

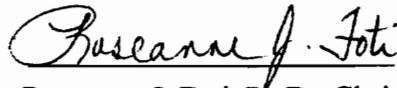
**A New Approach to the Study
of Emergent Leadership: The Application of Personality Patterns
Based on General Self-Efficacy, Intelligence,
and Dominance**

by

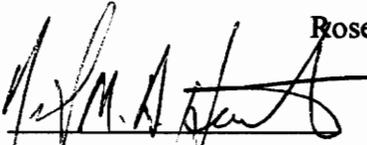
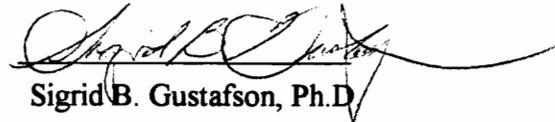
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(ABSTRACT)

Past research on the emergence of leaders in groups has typically examined relationships between individual trait variables and emergence. The current study extends work of the past by pioneering a multi-variable pattern approach, along with the traditional examination of individual trait measures, in the domain of emergent leadership. The personality pattern examined in this study includes the variables dominance, intelligence and general self-efficacy.

All three trait variables were significantly positively associated with leader emergence. Individuals high in all three traits (HHH) emerged significantly more frequently than all other individuals while those low in all three traits (LLL) emerged significantly less frequently than all other individuals. The study also examined non-leader group members and their perceptions of the emergent leaders; resulting in descriptions of leaders that were highly consistent with the traits of interest. Implications for the future research of emergent leadership are discussed.

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Introduction

Groups are a critical aspect of the social fabric in today's world. There are countless group-related phenomena (i.e. norms, conformity, polarization, and cohesiveness) that influence the behavior and interaction of individuals in such settings as: schools, organizations, athletic teams, the military, and courtrooms. The efficiency and effectiveness of such groups are likely to depend in part on the action of group leaders. These leaders exert a powerful influence on the activities and the direction of the group, regardless of whether they are appointed to or emerge from the group.

In this day and age, organizations are relying more than ever on the formation of self-contained work teams (groups) without appointed leaders. Work teams are defined as "interdependent collections of individuals who share responsibility for specific outcomes for their organization" (Sundstrom, DeMeuse, & Futrell, 1990, p. 120). A critical issue for organizations is the evolution of work teams in terms of the interpersonal processes and other factors involved in the structuring of these groups. Offerman and Gowing (1990) reinforce the importance of leaderless teams in today's organizations and emphasize the development of processes, norms, cohesion, and roles within these teams. They also note that the leadership role is of critical importance for the performance of the group. In this vein, it is important to provide an empirical and theoretical account of which individuals will emerge, and for what reasons, as leaders in these situations. This would be of great benefit to organizations in, among other things, the selection of individuals and the creation of work teams. The present author seeks to provide a

theoretical and empirical account of leadership emergence in groups based on implicit leadership theories combined with a trait-based perspective focusing on the traits: Dominance, intelligence and general self-efficacy. This research also extends that of the past by making predictions based on patterns of these three traits.

Social-Cognitive Perspective

It has been repeatedly demonstrated, and documented in what are known as implicit personality theories, that individuals have stable beliefs concerning the relatedness of traits and behaviors (Schneider, 1973). That is to say, individuals have a strong tendency to base their perceptions of others on underlying traits or dispositions. The basic premise of these personality theories has been extended in an attempt to explain observers' perceptions of leadership. These Implicit *Leadership* Theories are commonly researched from a social-cognitive perspective and emphasize the layperson's conceptualizations of leadership (Lord, De Vader, & Alliger, 1986).

The social-cognitive perspective typically explains social perceptions in terms of perceiver information processing with a strong emphasis on the encoding and retrieval of information. Within this framework it is necessary to examine schemas and categorization in order to fully understand the application of Implicit Leadership Theories to explain leadership perceptions. A schema may be defined as a cognitive structure representing knowledge about a concept (or stimulus), consisting of its attributes and the relationship among those attributes (Fiske & Taylor, 1991). An individual applies this schematic information in social perception after classifying an individual into a particular cognitive

category (Cantor & Mischel, 1979; Fiske & Taylor, 1991). In applying categorization theory to the area of leader emergence Lord, Foti, & De Vader (1984), found several traits that could affect the perception of observers in terms of another individual's leadership. These categories are of particular interest as it has been postulated (Lord, Foti, & Phillips, 1982; Lord, Foti, & De Vader, 1984) that Implicit Leadership Theories are essentially cognitive categories that are used by perceivers in information processing that help to simplify the perception and the classification of individuals as leaders or non-leaders.

