monitors will reflect subjects' idiosyncrasies. In contrast, high self-monitors are expected to be more systematic in their ratings because they are more likely to perceive, interpret, and respond to the behaviors of the emergent leader. Thus, this hypothesis suggests that leadership ratings will be moderated by self-monitoring such that leadership perceptions for raters who are high self-monitors will be more strongly related to overall group perceptions than those of low self-monitors.

3.) The relation between raters' perceptions of leadership and corresponding emergent leadership scores will be further moderated by temperament as described by Kiersey and Bates (1984). The results of Walsh (1992) indicated that only high self-monitoring individuals who were of SJ or NF temperaments manifested perceptual consistency with respect to leadership emergence.

Recall that NF 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. Thus, the NF is driven to understand the needs of the people around them. This understanding is important in that it facilitates harmony. Therefore, the NF rater would be expected to respond most favorably to the individual who is addressing and meeting their needs, and the needs of other group members.

Although the SJ individual is much more literal in their approach insofar as their "information-gathering process is practical and realistic" (Kroegeer and Thuesen, 1988, p. 55), the SJ is driven to *belong to and uphold meaningful institutions*. Furthermore, the SJ

individual is extremely sensitive to the hierarchical structure of group interactions.

Therefore, the SJ rater would be expected to be particularly aware of the emerging roles of the group members.

Whereas NFs and SJs process information in a way that is theoretically distinct, it is expected that individuals within each group would respond in a similar manner to the behaviors of other group members. In addition, given that high self-monitors are more likely to perceive, interpret, and respond to the behaviors of others, it is expected that high self-monitoring NF and SJ raters will manifest more perceptual agreement than their low self-monitoring counterparts.

- a.) The leadership perceptions reported by high self-monitoring NF and SJ raters will be more strongly related to who has emerged as a leader than high self-monitoring NT and SP raters.
- b.) Furthermore, given that the NF rater would be most responsive to the individual who is addressing and meeting their needs and the needs of other group members, high self-monitoring NF raters will be more likely to select high self-monitors as emergent leaders.

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” (Kroeger & Thuesen, 1988, p. 54). As such, it is probable that what constitutes a “competent leader” to 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” (Kroeger & Thuesen, 1992). The needs of the situation are defined 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.

Whereas the theoretical roots of behavior of the NT and SP are distinct, it is suggested that the outcomes in terms of rating behavior would be similar. Specifically, these two groups could be expected to show less conformity, and more dispersion in what they perceive to be “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 more idiosyncratic ratings with regard to the behaviors of a given individual.

c.) The leadership perceptions reported by NT and SP raters will not be related to emergent leadership emergence.

4.) Self-monitoring will moderate the degree to which raters’ leadership perceptions are related to actual leader behaviors. High self-monitors are more successful in perceiving and responding to the behaviors of others. Thus, the ratings of leader behaviors made by high self-monitors will be more strongly related to those made by independent observers than will ratings of low self-monitors.

5.) The degree to which raters’ leadership perceptions are related to actual leader behaviors will be further moderated by temperament as described by Kiersey and Bates (1984). Recall that SJs are particularly sensitive to the hierarchical structure within any given situation. It is this structure which is, to this type of individual, the essence of society. Within any interaction, “there should be subordination and superordination, [as well as] rules which govern the interactions of members” (Kiersey and Bates, 1984, p. 41). Thus, the SJ rater is expected to respond to leaders who follow the “rules” of leadership, and exhibit behaviors which are stereotypically associated with leadership more than any other type.

a.) The perceptions of leadership behaviors of high self-monitoring SJ raters will be more strongly related to actual leader behaviors than other types.

- b.) Furthermore, given their sensitivity to the “rules” of leadership, high self-monitoring SJ raters will be more likely to select individuals demonstrating those behaviors as the emergent leader, than will their low self-monitoring counterparts.
- c.) Because the information gathering process of the SP is practical and realistic, whereas the NT processes information through their standards of competence, the perceptions of leadership behaviors reported by SP raters will be more related to actual leader behaviors than those of NT raters.

### **Emergent Leadership.**

- 6.) Given the NF’s quest for identity and their people-oriented approach, it is predicted that this temperament type will use self-monitoring as the preferred path to leadership. That is, they will lead by responding to and meeting the needs of the group members.
  - a.) Self-monitoring will predict leadership emergence only for individuals of the NF temperament type.
  - b.) When NF temperament types are rated as the emergent leaders, they will be high in self-monitoring.
- 7.) The SJ individual is extremely sensitive to the hierarchical structure of group interactions, and believes that within any interaction, “there should be . . . rules which govern the interactions of members” (Kiersey and Bates, 1984, p. 41). Therefore, it is predicted that the preferred path to leadership, for the SJ, will be through exhibiting socially accepted behaviors associated with leaders. In other words, when SJ’s are perceived as leaders, they will have “followed the rules” of being a good leader.
  - a.) Actual leader behaviors will be more predictive of leadership emergence for individuals of the SJ temperament type, than for any other type.
  - b.) When SJ temperament types are rated as the emergent leaders, they will have been rated by independent observers to have exhibited prototypical leader behaviors.

## **METHODS**

### **Subjects**

Undergraduate volunteers (189) at Virginia Tech participated as subjects. These subjects formed twenty-one groups (rotations) of nine subjects each. Two of these rotations were discarded from the analyses due to problems with video-taping. Three other rotations were removed due to missing data and used for the purpose of training independent observers in the use of the behavioral coding measure (see below). Thus, sixteen rotations were considered in the analyses. In exchange for their participation, subjects received extra credit points that counted towards their final grade in undergraduate psychology classes. 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, subjects responded to the revised Self-Monitoring Scale (Lennox & Wolfe, 1984) and the Myers-Briggs Type Indicator (Form F). Upon completion of session one, subjects signed up to return for a second session.

During the second session, subjects participated in groups of nine individuals. Each group of nine subjects will subsequently be referred to as a "rotation". Each rotation was further divided into three groups of three members each. The members of the smaller groups worked together on one of four experimental tasks. When each task was completed, subjects were "rotated" to a new group of three. Membership of the smaller groups was manipulated such that each individual participated once and only once with every other member of the rotation. Tasks were the same as those used previously in Zaccaro, Foti & Kenny (1991), Rueb and Foti (in press), and Walsh (1992). The order of assigned tasks was counterbalanced for each session.

Protocol guidelines were provided to research assistants so that each task period was standardized. 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 completed two questionnaires regarding the leadership abilities of each of the other persons within the group.

In order to establish an objective measure of leadership, group interactions were recorded via videotape. Independent observers viewed the videotaped interactions of group members. Leadership ratings of the participants were coded using a leader behavior coding scheme based on the system of category behaviors developed by Bales to code the behavior of individuals during group interactions (1976).

### **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) had found that these tasks were significantly associated with leadership.

**Manufacturing game.** At the beginning of the task, each group was given \$10,000, an 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 given the opportunity to purchase production parts (Lego blocks), from which they produced either robots, boats, or jeeps to sell back to the research assistant (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 had the opportunity to present his or her position, and a set of proposals concerning how the money should be spent. Following the presentations, group members discussed the various proposals, made decisions about how the surplus

should be spent, and wrote recommendations for the budget surplus allocation (Appendix C).

**Current social problem.** Each group considered the question, “should children who have tested HIV positive be allowed to attend school?” The group discussed all possible options and prepared recommendations, taking into account the needs of the children, parents, peers, school personnel, and community (Appendix D).

**Simple construction task.** Each 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 the members of the group that produced more moon tents than the other two groups in the rotation would receive an extra credit point. 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 were assigned to a temperament category. 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). Total raw scores for the self-monitoring scale were calculated by summing the values for each of 13 questions (question 2 and 9 were reversed scored). Internal reliability for the self-monitoring scale was checked for these data, yielding a = .81.

#### *Dependent Measures*

Leadership perceptions were measured by the General Leadership Impression scale -- or 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 scale ranging from 1 (Nothing) to 5 (Extreme Amount). Previous research has shown this scale to have high internal consistency, with a reliability of approximately .85.

A second measure of leadership perceptions required each member to evaluate each of the other group members on exhibited leadership behaviors using a modified version of the Leader Behavior Descriptive Questionnaire XII (LBDQ, Appendix I). The LBDQ uses a 5-point scale with values ranging from 1 (Never) to 5 (Always).

The LBDQ-XII was originally developed to be used by individuals in describing the leadership behaviors exhibited by supervisors. This scale can be used in any setting as long as group members have had the opportunity to observe the leader's behavior. Whereas the LBDQ-XII is composed of twelve different sub-scales, only four of these subscales were used in the present study: consideration, Initiating Structure, Persuasiveness, and Production Emphasis. These sub-scales were selected because they

had been found to be related to the types of leadership associated with the four tasks in question (Foti and Zaccaro, 1989). Reliability for the LBDQ is had been established generally at .80. Convergent validities between the LBDQ and other leadership scales had been reported at .64 (Supervisory Behavior Description Questionnaire) and .68 (Leadership Opinion Questionnaire).

The *Consideration* sub-scale and reflects “the extent to which an individual is likely to have job relationships characterized by mutual trust, respect for subordinates’ ideas, and consideration of their feelings” (Fleischman & Peters, 1962, P. 43). *Initiating Structure* focuses on the “extent to which an individual is likely to define and structure his role and those of his subordinates toward goal attainment” (Fleischman & Peters, 1962, p. 44). The *Persuasiveness* dimension is concerned with the individual’s ability to present persuasive arguments, and/or expresses strong convictions. Finally, *Production Emphasis* reflects the degree to which an individual focuses on output and successful task completion.

#### *Objective Measure of Leadership.*

In order to establish an objective measure of leadership, a set of behavioral coding scales was generated using the system of behavioral categories developed by Bales (1976) for use in interaction process analysis. For the purposes of this study, only the “positive” behavioral categories (i.e., “agrees”) were used (Appendix J), thereby avoiding the problem of coding absent behaviors. For example, a subject’s failure to offer assistance to the group was reflected in the *lack* of a positive score for the category of *agrees*, rather than in the *presence* of a negative score for the category of *disagrees*.

Bales’ categories were selected due to the fact that they allow “every act which can be observed [to] be classified in one positively defined category” (Bales, 1976, p. 35) and do not require the observer “to be evaluative in the moral, ethical sense, which require him to make judgments of logical relevance, validity, rigor, etc.” (p. 37). Furthermore, the relations of the categories to each other are such that categories 1-4 focus on Social-

Emotional Problems, and categories 5-8 constitute Task Problems. These two problem areas have been identified as two main ways of describing the relations in small group interactions, and are analogous to consideration and initiating structure that have been identified as the two main dimensions of leader behavior (Stogdill, 1974). Indeed, these are the two dimensions that have been “typically measured by the Leader Behavior Description Questionnaire (LBDQ)” (Gilmore, Beehr, and Richter, 1979, p. 166) described above. In fact, Bales’ categories have been used to test for the effects of these two dimensions in previous leadership research (e.g. Gilmore, Beehr, and Richter, 1979).