In a theoretical piece Hollander and Julian (1969) argued that, in a group setting, it is important to examine the leader as perceived, considering that followers have pre-existing expectations regarding what constitutes a leader. Implicit Leadership Theories are central in illustrating this belief, as these cognitive schema composed primarily of traits have been shown to be instrumental in the perception and categorization of individuals as leader or non-leader (Foti, Fraser, & Lord, 1982; Lord, De Vader, & Alliger, 1986). Offerman, Kennedy, and Wirtz (1994) illustrate the importance of Implicit Leadership Theories as they provided "support for a view of ILT's as collectively held expectations that are widely shared" (p.55). With this in mind, the important issue becomes identifying the traits or characteristics, and combinations of these traits and characteristics, that will lead to the perception of an individual's emergence as a leader. The present investigation attempts to provide empirical evidence for general self-efficacy, intelligence, and dominance as traits that are highly associated with individuals who are perceived to

emerge as leaders in group situations and to demonstrate that leaders are described in a fashion consistent with these traits.

Trait Theories in Leadership

This is an important endeavor because a number of researchers have had minimal success in furthering trait theories in the domain of leadership. Since the pivotal reviews by Mann (1959) and Stogdill (1948), that demonstrated and reviewed this lack of success, leadership researchers have all but abandoned trait explanations. Trait explanations also suffer from reports of consistent failure in two types of research inquiries: First, attempts to isolate specific traits that differentiate leaders from non-leaders (as reviewed by Mann & Stogdill) have failed and, of equal importance, the same leaders fail to emerge consistently across situations when tested via rotation designs. However, there is a great deal of evidence that has recently emerged suggesting that the reviews by Stogdill and Mann are not as accurate or as negative as originally reported and that leadership is much more stable (dispositional) than is often reported.

In a comprehensive critique of the reviews by Mann (1959) and Stogdill (1948), Lord et al. (1986) bring attention to the fact that there were actually a large number of significant relationships between leadership and personality that appeared in a consistent fashion. For example, they point to the Mann (1959) review and note the high percentage of significant results in a positive direction: 99% for intelligence, 94% for sensitivity, 92% for masculinity, and 71% for dominance. These encouraging results, among others, were hidden due to an emphasis that was primarily directed at the negative findings. It has also

been argued that these early reviews have often been misrepresented as demonstrating "no relationship between personality factors and leadership effectiveness" (Landy, 1985, p. 428, cited in Lord et al., 1986), adding to their strong negative impact on trait investigations of leadership. The fact of the matter is that the relationship between traits and effective performance has remained largely untested and is not the focus of the reviews by Mann and Stogdill or of this study. The important issue in this inquiry is the association between traits and the perceptions of leader emergence for which relationships have been previously demonstrated (Lord, Foti, & De Vader, 1984).

Lord et al. (1986) posited that several artifactual reasons including sampling error, restriction of range, and unreliability could be responsible for the low reported degree of relationship between traits and leadership. They also applied the meta-analytic technique, validity generalization, to the data used by Mann in his 1959 review in order to gain new insight and test the validity of his conclusions. The results demonstrated significant correlations between intelligence, dominance, masculinity-femininity, and leadership perceptions while the correlation with the trait adjustment approached significance. This led to the conclusion that "contrary to popular thinking for these three traits, there are fairly consistent and significant relations to leadership perceptions" (Lord et al. 1986, p. 402). These criticisms and the re-analysis of these influential critiques should improve the esteem of trait theory with researchers in the leadership domain. A great deal of significant evidence has been provided that individuals who emerge as leaders are perceived to exhibit certain traits.

Another supposed failure for trait investigations has been the use of rotation designs as a means of comparing leadership emergence in one situation to emergence in other situations. In utilizing these designs one is looking for cross-situational consistency to test the assumption that if leadership is due to an internal, stable trait or characteristic (or a set of traits/characteristics), the same person should emerge when situational aspects are altered (Kenny & Zaccaro, 1983; Kenny & Hallmark, 1992; Zaccaro, Foti, & Kenny, 1991). Rotation designs typically vary either the composition of the group or the task and very rarely in a full rotation design, as with Barnlund (1962), both the composition of the group and the task are varied.

Many early studies utilizing rotation designs have concluded that there is not cross-situational consistency in emergence. Barnlund (1962) is one example of a study which reached the conclusion that leadership is not stable and must be dependent upon aspects of the situation. Kenny and Zaccaro (1983) re-analyzed Barnlund's data using the quantitative Social Relations Model (Kenny, 1981; Kenny, 1988) in order to "give us a more accurate estimate of leadership stability" (p. 681). Barnlund's data were chosen because he used the most intricate rotation design by varying both group composition and task so as to provide the most stringent test. They (Kenny & Zaccaro, 1983) found that 49% to 82% (representing upper and lower bounds) of variance in leadership is attributable to stable characteristic(s) of the emergent leader. Based on these data the authors assert that "our analysis reveals that leadership is stable, [while] it in no way illuminates what personality trait...bring(s) about this stability" (p. 683). Researchers are

reporting empirical data that are promising for the resurgence of trait explanations of leadership. For example, Zaccaro, Foti, and Kenny (1991), in employing a full rotation design, provided clear evidence that emergent leadership is stable across situations.

All of this literature (Lord, De Vader, & Alliger, 1986; Kenny & Zaccaro, 1983; Zaccaro, Foti, & Kenny, 1991) points to the fact that an individual's personality is associated with observers' perceptions of leadership at a substantial level and in a more consistent manner than previous criticisms have indicated. This research also demonstrates that leadership emergence is indeed stable and that we have eliminated the need to demonstrate its cross-situational consistency by utilizing rotation designs. Considering this, the present study intends to move away from rotation designs and create a situation which focuses on the personality traits and patterns of these traits that are highly associated with leader emergence.

However, the present author believes, as argued by Kenny and Zaccaro (1983), that the traits associated with emergence have not been fully investigated in empirical studies. It is now up to researchers to attempt to isolate the traits, and patterns of these traits, that will be perceived by others and will lead to an individual's being perceived as a leader. Again, the present author will investigate dominance, intelligence, and general self-efficacy and patterns made up of these three traits..

Dominance

There is a long history involving dominance in the prediction of leadership emergence dating back to the reviews by Stogdill (1948) and Mann (1959). Dominance

measures have been utilized in attempts to identify individuals who manifest dominant, ascendant manners and who take initiative in interpersonal situations. Gough (1968, cited in Hegstrom & Griffith, 1992) posited that individuals who score high in dominance are seen as forceful and as capable of influencing other individuals. Evidence for this assertion was provided by Megargee (1969) in that scores on a measure of dominance predicted the tendency of individuals to assume the role of a leader. In this study 69% of high dominant individuals emerged as leaders in same-sex pairs (all male). In a replication of the Megargee study, Nyquist and Spence (1986) found that 73% of high dominant individuals emerged in all-male dyads. Many other studies (Hegstrom & Griffith, 1992; Carbonell, 1984; Fleischer & Chertkoff, 1986) have provided empirical evidence for dominance as greatly associated with emergence in same-sex dyads. It is also important to note that Offerman, Kennedy, and Wirtz (1994) factor analyzed Implicit Leadership Theories and although dominance was not one of the specified factors, tyranny (domineering) and strength (strong, bold, powerful) are closely related.

Dominance has been shown to exhibit only a modest relationship with any single dominance-oriented behavior (Aries, Gold, & Weigel, 1983) but dominance does exhibit a more profound relation with the overall pattern of an individual's dominance related behavior. This finding is in line with the frequency concept of disposition (Alston, 1975) in that given an adequate sampling of behavior, the dominant individual will demonstrate a greater number of dominant responses in relation to the average for that disposition. For this reason it is important to use discretion in attempting to provide a time period that is

long enough, in an experimental setting, for the dominance of an individual to become evident and affect the perceptions of others in the group.

This investigation will be using four person groups for which there has not been any published research involving dominance and leadership emergence. However, considering the great amount of evidence from studies involving same-sex dyads there is reason to believe that this relationship will also be observed in four person groups. At the very least, there is no reason to believe that this relationship will not be observed. However, the larger groups will provide a more stringent test of the relationship between dominance and leadership emergence as the choice is no longer between only two individuals.

Intelligence

Hypotheses concerning leader emergence should not consider only the relative dominance of individuals, but should also take into account one's level of intelligence. Intelligence has been long associated with leadership and leader emergence both as a trait possessed by a leader and as perceived, by subordinates/observers, in a leader. This association has existed, based on theory as well as empirical studies, for a great number of years.

Kotter (1988) demonstrated his belief in this relationship and in the importance of intelligence as leadership "requires a keen mind, a moderately strong analytical ability, a capacity to think strategically and multidimensionally" (p.29). There are very few complex activities that are not better performed by individuals higher in intelligence than by those

lower in intelligence; this would include something as complex as leadership. Fiedler and Garcia (1987) exhibit their faith in intelligence as a critical factor, involved in effective leadership, in the development of their cognitive resource model. The main assumption of this model and the relationship between intelligence and leadership is that "intelligent and competent leaders make more effective plans, decisions, and action strategies than do leaders with less intelligence" (p. 106). This assumption is not only based on theoretical assertions such as these but has also been backed by a great deal of empirical research.