The coding scales themselves consisted of task-relevant behavioral examples for each of Bales’ categories. That is, each category was broken down into general behaviors that could be expected for each of the tasks that were rated. Behaviors for the *manufacturing game* and the *simple construction* tasks were similar enough that they could be coded from the same set of behavioral codes. Such was also the case for the *leaderless group discussion* and the *current social problem* tasks. As such, the independent observers used two different versions of the coding schemes (Appendix K).

Task-relevant behaviors were generated from the two rotations that were not used in the analyses due to problems with the videos. Whereas the problems with the videos disqualified them from analyses, their content was such that general behaviors could be determined for inclusion in the scales (e.g., a task that was partially out of focus for one rotation, was complete in the second).

Independent observers rated the behaviors of each group member via videotape. Trained observer scores were calculated by summing the number of observed behaviors coded by the independent observers within, and then across, tasks.

*Observers and Training.* The primary researcher and two undergraduate research assistants served as independent observers. The research assistants participated in data collection in exchange for course credit. All observers were trained for approximately 25 hours. Training included familiarization with the scales, coding of written scripts, and

practice coding of three rotations set aside for this purpose. The observers were prepared when they obtained three consecutive inter-observer reliability scores of 95 percent or better.

*Inter-observer agreement.* To determine whether this method resulted in reliable information, interrater agreement checks were conducted during the formal data collection period. The primary researcher independently coded behaviors for 20 percent of the videotaped interactions that had been coded by the undergraduate research assistants. Inter-observer agreement was calculated as a behavior-by-behavior percentage agreement score within each task and then across tasks. Agreement scores ranged between 81 and 100 percent within each task. Average agreement of the primary researcher with the two research assistants across tasks was 88 percent.

## Results

Descriptive statistics for this sample are presented in Table 1. This table presents summary statistics as well as the correlation matrix for self-monitoring scores, emergent leadership scores for the General Leadership Impression (GLI) scale, emergent leadership scores the Leader Behavior Descriptive Questionnaire XII (LBDQ), and the trained observer scores.

Table 1

*Descriptive Statistics (N=144)*

Variable	Self-Monitoring	GLI	LBDQ	Trained Observer Score	<i>M</i>	<i>SD</i>
Self-Monitoring	1.00				55.38	7.12
GLI	-.04	1.00			18.98	1.81
LBDQ	-.02	.81*	1.00		131.57	14.13
Trained Observer Score	.06	.61*	.56*	1.00	.149	40.17

\*  $p < .0001$

In order to test for stability in leadership perceptions, composite scores were calculated for the GLI scale and the LBDQ. Composite scores from the GLI scale were computed by assigning values to each of five items, using a 5-point 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 totaled to yield composite scores ranging from 5 to 25 points. In a similar manner, each of the 40 items for the LBDQ was scored using a 5-point scale with values ranging from 1 (Never) to 5 (Always). Item values were totaled to yield composite scores ranging from 40 to 200 points.

Each composite score reflected the leadership ratings of a given group member made by another member of the group. Thus, for each scale, eight composite scores were associated with each subject, reflecting the leadership perceptions of each of the other group members in the rotation.

The amount of stable 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: 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 an individual's general tendency to rate someone as a leader. Finally, the interaction term is an error term which refers to the variance that stems from the interaction of the rater and the ratee.

To look for stability across tasks, the ratee and rater variance are further partitioned into their stable and unstable components. Stable *ratee* variance indicates the extent to which an individual is seen as a leader *across tasks*. Thus, some subjects would consistently receive high ratings across tasks, whereas others would receive low ratings across tasks. Stable *rater* variance examines the tendency of a rater to see others as high (or low) on leadership *across tasks*. In general, stable variance is predictive in so far as it indicates the degree to which perceived performance (or ratings) in one task is related to perceived performance (or ratings) on another.

In contrast, unstable variance reflects fluctuations in the behavior of the ratee and rater. For example, unstable *ratee* variance indicates that the leadership ratings received by an individual change from task to task. The Social Relations Model further partitions unstable variance so that *true* unstable variance, or that not related to random error, is isolated. Thus, true unstable *ratee* variance reflects the extent to which differences in the leadership ratings across tasks were due the subject's being perceived as a leader in one task but not in another.

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 in the same set of ratings. Thus, it represents the extent to which leadership is stable across different tasks. Lambda-squared was assessed using *F*-tests in order to determine the significance of the amount of variance in the ratings represented by ratee effects.

In this study, GLI ratings and LBDQ ratings were partitioned using ROTO and the Social Relations Model in order to test for stability in leadership emergence. Results indicated that 65 percent of the variance in GLI ratings represented stable rater effects,  $t(15) = 5.73, p < .01$ . For the LBDQ, 61 percent of the variance represented stable rater effects,  $t(15) = 6.10, p < .01$ . The proportion of variance due to a rater bias was 43 percent for the GLI scale,  $t(15) = 3.69, p < .01$ , and 43 percent for the LBDQ,  $t(15) = 3.58, p < .01$ .

In order to test Hypothesis 1, it was necessary to examine the proportion of rater 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,  $\lambda^2 = .84, F(128, 256) = 6.57, p < .01$ . Similarly,  $\lambda^2$  was significant for the LBDQ ratings,  $\lambda^2 = .82, F(128, 256) = 5.69, p < .01$ . Thus, Hypothesis 1 was supported. Perceptions of leadership behaviors were stable across tasks, such that the same individuals consistently received higher leadership ratings independent of task or of group membership.

Following this analysis, the remaining hypotheses were tested using deviation scores, that is scores that had been adjusted by rotation. For both the GLI and the LBDQ, *unadjusted* leadership ratings for each subject were computed by averaging the composite scores assigned by the other group members. *Unadjusted* trained observer scores consisted of the total number of observed behaviors that were coded by independent observers across tasks.

*Adjusted* emergent leadership scores were calculated for the GLI, the LBDQ, and the trained observer scores, using the unadjusted leadership scores described above. Adjusted leadership scores were calculated by subtracting the individual's unadjusted leadership scores from the rotation's average unadjusted leadership score. Thus, the *adjusted* leadership scores comprised 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. The results from the self-monitoring scale were also adjusted for mean differences by rotation.

Hypothesis 2 dealt with the degree to which leadership ratings made by individual raters were related to overall emergent leadership scores. This hypothesis was first tested in terms of *perceptual consistency* in leadership perceptions. Perceptual consistency “references proportional consistency of variance among raters and is correlational in nature” (Kozlowski and Hattrup, 1992, p. 162). Thus, this issue focuses on the degree to which leadership perceptions reported by a given *individual* are related, in terms of rank order, to overall emergent leadership scores of the same ratees.

Specifically, each subject (as a *rater*) rated each of the other eight subjects in the rotation on leadership. In addition, as described above, each subject (as a *ratee*) received an emergent leadership score which expressed that subject’s overall leadership as perceived by the other members of the rotation (adjusted leadership score). *Perceptual consistency* focused on whether or not the ratings given by certain individuals were more closely related to overall emergent leadership scores than were the ratings made by other individuals. In this case, the question was whether the ratings given by *high* self-monitoring *raters* were more strongly related to the emergent leadership scores of same *ratees* than were the scores given by *low* self-monitoring *raters*.

In order to test this hypothesis, self-monitoring scores were divided into two categories, high and low self-monitors, using a median split on the continuous scores. Hypothesis 2 was first tested using a sub-group analysis. For both high and low self-monitoring raters, the means of the ratings made by an individual *rater* were correlated with the average of the corresponding emergent leadership scores.

Recall that emergent leadership scores represented the composite leadership perceptions of all of the members of the rotation. This hypothesis suggested that high self-monitors would be more systematic in their ratings than low self-monitors due to the fact that the former are more successful in recognizing and interpreting social cues. Thus it was

predicted that the overall emergent leadership ratings would be more influenced by high self-monitoring raters because there would be less variability and more consistency in their ratings. As a result, the ratings of high self-monitoring raters were expected to be more strongly related than the ratings of low self-monitors to the emergent leadership scores of the corresponding rates. Results are presented in Table 2. For the GLI, correlations for both high and low self-monitors were significant and almost identical. For the LBDQ ratings, neither relation was significant.

Table 2

*Correlations Between Mean Ratings Given by Individual Raters and Corresponding Emergent Leadership Scores*

Raters	N	<i>r</i>	<i>p</i>
GLI			
High Self-monitors	83	.32	.003
Low Self-monitors	61	.31	.02
LBDQ			
High Self-monitors	83	-.01	.94
Low Self-monitors	61	.12	.36

The hypothesis that consistency in leadership perceptions would be related to self-monitoring was also tested by means of a hierarchical regression model with self-monitoring entered as a continuous variable. Results of these analyses were consistent with those of the sub-group analyses. First, it was established that the GLI ratings reported individual raters consistently accounted for the same amount of variance in emergent leadership ratings ( $R^2 = .097$ ). This same  $R^2$  was exhibited when GLI scores were the only predictor, when GLI scores were entered with self-monitoring, and when they were entered with an interaction term between the two variables. In terms of self-monitoring's functioning as a moderator, it was not a significant predictor of emergent leadership scores, nor was the interaction between self monitoring and the GLI ratings reported by individual raters. For the LBDQ, self-monitoring, LBDQ ratings of leadership

perceptions reported by individual raters, and the interaction of the two were not significant predictors of emergent leadership scores.

The absence of a relation between ratings reported on the LBDQ by individual raters, and the emergent leadership scores for the same ratees led to a further examination of this hypothesis in terms of *consensus* in leadership ratings. That is, the correlational tests of this hypothesis may have lacked power due to a restriction of range in the variance of leadership ratings among judges - “a situation that occurs when agreement among judges across a set of common targets is high” (Kozlowski and Hattrup, 1992, p. 163). Thus, in contrast to *consistency* in leadership perceptions, *consensus* in leadership perceptions examines the level of agreement *within a group* of raters. While consensus in leadership ratings does not provide information concerning individual rating behavior, it is “useful for examining normative or collective response tendencies” (p. 162).

The issue of consensus among raters in leadership perceptions was explored by examining the relation between ratings given by high and low self-monitoring raters and the emergent leadership scores of the corresponding ratees. Deviation scores were created in which the average of the ratings given by each rater was lessened by the average of the emergent leadership scores of the corresponding ratees. *A**t*-test was run to see if the mean of the deviation scores for high self-monitors was significantly different from the mean of the deviation scores for low self-monitors. Recall that Hypothesis 2 predicted that the ratings of low self-monitors would not be as strongly related to overall emergent leadership scores as the ratings of high self-monitoring raters. Thus, it was expected that the mean of the deviation scores for low self-monitors was predicted to be significantly different from that of high self-monitors. Results are presented in Table 3.

For GLI ratings, the mean of the deviation between ratings given by the high self-monitoring raters and the emergent leadership scores of the corresponding ratees was not significantly different from the mean of the deviation scores for the low self-monitoring raters. For the LBDQ, the means of the deviation scores for high and low self-monitors

were significantly different. Thus, for the LBDQ measure, the hypothesis that ratings of low self-monitors would not be related to overall emergent leadership scores was supported in that the deviation scores of low self-monitors as a group ratings were significantly different from the deviation scores of high self-monitoring raters as a group.

Table 3

*T-tests Between Mean of the Deviations Between Ratings given by High and Low Self-Monitors and Emergent Leadership Scores of Corresponding Ratees.*

Scale	Mean deviation high self-monitors	Mean deviation low self-monitors	(df)	t
GLI	.13	-.18	142	-.96
LBDQ	1.8	-4.6	139.2	-2.1*

\*  $p < .05$

In order to test Hypothesis 3a, perceptual consistency between individual ratings and overall emergent leadership scores was further examined in terms of temperament. Thus, a sub-group analysis was conducted in which the correlations between the means of the ratings made by high self-monitoring *raters* were correlated with the average of the corresponding emergent leadership scores for each of the four temperament types. Results of these analyses are presented in Table 4. None of the correlations were in the expected direction. That is, the correlations for high self-monitoring NF and SJ raters were not significant for either the GLI or the LBDQ. In addition, the correlation for high self-monitoring NT raters was significant for the GLI measure. According to the hypothesis, NT raters should not have manifested consistency in leadership perceptions, independent of self-monitoring level.

Hypothesis 3b was tested using a matched *t*-test. Specifically, the ratings given by high self-monitoring NF raters were tested to see if the mean ratings given to high self-monitoring *ratees* (19.78) was significantly different from the mean ratings given to low self-monitoring *ratees* (19.55). Results indicated that there was no significant difference between the means,  $t = .19$ ,  $(df) = 23$ .

Table 4

*Correlations Between Mean Ratings Given by Individual Raters and Corresponding Emergent Leadership Scores*

High self-monitoring raters	<i>N</i>	<i>r</i>	<i>p</i>
GLI			
NT	16	.56	.03
NF	24	.22	.29
SP	13	.04	.89
SJ	30	.23	.23
LBDQ			
NT	16	.18	.51
NF	24	-.02	.92
SP	13	.38	.20
SJ	30	.04	.85

Hypothesis 3c was tested by looking at the correlations between the means of the ratings made by individual *raters* and the average of the corresponding emergent leadership scores for each of the four temperament types without regard to self-monitoring level. Results for these analyses are presented in Table 5. Again, none of the correlations were in the expected direction. For the GLI measure, correlations were significant for NT and SJ raters. Whereas, it had been predicted that NT raters would not manifest consistency between their ratings and overall emergent leadership scores, expectations were that consistency in leadership perceptions for SJ raters would be related to self-monitoring (Hypothesis 3a). In the case of the LBDQ, none of the correlations were significant. Thus, the hypothesis was not supported.

As with Hypothesis 2, Hypothesis 3a was further examined in terms of consensus between ratings of high and low self-monitors and emergent leadership scores using deviation scores. Thus, for high and low self-monitoring raters, *t*-tests were run, by type, to see if the mean of the deviation between leader ratings given by high self-monitors of certain types and the mean of the corresponding emergent leader scores was significantly

Table 5

*Correlations Between Mean Ratings Given by Individual Raters and Corresponding Emergent Leadership Scores*

Raters	N		<i>r</i>	<i>p</i>
GLI				
NT	23		.49	.02
NF	44		.24	.12
SP	24		.20	.35
SJ	53		.29	.04
-----				
LBDQ				
NT	23		.03	.90
NF	44		.02	.92
SP	24		.39	.06
SJ	53		.11	.42

different from the deviation scores of low self-monitors of certain types. Results for these analyses are presented in Table 6. None of the results were as expected. With the exception of the LBDQ ratings of NT raters, the mean of the deviation scores of high self-monitoring raters and the mean of the deviation scores for low self-monitoring raters were not significantly different from each other. Thus, this hypothesis was not supported.

The fourth hypothesis examined the relation between perceptions of leader behaviors and actual leader behaviors. As such, this hypothesis focused on the LBDQ ratings since these ratings were made based on the degree to which certain behaviors were present. Consistency in rating behaviors was defined correlationally as the degree to which the LBDQ ratings of a given *rater* were related to the trained observer scores of the corresponding *ratees*.

In order to test Hypothesis 4, high and low self-monitors were again classified using a median split on the continuous scores. Hypothesis 4 was first tested using a sub-group analysis in order to explore the issue of consistency in the rating of leader behaviors. Specifically, it was predicted that high self-monitors would show consistency in their

Table 6

*T-tests Between Mean of the Deviations Between Ratings given by High and Low Self-Monitors, by Type, and Emergent Leadership Scores of Corresponding Ratees*

Raters	Mean deviation high self-monitors	Mean deviation low self-monitors	(df)	t
GLI				
NT	-1.02	-.45	21	.86
NF	.42	-.31	42	-1.24
SP	.10	-.03	22	-.17
SJ	.53	-.05	51	-1.06
LBDQ				
NT	-.69	-12.7	21	-2.14*
NF	-3.12	-5.13	33.3	-.29
SP	5.18	-.38	22	-.78
SJ	5.67	-3.62	49.7	-1.87

\* p < .05

ratings in terms of a proportional relation between the number of behaviors perceived by a given individual, and the number of behaviors coded by trained observers. For both high and low self-monitoring raters, the means of the LBDQ ratings made by individual *raters* were correlated with the average of the trained observer scores for the corresponding *ratees*. Results of these analyses are presented in Table 7. Neither the correlation for the high nor the correlation for the low self-monitoring raters was significant. Thus, the hypothesis that high self-monitors would be more consistent in rating actual leader behaviors was not supported by correlational analysis.

As in Hypothesis 2, consistency was also tested using hierarchical regression, leaving self-monitoring as a continuous variable. Once again, no further information was provided by this analysis. That is, self-monitoring, the perceptions of leadership behaviors reported by individual raters, as well as the interaction between the two were not significant predictors of actual leader behaviors as coded by independent observers.

Table 7

*Correlations Between Mean LBDQ Ratings Given by Individual Raters and the Trained Observer Scores of Corresponding Ratees*

Raters	N	r	p
High self-monitors	83	.01	.93
Low self-monitors	61	.07	.60

In order to test for consensus, the fourth hypothesis was further explored by examining the deviation scores between high and low self-monitors. It was suggested that low self-monitors, as a group would report fewer behaviors than were coded by trained observers. Thus, a *t*-test was run to see if the mean of the deviation between LBDQ ratings given by high self-monitoring *raters* and the mean of the trained observer scores of the corresponding *ratees* was significantly different from the mean of the deviation scores for low self-monitoring raters. It was expected that the deviation between the perceptions of leader behaviors reported by low self-monitors and the trained observer scores for the corresponding ratees would be greater than, and significantly different from, that of high self-monitoring raters. Results are presented in Table 8.

The mean of the deviation between ratings reported by low self-monitoring raters and the trained observer scores was significantly different from the mean of the deviation scores for high self-monitoring raters. Thus, Hypothesis 4 was partially supported in terms of consensus in that the deviation between perceived behaviors reported by low self-monitors, as a group, and number of behaviors coded by trained observers was significantly different from the mean of the deviation scores for high self-monitors.

In the fifth hypothesis, the issue of consistency in rating leader behaviors was further explored in terms of the four temperament types. Hypothesis 5a was initially examined using a sub-group analysis to test for consistency in ratings of perceived leader behaviors and actual leader behaviors. For each of the four temperament types, a correlation was

Table 8

*T-tests Between Mean of the Deviations Between LBDQ Ratings given by High and Low Self-Monitors and Ratings of Trained Observers.*

Scale	Mean deviation high self-monitors	Mean deviation low self-monitors	(df)	t
LBDQ	.24	-.33	141.7	-2.6*

\* p < .05

tested, for both high and low self-monitoring raters, between the mean of the LBDQ ratings made by certain individual *raters* and the average of the trained observer scores for the corresponding *ratees*. Results of these analyses are presented in Table 9. None of the correlations were significant.

Table 9

*Correlations Between Mean LBDQ Ratings Given by Individual Raters and the Trained Observer Scores of Corresponding Ratees*

Subjects	N	r	p
High self-monitors			
NT	16	.07	.79
NF	24	.06	.77
SP	13	.08	.79
SJ	30	-.15	.44
-----			
Low self-monitors			
NT	7	.07	.89
NF	20	-.07	.76
SP	11	.40	.23
SJ	23	-.001	.99

The fifth hypothesis was further explored in terms of consensus in rating leader behaviors by examining the deviation between ratings given by a particular individual and the trained observer scores for the corresponding ratees. For each of the four temperament types, a *t*-test assessed whether or not the mean of the deviation between LBDQ ratings

given by both high and low self-monitoring *raters* and the mean of the trained observer scores of the corresponding *ratees* were significantly different from each other. Results are presented in Table 10. With the exception of NT raters, none of the *t*-tests were significant. Thus, the hypothesis was not supported.

Table 10

*T-tests Between Mean of the Deviations Between LBDQ Ratings given by High and Low Self-Monitors, by Type, and Ratings of Trained Observers.*

Raters	Mean deviation high self-monitors	Mean deviation low self-monitors	(df)	<i>t</i>
NT	.32	-.98	21	-2.87*
NF	.22	-.18	42	-.87
SP	.51	-.09	22	-1.21
SJ	.12	-.38	51	-1.21

\*  $p < .005$

Hypothesis 5b tested the relation between the leadership ratings given by high self-monitoring SJs and the trained observer scores of the people that they rated. As a comparison point, the correlation was also tested for low self-monitoring SJ raters. Results for these analyses are presented in Table 11.

Table 11

*Correlations Between the Leadership Ratings Given by a Rater and the Corresponding Trained Observer Score Ratings*

Subjects	N	<i>r</i>	<i>p</i>
High self-monitoring SJ raters			
GLI	240	.23	.05
LBDQ	240	.13	.05
-----			
Low self-monitoring SJ raters			
GLI	184	.33	.05
LBDQ	184	.21	.05

The relation between perceptions of leader behaviors and the trained observer scores of the corresponding ratees was significant for both high and low self-monitoring SJ raters. In fact, the correlations for the low self-monitoring raters were higher than the analogous correlations for the high self-monitoring raters. These differences were tested using a Fisher *r*-to-*Z* transformation to see if, in fact, they were significant. Results indicated that they were not. The hypothesis that high self-monitoring SJ raters would be more accurate than their low self-monitoring counterparts in rating leader behaviors was not supported.