Fiedler and Garcia (1987) note that leader intelligence correlates positively with managerial effectiveness and that intellectual ability correlates with leadership status. Intelligence has been significantly correlated with leadership and leadership emergence (Bass, 1981; Mann, 1959; Lord et al., 1986) in a wide variety of situations. Another reason to consider intelligence is that it has been shown to be an integral component of an individual's implicit leadership theory (Lord et al., 1986; Offerman et al., 1994) which often leads to those who are high in intelligence being perceived as leaders in group situations.

General Self-Efficacy

A third variable that will be utilized by the present author is general self-efficacy. Because published research on general self-efficacy in leadership emergence is nonexistent, expected relationships must be deduced solely from the theory without the benefit of insight from empirical findings. General self-efficacy is a construct that has evolved from Bandura's (1977) conceptualization of self-efficacy. Self-efficacy is defined by Bandura as

the expectation that one can successfully perform a behavior that is necessary in order to produce a desired outcome. Self perceptions of efficacy are postulated as a cognitively-based source of motivation in that they influence thoughts, actions and emotional arousal in a particular situation. Self-efficacy judgments determine what activities people engage in, how much effort they will expend, and how long they will sustain effort in the face of adversity (Bandura, 1982).

Specific self-efficacy is commonly measured by identifying self-percepts related to the particular area of psychological functioning being explored (Bandura, 1982). In other words, these self-percepts of efficacy vary across domains of study rather than being a global disposition. It has been empirically demonstrated, across many domains, that self-efficacy is predictive of behavior and performance. It has even been postulated that perceived self-efficacy is a better predictor of subsequent behavior than performance attainments (Bandura, 1982). A few examples of the areas in which self-efficacy has been researched and shown to be predictive of performance are: competitive performance (Weinberg, Yukelson, & Jackson, 1980), smoking reduction (Barrios & Neihaus, 1985), weight loss (Chambliss & Murray, 1979), and goal setting (Locke, Frederick, Lee, & Bobko, 1984). The vast majority of researchers utilizing the self-efficacy construct have measured it in a fashion consistent with this domain-rooted conceptualization of self-efficacy. However, self-efficacy can also be conceived of as a global construct or personality trait and it is this global construct that will be utilized in the present study.

Shelton (1990) defines general self-efficacy as a "global trait, relatively stable, {that} changes over time with an accumulation of success and failure experiences" (p. 992). In this vein, general self-efficacy would play a major role in the determination of overall self confidence which would, in turn, influence expectations of self-efficacy for a given situation. Many researchers (Sherer, Maddux, Mercadante, Prentice-Dunn, Jacobs, & Rogers, 1982; Sherer & Adams, 1983; Tipton & Worthington, 1984; Shelton, 1990) have been involved in the creation of this construct and have developed and validated scales for its measurement. The goal in producing these scales is the development of a self-efficacy measure that is no longer tied to specific situations or behaviors (Sherer et al., 1982). Researchers can now measure relatively enduring sets of beliefs that an individual can effectively execute behaviors in a broad range of situations. Thus, self-efficacy is brought to a new level in that the normally domain specific areas of self-efficacy contribute to a "general set of expectations that the individual carries into new situations" (Sherer et al., 1982).

Evidence (Tipton & Worthington, 1984; Sherer et al., 1982) has been put forth demonstrating that individuals with high general self-efficacy scores exhibit more effort and persevere for a greater length of time on different tasks than those with lower scores on the measure. In summary, individuals with high general self-efficacy have increased self confidence due to an accumulation of successes during their life, demonstrate more effort on a variety of tasks, and persevere for a greater length of time even in the face of adversity than those with lower general self-efficacy scores. I suggest that these

characteristics will manifest themselves in a group situation resulting in individuals with high general self-efficacy emerging as leaders. As far as a rationale for the decision to use general self-efficacy as opposed to the traditional domain-rooted measures; Tipton and Worthington (1984) suggested that specific self-efficacy measures are more valid in situations that are clearly defined and familiar whereas general self-efficacy is more valid in less familiar, ambiguous situations. As leadership emergence studies involve group tasks that are highly ambiguous, with little or no instruction, general self-efficacy will provide useful information in terms of leadership emergence. It is also important to note that Sherer et al. (1982) made a distinction between general self-efficacy and self esteem in that "self-efficacy concerns beliefs about ones abilities while self esteem represents an attitude about ones self worth" (p.667). It is with this in mind, that the present study intends to bring the construct of general self-efficacy into the domain of leadership emergence where it has never been formally tested.