In order to test hypothesis 5c, a *t*-test was run to determine if there was a significant difference between LBDQ ratings given by SP and NT raters and the trained observer scores of the corresponding ratees, without regard self-monitoring level. Results for these analyses are presented in Table 12. The results for neither the SP nor the NT raters were significant. Thus, the hypothesis which suggested that SP raters would be more accurate than NT raters was not supported.

Table 12

*T*-tests Between Mean LBDQ Ratings Given by Individual Raters and Average of the Trained Observer Scores of Corresponding Ratees

Raters	Mean individual ratings	Mean trained observer scores	( <i>df</i> )	<i>t</i>
NT	-.28	-.21	44	-.33
SP	.14	-.09	46	.82

Hypothesis 6 was tested using sub-group analysis. That is, for both the GLI and LBDQ, Pearson’s correlations were calculated between adjusted leadership scores and self-monitoring for each of the four temperament types. Results from these analyses are presented in Table 13. None of these correlations were significant. Thus, self-monitoring was not found to be related to emergent leadership.

Hypothesis 6b was tested by grouping subjects into emergent leaders and non-leaders based on their adjusted leadership scores (for both the GLI and the LBDQ). If the adjusted leadership score for an individual was positive (indicating that their leadership raw score

Table 13

*Correlations Between Emergent Leadership Scores and Self-Monitoring*

Subjects	N	GLI and Self-Monitoring		LBDQ and Self-monitoring	
			<i>r</i>		<i>r</i>
NT	23		.009		.16
NF	44		-.17		-.07
SP	24		.10		.08
SJ	53		-.06		-.12

Note. None of the above correlations were significant.

was above the rotation mean) the subject was considered an emergent leader. If the adjusted leadership score for an individual was negative (indicating that their leadership raw score was below the rotation average) the subject was classified as a non-leader.

*T*-tests between these two groups determined whether or not the mean of self-monitoring scores of the leaders was significantly higher than that of non-leaders. Results of these analyses are presented in Table 14. For the GLI, results indicated that the differences in the means for self-monitoring between leaders and non-leaders were not significant for any of the temperament types. For the LBDQ, results indicated that the differences in the means of self-monitoring levels between leaders and non-leaders was significant only for the SP rates.

Hypothesis 7 suggested that actual leader behaviors would be more strongly related to leadership emergence for individuals of the SJ temperament type than for any other temperament type. This hypothesis was tested by calculating a correlation between emergent leadership scores (GLI and LBDQ) and trained observer scores. The correlations were then examined to determine if, indeed, the relation for SJ rates was stronger than for other temperament types. Results of the correlation analyses are presented in Table 15. Each of the correlations was significant. The two most disparate correlations were tested using a Fisher *r*-to-*Z* transformation to see if, in fact, they were significantly different from each other. Results indicated that they were not.

Table 14

*T-tests of Mean Self-Monitoring Scores Between Leaders and Non-Leaders*

Raters	Mean self-monitoring score: leaders	Mean self-monitoring score: non-leaders	(df)	t
GLI				
NT	56.00	59.31	21	-1.006
NF	57.15	54.50	42	1.45
SP	52.56	55.47	22	-1.58
SJ	53.90	54.79	51	-3.81
LBDQ				
NT	55.75	58.84	21	-.77
NF	56.67	55.04	42	.82
SP	52.11	55.73	22	-2.03*
SJ	54.93	53.60	51	.57

\* p &lt; .05

Table 15

*Correlations Between Leadership Emergence Scores and Trained Observer Scores*

Subjects	N	r	p
GLI			
NT	23	.57	.005
NF	44	.57	.0001
SP	24	.69	.002
SJ	53	.62	.0001
LBDQ			
NT	23	.56	.005
NF	44	.52	.0003
SP	24	.56	.005
SJ	53	.57	.0001

Hypothesis 7b further examined the relation between emergent leadership and actual leader behaviors by testing this relation for emergent leaders and non-leaders. As in Hypothesis 6b, subjects were grouped into emergent leaders and non-leaders based on their adjusted leadership scores (for both the GLI and the LBDQ). The relation between emergent leader scores, and actual leader behaviors was tested by type to see if, as

expected, SJ leaders displayed the strongest relation between these two variables. Results for these analyses are presented in Table 16. The hypothesis was not supported for emergent leaders as defined by either the GLI or the LBDQ. Instead, among the leaders, the relation existed for only SP ratees on the GLI and NT ratees on the LBDQ. Furthermore, the relation was significant for SJ ratees who were *non*-leaders. Thus, the hypothesis was not supported.

Table 16

*Correlations Between Emergent Leadership Scores and Trained Observer Scores*

Ratees	Leaders		Non-leaders	
	<i>N</i>	<i>r</i>	<i>N</i>	<i>r</i>
GLI				
NT	16	.29	7	-.57
NF	24	.31	20	.23
SP	15	.56*	9	.18
SJ	24	.19	29	.56**
LBDQ				
NT	19	.47*	4	-.34
NF	25	-.17	19	.17
SP	15	.23	9	.58
SJ	25	-.06	28	.64**

\*  $p < .05$

\*\*  $p < .005$

## Discussion

The present study supported the concept that leadership is a quality that is stable and attributable to individual characteristics. Analyses using the Social Relations Model developed by Kenny (1989) indicated that stable variance exists in leadership perceptions across group membership and task requirements. These data offer further support to the findings of several earlier studies (Kenny and Zaccaro, 1983; Zaccaro, Foti, & Kenny, 1991; Rueb and Foti, in press; and Walsh, 1992). Thus, it appears that leadership is indeed a phenomenon that occurs in the individual rather than in the situation. More specifically, the degree to which an individual is perceived to be a leader is likely to remain constant across situations.

Given that leadership perceptions are stable, it is interesting to note (see Table 1) that the relation between the two measures of leadership perceptions (GLI and LBDQ) were more strongly related to each other, than either was to the measure of actual leader behaviors (trained observer scores). Recall that this measure was generated by independent observers, who simply recorded the presence of leader behaviors as captured on videotape. In contrast, both the General Leadership Impression (GLI) scale and the Leader Behavior Descriptive Questionnaire XII (LBDQ) require a certain amount of subjective judgment on the part of the rater. Specifically, GLI ratings are aimed at macro-level impressions of leadership, whereas the LBDQ focuses on the perceived presence of particular kinds of behaviors. In both cases, the raters report their perceptions of an individual's performance after the fact.

Indeed, evidence such as this led Lord (1985) to question the definition of behavioral accuracy itself in terms of LBDQ ratings. It was noted that the apparent accuracy on the LBDQ "seems to have been produced by a cognitive simplification of raters that involved integrating behaviors around a salient cognitive category - leader" (p. 67). That is, behavioral manifestations of leadership *are* related to the accurate rating of a ratee in terms of their general classification as "leader". It was suggested, however, that the actual

presence of behaviors are not themselves stored in memory, but are inferred at the time of rating from the general impression of the ratee. Thus, while ratings on both the GLI and LBDQ are related to the presence of actual leader behaviors, it is expected that they would be more strongly related to each other insofar as the latter is generated from the former.

Given this, one might well question what is contributing to variance in leadership perceptions other than the actual presence of leader behaviors. In an attempt to answer this question, the present study examined the role of self-monitoring with regard to issues of consistency and consensus in terms of leadership perceptions as well as in rating accuracy.

#### *Rater behavior*

Hypothesis 2 predicted that self-monitoring would moderate the degree to which the ratings of an individual rater were related to overall leadership perceptions as assessed by the group as a whole. This hypothesis was theoretically derived from the fact that leadership emergence, as defined here, is a function of group members' perceptions. Thus, a lack of agreement in those perceptions among raters could be one source of emergent leader score variability that could not be accounted for by actual leader behaviors.

Because low self-monitors are less successful in recognizing and interpreting social cues than are their high self-monitoring counterparts, it was expected that the leadership perceptions of low self-monitors would reflect subjects' idiosyncrasies, resulting in more variability in ratings. In contrast, it was predicted that high self-monitors as a group would be more systematic in their ratings, demonstrating less variability and more agreement. Therefore, the hypothesis suggested that *overall* leadership ratings would be more influenced by the ratings of high self-monitors.

In fact, tests of this hypothesis in terms of consistency did not support this expectation. For the GLI, the correlations for both high and low self-monitors were significant, but not different from each other. This result was surprising in light of the fact that Walsh (1992) had found no significant relation for low self-monitoring raters. There

were no significant correlations for either high or low self-monitoring raters for the LBDQ.

This hypothesis was further examined in terms of consensus by testing for mean differences among the deviation between ratings given by individual raters and the emergent leader scores of the corresponding rates. Support for the hypothesis was found insofar as the mean of the deviation scores for low self-monitoring raters was significantly different from that of high self-monitoring raters on the LBDQ. Thus, for this measure, the deviation between leadership perceptions of low self-monitoring raters, as a group, and overall emergent leadership scores were significantly different from that of high self-monitoring raters, as a group. In addition, it was noted that the mean of the deviation for low self-monitoring raters was negative.

This finding is particularly interesting when viewed within the theoretical framework of self-monitoring. Recall that the LBDQ is a measure of perceived leader behaviors. The present findings indicated that low self-monitoring raters as a group, reported *fewer* leader behaviors than the overall emergent leadership scores suggest were present. The question regarding whether or not they report fewer behaviors than were *actually* present was addressed as part of the fifth hypothesis.

Hypothesis 4 predicted that self-monitoring would moderate the degree to which reports of leadership perceptions were related to actual leader behaviors. As was described earlier, tests of this hypothesis focused on perceived leadership behaviors as indicated on the LBDQ. The question was concerned with the degree to which ratings made by high and low self-monitors were related to the presence of actual leader behaviors: the ratings made by a particular rater were compared to the trained observer scores of the corresponding rates.

Correlational analyses did not support the hypothesis in terms of consistency. However, tests of mean differences among the deviations between the variables in question indicated that the mean of the deviation between the ratings made by low self-

monitors and the trained observer scores of the corresponding ratees was significantly different from the mean of the deviation scores for high self-monitoring raters.

Furthermore, the mean deviation score for low self-monitors was negative, indicating that low self-monitoring raters as a group did indeed report fewer behaviors than were actually present.

In light of these results, the present study lent partial support to the concept that self-monitoring acts as a moderator in terms of the degree to which leadership perceptions reported by individual raters are related to group perceptions as well as to the presence of actual leader behaviors. This support manifested itself, not simply as unsystematic variance on the part of low self-monitoring raters, but rather in the systematic under-reporting of the presence of leader behaviors on the LBDQ. Given the fact that low self-monitors, by definition, are less successful in recognizing and interpreting social cues in general, this finding is especially relevant. That is, the present data suggested that, in particular, low self-monitoring raters as a group are less successful in recognizing and interpreting leadership behaviors.

Hypotheses 3 and 5 further examined these issues in terms of the four temperament types. Several predictions had been made with respect to raters of particular temperaments reporting leadership perceptions that were more strongly related to group perceptions of leadership as well as actual leader behaviors. None of the relations was as expected.

For example, Hypothesis 3 suggested that the leadership perceptions of high self-monitoring NF and SJ raters would be more strongly related to group perceptions of leadership with regard to who had emerged as a leader than would high self-monitoring NT and SP raters. This hypothesis was based on the findings of Walsh (1992) which indicated that such was indeed the case. The present study failed to replicate these findings.

Moreover, there was a significant difference between the means of the deviation scores between LBDQ ratings given by individual raters and overall emergent leadership

scores for NT raters only. Therefore, it would appear that the lack of consensus found for low self-monitors in Hypothesis 2 stemmed in large part from the ratings of NT raters.

Hypothesis 5 suggested that the perceptions of leader behaviors reported by high self-monitoring SJ raters would be most strongly related to actual leaders behaviors coded by independent observers, and that the perceptions reported by SP raters would be more strongly related than those of NT raters (without respect to self-monitoring level). None of the correlational tests showed any type to manifest consistency between their perceptions of leader behaviors and actual behaviors exhibited. This was not surprising, however, given the results of Hypothesis 4.

Tests for consensus in terms of mean differences in deviation scores indicated that only low self-monitoring NT raters as a group reported fewer leader behaviors than were actually present according to trained observers. This finding further suggests that, as in the case of Hypothesis 3, the significant difference between the means of the deviation between perceived leader behaviors and those coded by independent observers for high and low self-monitors found in the fourth hypothesis stemmed primarily from NT raters.

In summary, the hypotheses concerning rater behavior met with varying degrees of success. The failure of the present study to replicate the findings of Walsh (1992) was disturbing. Results from the analyses using the GLI ratings indicate that the sample in the present study behaved differently than did the sample in Walsh (1992). Specifically, high and low self-monitors did not differ significantly in the degree of consistency between their leader perceptions and the emergent leader perceptions of the rotation group. In Walsh (1992), the relation for low self-monitors was not only lower, it was not significant ( $r = .12$ ). Furthermore, the relation for the high self-monitors was not significantly different from that of the present study ( $r = .28, p < .05$ ).

It is certainly possible that findings of either Walsh (1992) or the present study represent Type I error. Indeed, the sample size of the present study is larger ( $n = 144$  vs.  $n = 108$  in Walsh, 1992), suggesting that had the predicted relations been present, they

should have been easier to detect. Furthermore, the sample size of low self-monitors in the earlier study ( $n = 51$  vs.  $n = 69$  in the present study) was large enough to suggest that the relation would have manifested itself had it existed.

The predicted relations between high and low self-monitors with respect to consensus concerning group perceptions of emergent leadership and actual leader behaviors did exist in the LBDQ ratings (not used in Walsh, 1992). Sub-group analysis indicated that this relation was further moderated by type, but this effect was not as predicted. Whereas it is certainly possible that the findings of either Walsh (1992) or the present study represent Type I error, with respect to the relation among types, another explanation may lie in the measure itself. That is, the LBDQ may operate differently with respect to types, than does the GLI.

Recall that the hypotheses in question were only supported in terms of *consensus* through tests on the means of the deviation between the variables in question.

Correlational analyses for the LBDQ continually found no linear relation among the variables. In contrast, previous studies which have identified relations among these variables using the GLI have done so with correlational analyses. Thus, it seems that evidence exists to suggest that the LBDQ does indeed operate differently than the GLI. That it may, in addition, operate differently according to type may be due to qualitative differences between the two measures.

Differences in temperament type represent differences in information processing. The LBDQ requires the rater to make judgments with respect to particular behaviors that were present during an interaction. In contrast, the GLI asks for leadership perceptions on a more general level. In addition, the LBDQ is a more labor intensive scale, insofar as it is much longer (40 items) than the GLI (5 items). Thus, the differences in information processing among the four temperaments may lead certain types (in this case low self-monitoring NTs) to react differently to the scale itself.

It is suggested that future research should examine the possibility of differential functioning among the four types when completing both the GLI and the LBDQ. This question is particularly relevant when one remembers that the underlying idea behind Jung's theory is that in every situation, the individual must perceive the situation and then make some sort of judgment based on these perceptions. The temperaments were developed with the purpose of being able to theoretically distinguish individuals along the lines of these two activities. The issue at hand is that perception and judgment are not only involved in the *development* of leadership perceptions, but may interact with a given scale requiring the *assignment of ratings* of those perceptions. The implications of differential functioning among the types would be extensive, given the popularity of the GLI and LBDQ in leadership research in general.

### *Emergent Leadership*

Hypothesis 6 focused on self-monitoring as a predictor of emergent leadership for individuals of the NF temperament type. It had been expected that the NF's quest for identity and their emphasis on harmony in human interactions would make the NF particularly likely to be sensitive to the needs of other group members when emerging as a leader. That is, they would lead by responding to and meeting the needs of the group members.

Results indicated that this was not the case. In fact, correlational analysis showed that self-monitoring was not related to emergent leadership for any of the four temperaments. Tests of the mean differences in self-monitoring level between leaders and non-leaders showed that there were no differences for the NF ratees. Instead, only SP ratees exhibited a significant difference between leaders and non-leaders, as classified by the LBDQ. That is, non-leader SPs reported lower levels of self-monitoring than did leader SPs.

The failure of the present study and Walsh (1992) to find a relation between self-monitoring and emergent leadership raises an important question with regard to the role of

self-monitoring in predicting leadership emergence. Zaccaro, Foti, and Kenny (1991) was the first study to test the relation between self-monitoring and emergent leadership across tasks and group members (a rotation design). The selection of this construct was due in part to the findings of Kenny and Zaccaro (1983) which “suggested as a characteristic of leaders the capability to recognize different group requirements (social perceptiveness) and respond accordingly (behavioral flexibility)” (Zaccaro, Foti & Kenny, 1991, p. 312). The results of Zaccaro et al. as well as Rueb and Foti (in press) offered support for this hypothesis using the self-monitoring construct..

One of the reasons that the present data, as well as those of Walsh (1992), did not support the hypothesis that self-monitoring is related to emergent leadership, may lie in the fact that some third variable is moderating the relation. It is suggested that the identity of this variable may be illuminated by an argument in the literature regarding measurement issues in self-monitoring. Zaccaro, et al. (1991) measured self-monitoring using the 25-item true-false questionnaire described in Snyder (1974). In contrast, the present study as well as Walsh (1992) and Rueb and Foti (in press) used the 13-item Revised Self-Monitoring scale developed by Lennox and Wolfe (1984).

One of Lennox and Wolfe’s major reasons for revising the Self-Monitoring Scale cited by was the presence of five questions on Snyder’s scale “that appear to have more in common with the extraversion construct than they do with the self-monitoring construct” (Lennox and Wolfe, 1984, p. 1351). In contrast, the Revised Self-Monitoring scale of Lennox and Wolfe (1984) measures “only sensitivity to the expressive behavior of others and the ability to modify self-presentation” (p. 1349). Snyder has criticized this scale insofar as it is not as highly correlated with the latent self-monitoring causal variable as is the Self-Monitoring Scale (Snyder and Gangestad, 1986), and “may possess relations with behavioral variables independently of the latent self-monitoring variable” (Snyder, 1987, p. 181). Although this argument is yet to be resolved, the implication is that the role of extraversion in self-monitoring is a point of contention.

In view of this issue, it is suggested that the relation of self-monitoring to emergent leadership may be moderated by extraversion. That is, extraversion, or more specifically the interaction of extraversion and self-monitoring, may be better suited to predict the phenomenon. It suggested that extraversion, as measured by the Myers-Briggs Type Indicator, may be a particularly appropriate companion for the concept of self-monitoring, given that Jung's definition of extraversion includes some of the same concepts that led Zaccaro et al (1991) to select self-monitoring as a possible predictor of emergent leadership.

Jung's conceptualization of introversion/extraversion focuses on energy flow and the movement of subjective interest. Extraverts experience a "positive movement of subjective interest towards the object" such that someone acting in the extraverted state "thinks, feels, and acts *in relation to the object*" (Jung, 1971, p. 427, italics added). Thus, the extravert prefers, and draws energy from, the outer world of people and things. Defined in this manner, extraversion encompasses the concept of social perceptiveness (the capability to recognize different group requirements), a personality attribute that Kenny and Zaccaro (1983) endorsed as a potential characteristic of leaders.

In light of the heterogeneous findings of studies addressing the role of self-monitoring and emergent leadership, it is suggested by the present author that extraversion may be moderating the effects of self-monitoring. That is, the relation between self-monitoring and emergent leadership may be moderated by the degree to which the high self-monitors in a given sample are also extraverted. This argument is supported by the fact that the relation of self-monitoring to extraversion in the present sample ( $r = .28, p < .001$ ) is significant at the same level as found by Walsh (1992) ( $r = .23, p < .001$ ) is statistically the same. Thus, if extraversion is indeed moderating the relation of self-monitoring to emergent leadership, the degree to which it is related to self-monitoring in these two studies suggests that self-monitoring would be similarly affected in terms of leadership prediction. Indeed, these two studies found no effects for self-monitoring.

The fact that extraversion, as defined by Jung, was not measured in Zaccaro et al (1991) or Rueb and Foti (in press) leaves this question unanswered. Thus, it is recommended that future research explore the possibility that extraversion acts as a moderator in the relation between self-monitoring and emergent leadership. Specifically, further research should examine whether studies which are successful in supporting the hypothesis concerning self-monitoring and emergent leadership have different proportions of high self-monitoring extraverts than do studies which fail to support the hypothesized relation.

Hypothesis 7 focused on the role of actual leader behaviors in predicting leadership emergence. This hypothesis was not supported insofar as none of the relations were as predicted. The hypothesis had suggested that when SJ temperament types were rated as the emergent leaders, they would have been rated by independent observers to have exhibited prototypical leader behaviors.

Instead, the relation was significant only for SJ *non*-leaders. That is, the emergent leader scores of SJ individuals who were classified as non-leaders on both the GLI and the LBDQ, were significantly related to the actual leader behaviors that they exhibited. Among the leaders, contrary to expectations, the SP ratees manifested a relation between actual leader behaviors and GLI ratings, whereas the LBDQ ratings of NT ratees were significantly related to actual leader behaviors.

Although the findings for non-leader SJs ran counter to the hypothesis, these results are not surprising when considered in terms of type theory. As was stated above, the SJ individual is extremely sensitive to the hierarchical structure within a group interaction and believes that, within any interaction, “there should be . . . rules which govern the interactions of members” (Kiersey and Bates, 1984, p. 41). Thus, the hypothesis had predicted that, for the SJ, the preferred path to leadership would be through the exhibition of behaviors traditionally associated with leaders.