It must also be addressed that while there are no studies of leadership emergence involving self-efficacy, there are several studies in other areas of leadership that bolster my confidence in the utility of this construct in predicting emergence. In studies on leadership aspirations (Singer, 1991; Singer, 1989a; Singer, 1989b) self-efficacy expectancies contributed significantly to the overall ratings of leadership aspirations as individuals with higher levels of efficacy had greater leadership aspirations. If high self-efficacy increases leadership aspirations then it would be a logical extension to postulate that these individuals are likely to bring these aspirations into the tasks involved in emergence

studies. In another study, Bloom and Sheerer (1992) demonstrated that increasing an individual's sense of self-efficacy was a crucial determinant to the success of their model of leadership training. Based on these studies and extrapolation from the theory behind self-efficacy I believe that there are strong conceptual grounds for hypothesizing that general self-efficacy will be positively associated with leadership emergence.

Patterns of Relevant Personality Traits

Many researchers have suggested that implementing a pattern approach is the best way to find support for one's theoretical predictions (Owens, 1978; Holland, 1987), especially when thorough well-formed patterns are utilized. On a conceptual level, there are three key aspects of an approach that utilizes personality patterns to differentiate between individuals. First, variables relevant to the domain of interest are chosen based on theory as well as on past empirical research. The relevant trait variables in this study are dominance, general self-efficacy and intelligence. Second, every individual is characterized based on a pattern of the selected variables. For example, the present research characterizes individuals as one of eight personality patterns based on a high or low standing on each of the three variables (HHH, HLH, HHL, LHH, LLH, LHL, HLL, LLL). Finally, individuals are grouped based on their personality patterns and attempts are made to differentiate among individuals based on these sub-groups.

The pattern approach has been successfully utilized in differentiating individuals, and their behaviors, and in making predictions across a wide range of domains. These domains include sexuality (Limentani, 1984), mood (McMahon & Davidson, 1986), career

choice (Tango & Uziuben, 1984), delinquency (Gibbs, 1982; Goeke, Tosi, & Eshbough, 1993), stress (de Benedittis & Lorenzetti, 1992) and achievement in women (Gustafson, 1994). As evidenced by the great amount of research, pattern-oriented approaches have been quite common in research. This approach is gaining popularity and, in fact, is frequently employed in research utilizing the Myers-Briggs Type Indicator (Myers & McCaulley, 1985), an instrument that is based on "types" or patterns.

Florin, Mednick, and Wandersman (1986) pointed out that no evidence has been put forth that convinces them that "any single variable...distinguishes between leaders and followers" (p. 808). What is needed, in addition to the examination of the association between individual variables and leadership, is the application of a pattern-oriented approach to the domain of emergent leadership. McClelland and Boyatzis (1982) identified a pattern, the Leadership Motive Pattern, that was shown to be significantly associated with success in management.

Holmes, Sholley, and Walker (1980) demonstrated that one could differentiate between leaders and followers based on personality profiles unique to each of those sub-groups. This finding led them to conclude that "leadership prediction appears to be best approached from a multivariate analysis, identifying patterns, rather than single variables to identify leaders" (p.45). These assertions have been echoed by researchers in the domain of emergent leadership (Rueb, Foti, & Zaccaro, 1990; Zaccaro et al., 1991). Specifically, Zaccaro et al. suggest an "emphasis...on a multivariate approach to individual characteristics facilitating emergence" (p.313).

Based on these findings and theoretical assumptions, the present study will incorporate a pattern approach, along with the examination of individual trait variables, in forming hypotheses regarding emergence. Utilizing dominance, intelligence and general self-efficacy to make up these patterns is based on my belief that they will be associated to a higher degree than when examined on a separate basis. Considering that there is evidence, both theoretical and empirical, that these variables will be associated with emergent leadership, there is also good reason to believe that patterns of these three traits will be associated with leader emergence.

Hypotheses

1. Dominance will be positively associated with leadership ratings and rankings.
2. Intelligence will be positively associated with leadership ratings and rankings.
3. General self-efficacy will be positively associated with leadership ratings and rankings.
4. Individuals high in dominance, general self-efficacy and intelligence will emerge as leaders on a more frequent basis than other individuals.
5. Individuals low in dominance, general self-efficacy and intelligence will emerge as leaders significantly less than other individuals.
6. Individuals high in dominance, general self-efficacy, and intelligence will emerge as leaders on a more frequent basis than individuals low in dominance, general self-efficacy and intelligence.

7a. Group members will ascribe behaviors/descriptions to emergent leaders that are consistent with the trait dominance to a significantly higher degree than to the non-leaders (as measured by the Emergent Leader Description Inventory; ELDI).

7b. Group members will ascribe behaviors/descriptions to emergent leaders that are consistent with the trait general self-efficacy to a significantly higher degree than to the non-leaders (as measured by the Emergent Leader Description Inventory; ELDI).

7c. Group members will ascribe behaviors/descriptions to emergent leaders that are consistent with the trait intelligence to a significantly higher degree than to the non-leaders (as measured by the Emergent Leader Description Inventory; ELDI).