This sensitivity to social hierarchy, however, played itself out for SJs who did *not* emerge as a leader. That is, among the non-leaders, only SJ ratees manifested actual leader behaviors commensurate with group perceptions of their leadership. The less likely that they would be perceived as a leader, the fewer actual leader behaviors were displayed. Whereas it could be said that these individuals received lower scores simply because there were fewer leader behaviors in evidence, the fact that this relation existed for no other group of non-leaders implies that the explanation is not quite so straightforward. Rather, I suggest that the SJ's sensitivity to social hierarchy *led* them to display fewer leader behaviors. In effect, awareness of their non-leader status resulted in their withdrawal from the field.

Among leaders, the data concerning the relation between actual leader behaviors and leadership perceptions raise some interesting questions. Specifically, whereas the general impression (GLI) of SP leaders was related to actual leader behaviors as coded by trained observers, the *perceived* presence of leader behaviors (as measured by the LBDQ) was not. In contrast, the perceived presence of leader behaviors *was* related to actual leader behaviors for NTs, although the general impression of their leadership was not. Future research should address the possibility that these differences are not artifactual, but represent true differences in leadership. That is, do individuals of different temperament types attempt to guide and influence the behavior of others in behaviorally distinct ways?

The discrepancy in findings relative to temperament type between the present study and Walsh (1992) could also lie in the reliability of the MBTI. Although, the test-retest reliabilities of this instrument show consistency over time, it has been noted that a reported change in type is "most likely to occur in only one preference, and in scales where the original preference was low" (Myers and McCaulley, 1985, p. 171). A preference score of ten is considered "low". In the present study, 50 percent of the subjects reported at least one preference score that was in the 0-10 range. This might have significant implications

considering that a change in preference on one scale could change the temperament category to which a subject was assigned.

In addition, the fact that an individual may report a different type if retested has significant implications when viewed within the framework of type theory. That is, the preference strength of an individual for a particular function is theoretically related to the degree of type development. The theory of type development suggests that although type is “inborn, an innate predisposition like right- or left-handedness, . . . the successful development of type can be greatly helped or hindered by environment from the beginning” (Myers and Myers, 1980, p.176). Successful development, in Jungian terms, is related to the degree to which individuals differentiate themselves through the use of one function over another (e.g., sensing over intuition). Thus, a change in reported preference on the MBTI may not indicate a change in psychological type, but a lack of awareness on the part of the individual due to inadequate differentiation.

### *Conclusion*

The present study provided further evidence that perceptions of leadership are 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 argument that leadership is indeed something stable in the individual rather than in the situation.

In addition, the introduction of an objective measure of leadership demonstrated that the presence of actual leader behaviors is a necessary, but not sufficient, prerequisite in the formation of leadership perceptions. This conclusion is evident in the fact that two different measures of leadership perceptions (the GLI and the LBDQ) were more strongly related to each other than to actual leader behaviors.

Although the specific hypotheses regarding leadership emergence were not supported, the data provided evidence that perceptions of leadership may be differentially

related to actual leader behaviors depending on the temperament type of the perceived individual. Moreover, differences in information processing among the four types may further manifest themselves in rater behavior when completing the GLI and the LBDQ. Finally, the present data questions the validity of self-monitoring, rather than extraversion, as a construct which differentiates leaders from non-leaders. It is for future research to better explore the nature of these relations.

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**Appendix A**  
**Statement of Informed Consent**

## Informed Consent Form

Title: Social Perceptions and Group Interactions

Experiment #: 2095-94

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.

Group interactions during the second session will be videotaped. Three questionnaires will be administered prior to the first task session. This experiment will take approximately four 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 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.) There are no apparent risks to you from participation in this study.
- 4.) You may cease participation at any time without penalty.
- 5.) You will receive a total of four (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.
- 6.) 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.
- 7.) 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:

- 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.
- 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.
- 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: 552-8147  
Faculty Advisor: Dr. Roseanne Foti Phone: 231-5814

Chair, HSC: Dr. Eisler Phone: 231-7001  
Chair, IRB: Dr. E. Stout Phone: 231-9359

NAME (Please Print): \_\_\_\_\_ Signature \_\_\_\_\_  
Local Phone Number: \_\_\_\_\_

**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 sheets (one to each subject), and Assembly Instruction sheets (one set to the group, a total of 4 sheets). Read Instructions aloud. Then ask:

"Are there any questions?"

- 3.) Put price lists up for session one (refer to price sheet), and say:

"You will begin with \$10,000. You have 5 minutes to organize yourselves, and prepare for the session."

*TURN ON THE CAMERA and HAVE THE SUBJECTS SAY THEIR NUMBERS*

- 4.) Step away from the group, and leave them to themselves to plan. After 5 minutes has passed, say:

"The time allotted for Session 1 is 15 minutes."

- 5.) Begin manufacturing Session 1. When session is over, trading stops.
- 6.) Change price list for session 2.
- 7.) "You have 2 minutes to organize yourselves, and prepare for the session."
- 8.) Step away from the group, and leave them to themselves to plan. After 2 minutes has passed, say:

"The time allotted for Session 2 is 10 minutes."

- 9.) Begin manufacturing Session 2. When session is over, trading stops.
- 10.) Change price list for Session 3.
- 11.) "You have 2 minutes to organize yourselves, and prepare for the session."
- 12.) Step away from the group, and leave them to themselves to plan. After 2 minutes has passed, say:

"The time allotted for Session 3 is 10 minutes."

- 13.) Begin manufacturing Session 3. When session is over, trading stops. Turn off video camera.
- 14.) "Now, Please spread out around the room. 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."
- 15.) Distribute questionnaires, and then ask:

"Are there any questions?"

- 16.) When they have finished filling out the forms, collect the questionnaires.
- 17.) Thank the participants.
- 18.) Rotate or leave.

## Manufacturing Game Instructions

You are a business organization which manufactures the products displayed in the diagrams 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 (2X2), large blocks (2X4) and the specialty blocks which comprise the wheels (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.

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>
2X4 Block	80	100	100
2X2 Block	60	40	20
Wheels	110	125	150

<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

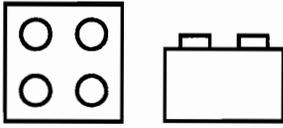
**Time Sequence:**

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

Required Legos Blocks for Manufacturing Task

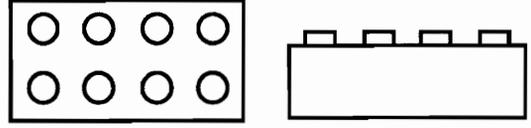
<u>Blocks</u>	<u>Product</u>		
	<u>Jeep</u>	<u>Boat</u>	<u>Robot</u>
2X2	5	12	11
2X4	13	12	10
Wheels	2	-	-

**2X2 Block**



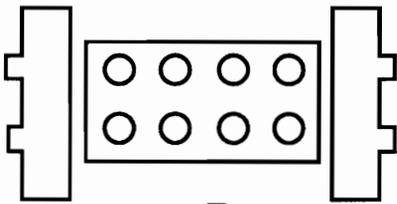
Top Side

**2X4 Block**

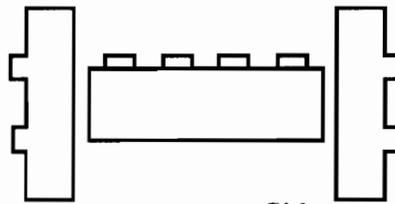


Top Side

**Wheels**

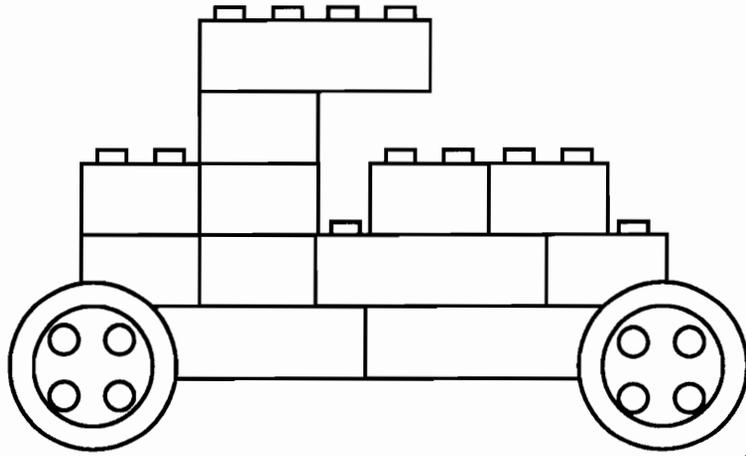


Top

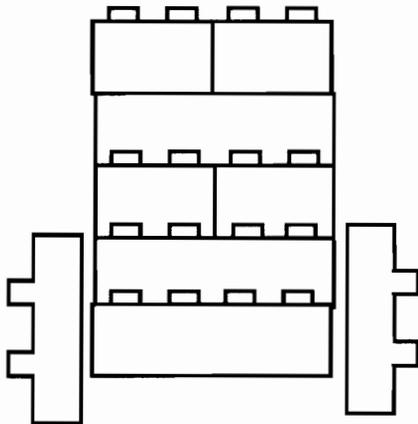


Side

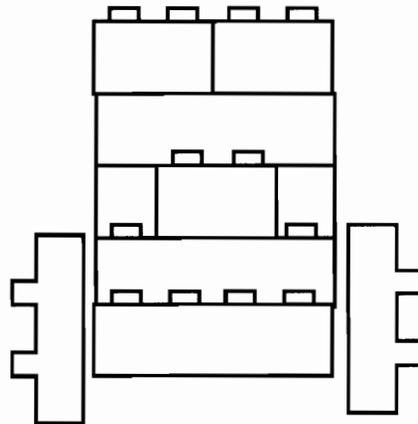
**Required Lego Blocks for Manufacturing Task.**