Method

Subjects and design

The subjects were 160 male undergraduates from Virginia Polytechnic Institute and State University. Students received extra credit in Introductory Psychology for their participation. The decision to use all males was based on repeated studies (Aries et al., 1983; Carbonell, 1984; Hegstrom & Griffith, 1992) that have demonstrated that females fail to emerge as leaders in mixed-sex situations, as sex appears to nullify the effects of dominance. The subjects participated on a task in groups of four where one member of each group was high in intelligence, high in dominance, and high in general self-efficacy (as established by median splits) while another individual was low in intelligence, dominance, and in general self-efficacy. The other two group members were allowed to vary at random. The frequency of the eight possible patterns as well as the means,

medians and standard deviations for each of the three personality traits, by pattern, are presented in table 1.

-Insert Table 1 here-

Task

The task in this study was identical to one used by Zaccaro, Foti, and Kenny in their 1991 study. This task was tested (Zaccaro et al., 1991) and shown to be significantly associated with leadership style.

The task is a modified version of a manufacturing game (Foti & Cohen, 1986). The purpose of the game is to purchase raw materials (LEGO pieces), manufacture toy products (i.e., cars, boats), and sell the finished products for a profit. There were three performance sessions, each lasting for a duration of 15 minutes. Participants began with \$10,000 in play money and a price list for the first session. Costs of the raw materials and prices of the finished products were changed for each subsequent session. Each group was allowed 5 minutes prior to the first session, and only 2 minutes before sessions 2 and 3. The time between sessions was in order to increase the amount of interaction by allowing the subjects the opportunity to discuss the task and formulate a plan of action.

Trait Measures

Wonderlic Personnel Test: The Wonderlic Personnel Test (WPT; Wonderlic, 1983) was utilized in this study as a measure of general intelligence. The WPT is a 12 minute, self-administered paper and pencil test that consists of 50 items. A number of authors (Dodrill, 1981; Dodrill, 1983; Dodrill & Warner, 1988; McKelvie, 1989) have

demonstrated the favorable psychometric properties as well as the practical utility of this test. In terms of the validity of this measure, Dodrill (1981) found that the WPT produces IQ scores that highly correlate (.93) with the Wechsler Adult Intelligence Scale Full-Scale IQ (WAIS, FSIQ). The internal consistency of this measure is acceptable as the split-half reliability has ranged from .88 to .94 (Wonderlic, 1983). Dodrill (1983) also showed that despite the ease of administration and the brevity of the WPT, it is almost as stable as the WAIS-FSIQ, as the 5 year test-retest reliability is .94. This measure was scored in terms of the number right out of 50 in a period of 12 minutes.

Personality Research Form: The dominance subscale of the Personality Research Form (Jackson, 1987) was used to measure dominance. Individuals scoring high on this scale have been described as commanding, persuasive and powerful (Jackson, 1974). Sixteen statements make up this scale, for which a subject decides whether or not each statement is indicative of himself. These 16 questions were scored with a response of 1 indicating disagreement with the statement, or low dominance, and a response of 2 indicating agreement or high dominance. In other words, a score of 32 refers to the most dominant individuals whereas a score of 16 refers to the least dominant individuals.

This scale has been chosen over the traditionally utilized California Psychological Inventory (CPI), because the CPI is confounded with leadership ability. This scale has been shown (Bessmer & Ramanaiah, 1981; Helmes & Jackson, 1977, Jackson, 1974) to have more than adequate psychometric properties. Specifically, Jackson (1974) points out

that the scale has a KR-20 reliability of .85 and a 2 week test-retest reliability of .88. The internal consistency for this sample was .86.

General Self-Efficacy Scale: The General Self-Efficacy Scale (Sherer et al., 1982) was utilized in this study as a measure of general self-efficacy. This scale is designed to measure a general set of expectations that an individual carries into new situations based on past successes or failure experiences. It has been consistently demonstrated (Sherer et al., 1982; Sherer & Adams, 1983; Waller & Bates, 1991) that this scale is a valid and reliable measure of general self-efficacy and the internal consistency for this sample was .88. This scale contains 30 items, only 17 of which apply to general self-efficacy. The other 13 items are either specific self-efficacy items or distracter items. The 17 pertinent items are responded to on a 5 point scale with 1 indicating that the subject strongly disagrees that the statement applies to them and a 5 indicating that they strongly agree with the statement. Thus, a score of 17 would be the low end of the scale (indicating a low standing on GSE) whereas an 85 is indicative of the highest score on this scale.

Subject Selection

From the original sample of 245, subjects were classified into one of eight possible personality patterns (HHH, HHL, HLH, LHH, HLL, LLH, LHL, and LLL) based on their standing on dominance, general self-efficacy and intelligence; in that order. These designations were made based on a median split, on each of the trait variables of interest, and a great deal of effort was taken to avoid selecting subjects in the high, high, high and low, low low groups that were on or within one point of the median on any of the relevant

variables. Table 2 presents the descriptive statistics, for the original sample of 245 subjects, pertaining to the variables dominance, general self-efficacy and intelligence.