Sideview

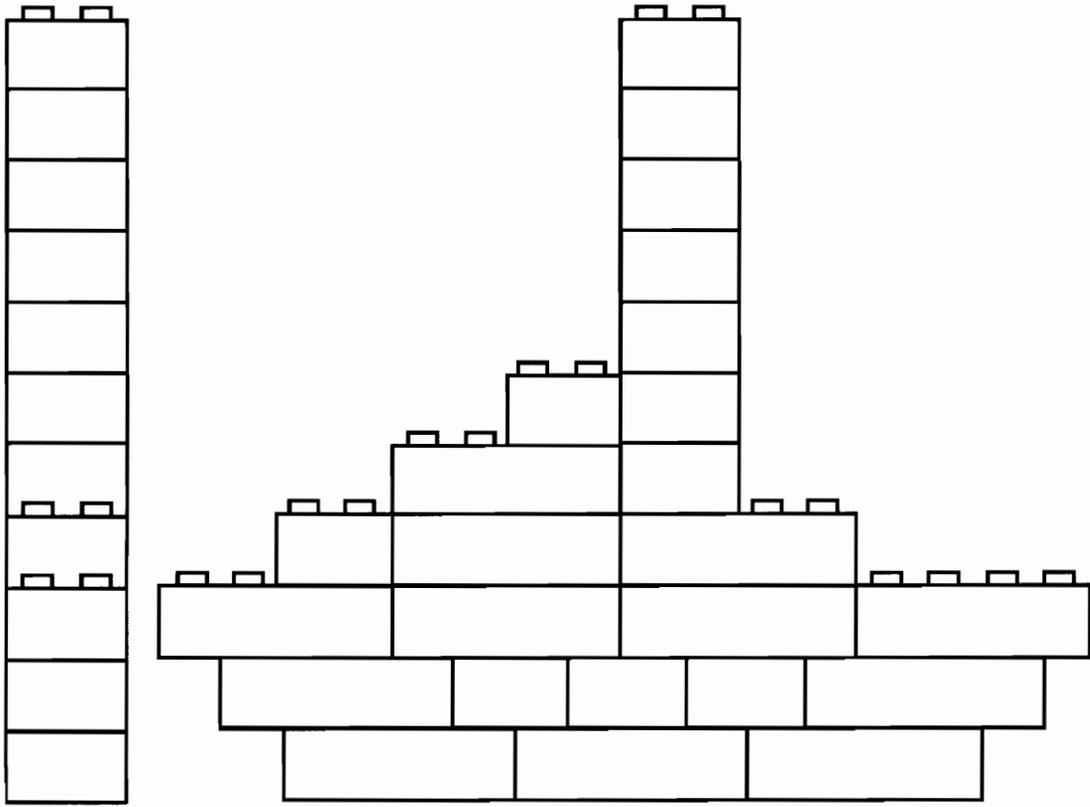


Frontview



Rearview

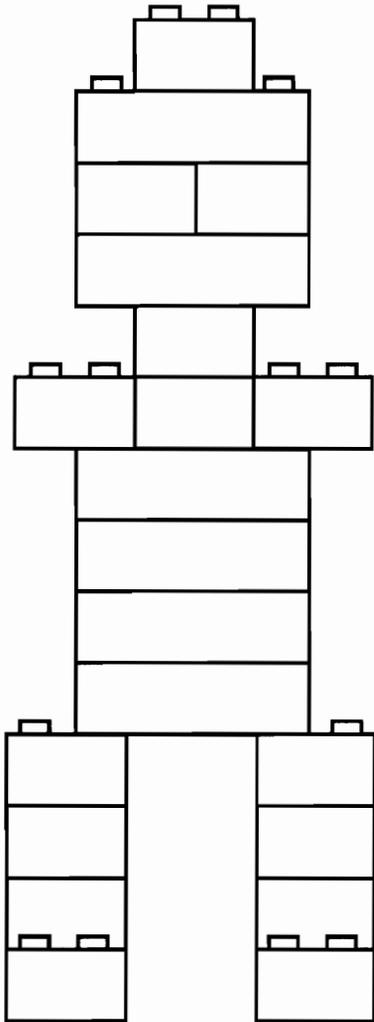
**Manufactured Jeep**



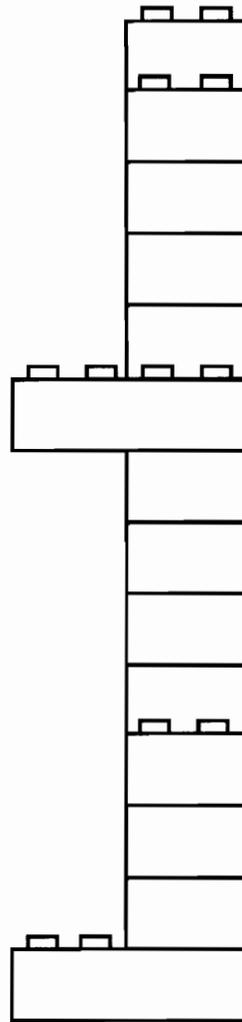
Frontview

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.) "During the discussion, each of you will be defending a different viewpoint."
- 3.) Hand out instructions and read along with the group.
- 4.) "Are there any questions?" . . . "Now, each of you should read the rest of the background information, and then read the viewpoint that you will defend."
- 5.) Wait while the participants finish reading their positions. Then ask:

"Are there any questions?"
- 6.) "You have 10 minutes to prepare your arguments. You may begin."
- 7.) After 10 minutes, say:

"Time is up. Position #1 may begin their 5 minute presentation."
- 8.) Step away from the group, and leave them to themselves.
- 9.) When position 1 is finished, positions 2 and 3 proceed in order. After all arguments are presented:

"You have 15 minutes to discuss the proposals,  
and to prepare a set of reasonable written recommendations."

### ***TURN ON THE CAMERA and HAVE THE SUBJECTS SAY THEIR NUMBERS***

- 10.) When 15 minutes are up(*or when the participants finish*), collect the recommendations. Turn off video camera.
- 11.) "Now, Please spread out around the room. 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."
- 12.) Distribute questionnaires, and then ask:

"Are there any questions?"
- 13.) When they have finished filling out the forms, collect the questionnaires.
- 14.) Thank the participants.
- 15.) 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-Ed 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: HIV QUESTION**

- 1.) "Welcome, in this session you will be discussing a controversial issue."
- 2.) While reciting step 1, hand out the question, scrap paper, and pencils if needed.
- 3.) Read question aloud to subjects.
- 4.) Ask:

"Are there are any questions?"

*TURN ON THE CAMERA and HAVE THE SUBJECTS SAY THEIR NUMBERS*

- 5.) "You may begin the discussion, AND PREPARE A WRITTEN SET OF RECCOMENDATIONS ADDRESSING THE NEEDS OF THE GROUPS MENTIONED. YOU WILL HAVE APPROXIMATELY 15 MINUTES."
- 6.) Step away from the group, and leave them to themselves.
- 7.) When subjects are finished (about 15 minutes), collect questions and written suggestions. Turn off video camera.
- 8.) "Now, Please spread out around the room. 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."
- 9.) Distribute questionnaires, and then ask:

"Are there any questions?"
- 10.) When they have finished filling out the forms, collect the questionnaires.
- 11.) Thank the participants.
- 12.) 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.) Hand out paper for practice session. Go through the steps for making a moon tent.
- 5.) "Now, please practice making a moon tent." Wait while they complete a moon tent.
- 6.) "In this exercise, you will be competing with the groups in the other rooms to see who makes the most moon tents. 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. 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."
- 10.) "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."

### *TURN ON THE CAMERA and HAVE THE SUBJECTS SAY THEIR NUMBERS*

- 11.) Begin first 10 minute session.
- 12.) When the 10 minutes have passed, have subjects count their moon tents. The number made is their score. Take the moon tents with you to the door. The runner will take them. Pretend to find out the other groups' scores.
- 14.) "Your score was\_\_\_\_, the best group's score was \_\_\_\_ (add 5 to the group's score) and the other group's score was \_\_\_\_ (subtract 7 from the group's score)."
- 15.) Begin session 2.
- 16.) When over, take the box of moon tents outside and give the participants the questionnaires. Tell them that the moon tents are being counted, and the results will be announced at the end of the night. Turn off video camera.
- 17.) "Now, Please spread out around the room. 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."
- 18.) Distribute questionnaires, and then ask:

"Are there any questions?"
- 19.) When they have finished filling out the forms, collect the questionnaires.
- 20.) Thank the participants.
- 21.) 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) | 100.) (1) | determined | devoted    | (2) |
| 73.) (1) | imaginative | matter-of-fact | (2) | 101.) (1) | system     | zest       | (2) |
| 74.) (1) | systematic  | spontaneous    | (2) | 102.) (1) | facts      | ideas      | (2) |
| 75.) (1) | congenial   | effective      | (2) | 103.) (1) | compassion | foresight  | (2) |
| 76.) (1) | theory      | certainty      | (2) | 104.) (1) | concrete   | foresight  | (2) |
| 77.) (1) | party       | theater        | (2) | 105.) (1) | justice    | mercy      | (2) |
| 78.) (1) | build       | invent         | (2) | 106.) (1) | calm       | lively     | (2) |
| 79.) (1) | analyze     | sympathize     | (2) | 107.) (1) | make       | create     | (2) |
| 80.) (1) | popular     | intimate       | (2) | 108.) (1) | wary       | trustful   | (2) |
| 81.) (1) | benefits    | blessings      | (2) | 109.) (1) | orderly    | easy-going | (2) |
| 82.) (1) | casual      | correct        | (2) | 110.) (1) | approve    | question   | (2) |
| 83.) (1) | active      | intellectual   | (2) | 111.) (1) | gentle     | firm       | (2) |
| 84.) (1) | uncritical  | critical       | (2) | 112.) (1) | foundation | spire      | (2) |
| 85.) (1) | scheduled   | unplanned      | (2) | 113.) (1) | quick      | careful    | (2) |
| 86.) (1) | convincing  | touching       | (2) | 114.) (1) | thinking   | feeling    | (2) |
| 87.) (1) | reserved    | talkative      | (2) | 115.) (1) | theory     | experience | (2) |
| 88.) (1) | statement   | concept        | (2) | 116.) (1) | sociable   | detached   | (2) |
| 89.) (1) | soft        | hard           | (2) | 117.) (1) | sign       | symbol     | (2) |
| 90.) (1) | production  | design         | (2) | 118.) (1) | systematic | casual     | (2) |
| 91.) (1) | forgive     | tolerate       | (2) | 119.) (1) | literal    | figurative | (2) |
| 92.) (1) | hearty      | quiet          | (2) | 120.) (1) | peacemaker | judge      | (2) |
| 93.) (1) | who         | what           | (2) | 121.) (1) | accept     | change     | (2) |
| 94.) (1) | impulse     | decision       | (2) | 122.) (1) | agree      | discuss    | (2) |
| 95.) (1) | speak       | write          | (2) | 123.) (1) | executive  | scholar    | (2) |
| 96.) (1) | affection   | tenderness     | (2) |           |            |            |     |
| 97.) (1) | punctual    | leisurely      | (2) |           |            |            |     |
| 98.) (1) | sensible    | fascinating    | (2) |           |            |            |     |
| 99.) (1) | changing    | permanent      | (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 my 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 Amount	Nothing Little
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Appendix I  
Leader Behavior Description Questionnaire  
Form XII

### Directions

READ each item carefully. THINK about how frequently group member \_\_\_\_\_ engaged in the behavior described in the item. DECIDE whether this behavior was performed (A) always, (B) often, (C) occasionally, (D) seldom, or (E) never acted as described by the item. Place a check mark (✓) in the appropriate box (either A, B, C, D, or E).

**A= Always   B= Often   C= Occasionally   D= Seldom   E= Never**

**A   B   C   D   E**

1.	Encourages extra work.					
2.	Makes pep talks to stimulate the group.					
3.	Lets group members know what is expected of them.					
4.	Is friendly and approachable.					
5.	Stresses being ahead of competing groups.					
6.	This members arguments are convincing.					
7.	Encourages the use of uniform procedures.					
8.	Does little to make it pleasant to be a member.					
9.	Asks members for great effort.					
10.	Argues persuasively for his/her point of view.					
11.	Tries out his/her ideas in the group.					
12.	Puts suggestions made by the group into operation.					
13.	Keeps work moving at a rapid pace.					
14.	Is a very persuasive talker.					
15.	Makes his/her attitudes clear to the group.					
16.	Treats all group members as his/her equal.					
17.	Pushes for increased production.					

A= Always B= Often C= Occasionally D= Seldom E= Never

A B C D E

		A	B	C	D	E
18.	Is very skillful in an argument.					
19.	Decides what shall be done and how it shall be done.					
20.	Gives advance notice of changes.					
21.	Asks group members to work harder.					
22.	Is not a very convincing leader.					
23.	Assigns group members to particular tasks.					
24.	Keeps to himself or herself.					
25.	Permits group members to take it easy in their work.					
26.	Speaks from a strong inner conviction.					
27.	Makes sure that his/her part in the group is understood by the group members.					
28.	Looks out for the personal welfare of group members.					
29.	Drives hard when there is work to do.					
30.	Is an inspiring talker.					
31.	Schedules the work to be done.					
32.	Is willing to make changes.					
33.	Urges the group to beat its previous record.					
34.	Persuades others that his/her ideas are to their advantage.					
35.	Maintains definite standards of performance.					
36.	Refuses to explain his/her actions.					
37.	Keeps the group working up to capacity.					
38.	Can inspire enthusiasm for a project.					
39.	Asks that group members follow standard rules.					
40.	Acts without consulting the group.					

## Appendix J

### System of Categories for Interaction Process Analysis

- 1 **Show solidarity**, raises other's status, gives help, reward:
- 2 **Show tension release**, jokes, laughs, show satisfaction:
- 3 **Agrees**, show passive acceptance, understands, concurs, complies:
- 4 **Gives suggestion**, direction, implying autonomy for other:
- 5 **Gives opinion**, evaluation, analysis, expresses feeling, wish:
- 6 **Gives orientation**, information, repeats, clarifies, confirms:
- 7 **Asks for orientation**, information, repetition, confirmation:
- 8 **Asks for opinion**, evaluation, analysis, expression of feeling:
- 9 **Asks for suggestion**, direction, possible ways of action:

## Appendix K

### Objective Measure of Leadership: Behavioral Coding Schemes

## Manufacturing/Moon Tents Behavioral Rating Sheet

Rotation # _____ Room # _____ Task # _____	Subject #
<i>Shows Solidarity, raises other's status, gives help, reward</i>	
• Offers <i>encouragement</i> to group members.	
• Starts, leads, gives direction to <i>conversation</i>	
• Offers <i>assistance</i> to group members.	
• <i>Compliments</i> efforts of group members.	
<i>Show Tension Release</i>	
• Makes jokes, etc. if things get tense/tedious.	
<i>Agrees, shows passive acceptance, understands, concurs.</i>	
• Listens to and concurs with ideas of another.	
• Agrees to making suggested changes.	
• Agrees to group suggestions, follows agreed upon plans.	
<i>Gives Suggestion, direction, implying autonomy for other</i>	
• Decides what shall be done.	
• Decides how to proceed (assigns group members to a particular task).	
• Recognizes and acts to correct other's difficulties.	
• Suggests ways to improve production.	
• Takes action on group decisions.	
<i>Gives Opinion, evaluation, analysis, expresses feeling, wish</i>	
• Offers opinion, of a hypothetical, inferential nature.	
<i>Gives orientation, information repeats, clarifies, confirms.</i>	
• States/reports factual information.	
• Explains task to group members.	
• Answers group members questions regarding facts.	
• Keeps group members aware of time limits, pushes for increased production.	
• Monitors group progress.	
• Offers reasons for decisions.	
• Recognizes need for changing procedures.	
<i>Asks for Suggestion, direction, possible ways of action</i>	
• Solicits ideas regarding how to proceed (concrete behaviors)	
<i>Asks for Orientation, information, repeats, clarifies, confirms</i>	
• Requests factual information from other group members.	
• Requests information from research assistant.	
<i>Asks for Opinion, evaluation, analysis, expression of feeling</i>	
• Asks for opinion (of a hypothetical, inferential nature.)	

## Leaderless Group Discussion/HIV Behavioral Rating Sheet

Rotation # _____ Room # _____ Task # _____	Subject #
<i>Shows Solidarity, raises other's status, gives help, reward</i>	
• Ensures that each member is <i>heard</i> .	
• Acknowledges good points of other group members.	
• <i>Compliments</i> efforts of group members.	
<i>Show Tension Release</i>	
• Makes jokes, etc. if things get tense/tedious.	
<i>Agrees, shows passive acceptance, understands, concurs.</i>	
• Agrees with another's observation.	
• Is open to ideas of other group members.	
• Is willing to adjust viewpoint to accommodate others' ideas.	
• Agrees to group suggestions, follows agreed upon plans for how to proceed.	
<i>Gives Suggestion, direction, implying autonomy for other</i>	
• Decides what shall be done/suggests ways to attain desired goals.	
• Gives direction/structure to discussion.	
<i>Gives Opinion, evaluation, analysis, expresses feeling or wish</i>	
• Offers opinion.	
• Expands on another group member's views.	
• Responds to another's ideas.	
• Refutes specific points of other's arguments with counterpoints.	
<i>Gives orientation, information, repeats, clarifies, confirms</i>	
• States/reports factual information.	
• Offers support for own opinion.	
• Answers questions.	
• Sums up what has been said.	
• Rereads information from instruction sheets.	
• Explains task to group members.	
<i>Asks for Suggestion, direction, possible ways of action</i>	
• Solicits ideas about how to find a solution. (How should we go about doing this?)	
• Requests information concerning how to proceed given a particular goal. (i.e. What should I do?)	
<i>Asks for Opinion, evaluation, analysis, expression of feeling</i>	
• Involves other group members in the conversation by soliciting their ideas (not factual information).	
<i>Asks for Orientation, information, repetition, confirmation.</i>	
• Requests information from other group members.	
• Requests information from research assistant.	

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### Education

- 1993-1995: *Ph.D.* , Industrial/Organizational Psychology.  
Virginia Polytechnic Institute and State University, Blacksburg, VA.  
Dissertation title: *The Predictive Value of Psychological Type and Self-Monitoring on Leadership and Leadership Perceptions.*
- 1990-1992: *Master of Science* in Industrial/Organizational Psychology.  
Virginia Polytechnic Institute and State University, Blacksburg, VA.  
Thesis title: *The Predictive Value of Psychological Type and Self-Monitoring on Emergent Leadership.*
- 1985-1989: *Bachelor of Arts* with High Honors in Psychology, Minor in Spanish Literature.  
The College of William and Mary, Williamsburg, VA.  
Honor's Thesis title: *The Role of Self-Esteem in Behavioral Performance*

### RESEARCH EXPERIENCE:

- 1/94-11/95 Roseanne J. Foti (Chair), Virginia Tech. (Dissertation).  
Designed and implemented a laboratory study extending Master's thesis research to include video-taping and behavioral coding of group interactions: the role that self-monitoring and psychological type as measured by the Myers-Briggs Type Inventory as a moderator between actual leader behaviors and perceived leader emergence.
- 10/91-12/92 Roseanne J. Foti (Chair), Virginia Tech. (Master's Thesis).  
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 Robert A. Johnson (Chair), The College of William and Mary.  
(Honor's Thesis).  
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:

- 1/94-5/95 *Graduate Teaching Assistant*, Virginia Tech, Dept. of Psychology.  
Instructor: Psychology of Learning. Position comprised full responsibility for the development and the administration of the course.

- 7/93-12/93 *Spanish Language Instructor, Hispanic American Communications Employees (HACEMOS).*  
Designed, and implemented introductory Spanish language classes to employees at Southwestern Bell Corporation.
- 1/92-5/93 *Graduate Teaching Assistant, Virginia Tech, Dept. of Psychology.*  
Served as the lecture assistant for undergraduate classes in Industrial Psychology, Measurement in Psychology, Abnormal Psychology, and Learning and Motivation. Responsibilities included attending lectures; administering and correcting exams; providing individual assistance when needed; keeping class records for final grades; and writing exam questions.
- 8/90-12/91 *Graduate Teaching Assistant, Virginia Tech, Dept. of Psychology.*  
Instructed laboratory session of introductory psychology course; facilitated class discussion; prepared and presented lectures and demonstrations; and provided individual assistance as needed.
- 1/90-5-90 *Graduate Teaching Assistant*  
The Catholic University of America, Dept. 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**

- 4/94 *Neil Hauenstein, Consultant.*  
Conducted Myers-Briggs workshop with the city managers of Staunton, Va. as part of an overall program on leader communications.
- 1/94-3/94 *Roseanne Foti, Consultant.*  
Assisted in the validation of assessment materials for the service order representatives of J. Crew Company. Collected and analyzed validation data.
- 6/93-12/93 *Southwestern Bell Corporation, Seth Zimmer.*  
Intern - Developed and wrote documentation for a role-play assessment tool for Communications Consultant position : conducted focus groups, developed and validated role-play, wrote technical report. Assisted in the validation of the Technical Knowledge Test for Outside Craft positions: conducted focus groups, finalized validation survey, collected data. Assisted in the validation of a general ability test to be used in the selection of non-management employees for Mobile Systems subsidiary.
- 12/91-1/92 *Bell Atlantic Company, Nancy Tippins.*  
Associate Manager - Assisted in the validation study associated with the Universal Test Battery intended for selection. Administered a computerized selection test.
- 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.

**RELEVANT COURSE WORK:**

**I/O Courses and Seminars:**

Industrial Psychology I and II  
Organizational Psychology I and II  
Leadership Perceptions  
Employee Selection and Performance Appraisal  
Advanced Topics in Applied Psychology: Leadership  
Theory

**Quantitative and Methodological Courses:**

Research Methodology  
General Statistics  
Multiple Regression Analysis  
Quantitative Topics in Applied Psychology  
Advanced Psychometrics  
Psychological Tests and Measurement  
Multivariate Statistics

**CERTIFICATIONS:**

7/90

Typewatching Qualifying Workshop  
Otto Kroeger Associates  
Fairfax, VA.  
Certified to give, score, and interpret the Myers-Briggs Type  
Indicator.