-Insert Table 2 here-

As a design check, it was demonstrated that the two pivotal groups in this study, high on all three traits and low on all three traits, differed significantly in terms of their means (refer to Table 1) on all three variables. Individuals high in dominance, general self-efficacy and intelligence ($M = 29.95$, $SD = 1.46$) were measured as significantly more dominant than individuals with a low, low, low pattern ($M = 24.10$, $SD = 2.55$), ($t(78) = 12.58$, $p < .01$). High, high high individuals ($M = 31.50$, $SD = 3.27$) scored significantly higher in terms of intelligence than their low, low, low counterparts ($M = 24.07$, $SD = 3.10$), ($t(78) = 10.40$, $p < .01$). The same holds true for general self-efficacy, in that high, high, high individuals ($M = 72.35$, $SD = 4.55$) were significantly higher in terms of their standing on general self-efficacy than low, low, low individuals ($M = 58.22$, $SD = 7.26$), ($t(78) = 10.42$, $p < .01$). This demonstrated that these two groups did indeed differ, in a meaningful fashion, on all three trait variables. Furthermore, a visual inspection indicated that none of the individuals comprising these groups were not within two points of the median on any of these variables.

Dependent Measures

General Leadership Impression (GLI): Leader emergence was measured using the GLI measure (Lord et al., 1984). The GLI is a five-item scale in which responses are made on a 5-point scale with anchors ranging from extreme amount (5) to nothing (1).

An example of an item from this scale is: "How much did this individual contribute to the effectiveness of the task?" Subjects rated themselves and the other members of the group on these items. Previous research (Lord et al., 1984; Zaccaro et al., 1991) has shown this scale to have high internal consistency (Cronbach's alpha = .88) and the internal consistency for this sample was a respectable .93. A variable, GLISUM, was created as one of the dependent measures in this study. This variable was simply the sum of the other three group members perceptions of an individual's leadership based on the GLI. Each individual could have an overall leadership rating (GLISUM) that ranged from 15 on the low end to 75 at the high end; again based on the summation of the other three group members' ratings of a subject on the GLI.

As a second measure of leader emergence, group members completed the following: "If you were asked to meet a second time with this exact group to work on an identical type of task, please rank in order, your preference for a leader. Indicate your choice by putting the number assigned to each group member in the space provided. Please include yourself in the rating." The rankings are as follows: 1 is for your top choice, 2 indicates your second choice, 3 your third choice and 4 as the final choice. Based on these rankings, ignoring self-ratings, we computed the percentage of times that an individual was ranked as number one. An individual's leadership ranking could range from .00 where no other group members chose them as the leader to .75 where all three other group members chose him as the leader.

Emergent Leader Description Inventory (ELDI): This measure was constructed by the present author based on a number of personality instruments including the California Psychological Inventory (CPI), and other instruments such as the Wesman Personnel Classification Test. The ELDI was utilized to assess whether labeling an individual as an emergent leader was consistent with describing/perceiving in a fashion associated with the traits of interest: dominance, intelligence, and general self-efficacy. A series of 5-point scales were created to assess subjects' descriptions of the emergent leaders in each task, in areas deemed (from the examination of personality measures) to be associated with the traits of interest. There are 3 subscales of the ELDI, one corresponding to each of the three variables. Each of the subscales contains eight items with the resulting measure consisting of 24 items. As with the GLI, subjects' scores on each subscale were based on the overall score for each of the three individuals that rated them resulting in a range of scores from 24 to 70. The overall measure of internal consistency for the ELDI was .95 whereas each subscale, dominance, intelligence and general self-efficacy, achieved slightly lower internal consistencies of .88.

Procedure

245 subjects were administered the Wonderlic Personnel Test (Wonderlic, 1983), the dominance subscale of the Personality Research Form (Jackson, 1967, 1974) and the General Self-Efficacy Scale (Sherer et al., 1982) approximately two weeks prior to participation in any task. The order of the instruments was randomized within the questionnaire in an effort to control for the potential effects of order. Extra individuals

were tested to be certain that we had enough subjects to conduct 2 separate groups of four each hour. In order to accomplish this goal we attempted to have at least 10 subjects show up each hour where only 8 were needed to achieve the necessary two groups of four. Each task session lasted for 45 minutes and allowed for a great deal of interaction.

After the arrival of anywhere between 10 and 12 subjects, the experimenter randomly chose 2 subjects to participate in each group session, after making certain that a high, high, high and a low, low, low were already in each group. The remaining 2 to 4 subjects were free to leave. In other words, the result was 2 four-person groups, participating separately, in each session. The experimenters then explained what subjects would be doing and provided them with a consent form for their participation. After the task was completed, group members rated each of their three peers and themselves on perceptions of leadership using the General Leadership Impression (GLI) and ranked each group member (and themselves) in order of leader preference if the group were to meet a second time to work on a similar task. The subjects were also administered the Emergent Leader Description Inventory after the task to see if they described/perceived the subjects who emerged as leaders in a manner consistent with the predicted traits. After the final task session all of the subjects were debriefed as to the purpose of the study.

Results

The first three hypotheses in this study predicted that dominance, general, self-efficacy, and intelligence, respectively, would be significantly associated with leadership ratings and rankings. In order to test these hypotheses the trait variables of

interest were correlated with leadership ratings, as operationalized by the sum of the GLI ratings, and leadership rankings. Table 3 presents the means, standard deviations and zero-order correlations for all of the variables germane to the hypotheses of this study.

-Insert Table 3 here-

As seen in table 3, these hypotheses were supported. Results indicated that intelligence was significantly correlated with leadership ratings ($r=.43, p<.01$) and rankings ($r=.39, p<.01$). Dominance also exhibited significant correlations with ratings ($r=.21, p<.01$) and rankings ($r=.19, p<.01$) as did general self-efficacy ($r=.31, p<.01, \text{ratings}; r=.28, p<.01, \text{rankings}$). It is also interesting to note the correlations between ratings and rankings, the two measures of leader emergence, were extremely high ($r=.75, p<.01$). This demonstrates that leniency was not a problem in the GLI ratings and thus there was limited range restriction.

The next three hypotheses were tested using the sum of GLI ratings as the operationalization for emergent leadership. A one way ANOVA with *a priori* planned comparisons was utilized to test these hypotheses. The overall test was significant ($F(7,152) = 17.46, p < .01$) indicating mean differences. As predicted in hypothesis 4, individuals measured high in dominance, general self-efficacy, and intelligence ($\underline{M} = 59.6, \underline{SD} = 6.38$) emerged as leaders on a more frequent basis than other individuals ($\underline{M} = 48, \underline{SD} = 9.53$), ($t(152) = 7.62, p < .01$). On the other hand, individuals exhibiting a low, low, low pattern on the three variables ($\underline{M} = 42.3, \underline{SD} = 7.57$) emerged as leaders significantly less when compared to all other individuals ($\underline{M} = 54, \underline{SD} = 9.25$), ($t(152) =$

-5.65, $p < .01$). As one would expect from the positive results for the last two hypotheses, hypothesis six was also supported. Individuals measured as high in all three traits ($M = 59.6$, $SD = 6.38$) emerged on a more frequent basis than individuals low in all three traits ($M = 42.3$, $SD = 7.57$), ($t(152) = 10.00$, $p < .01$). Overall, the group factor accounted for 44.58% of the variance in leader perceptions (as indicated by an ETA square of .4458).

The final three hypotheses involved the examination of other group members' perceptions of leaders versus non-leaders in terms of dominance, general self-efficacy and intelligence as measured by the ELDI. For these hypotheses, leader was operationalized as any individual with a leadership ranking of .50 or greater. In other words, at least two of the other three members in a group, not including self-nomination, rated that individual as the group leader.

All three hypotheses were supported, indicating that emergent leaders were described/perceived in a fashion consistent with a high standing in dominance, general self-efficacy and intelligence. In terms of dominance, leaders ($M = 74.7$, $SD = 5.3$) were perceived as significantly more dominant than those individuals who did not emerge as leaders ($M = 64.22$, $SD = 8.23$), ($t(158) = 7.74$, $p < .01$). The results for general self-efficacy show the same pattern with the personality of leaders ($M = 87.9$, $SD = 5.98$) being perceived as more consistent with general self-efficacy than that of non-leaders ($M = 80.3$, $SD = 5.98$), ($t(158) = 5.52$, $p < .01$). Individuals perceived as leaders ($M = 87.0$, $SD = 5.09$) and those designated non-leaders ($M = 77.7$, $SD = 7.51$) also differed significantly in terms of others' perceptions of their intelligence ($t(158) = 7.43$, $p < .01$).

In terms of additional analyses, individuals with a high standing on all three traits (HHH) were compared with other patterns off by one trait (HHL, HLH, HLL) to see if the HHH's emerged on a significantly more frequent basis. This would provide evidence for the importance of all three trait measures in the pattern associated with leadership. All Post Hoc pairwise comparisons were made using Duncan's Multiple Range Test at an alpha of $p < .01$. Individuals exhibiting a HHH pattern ($M = 59.6$, $SD = 6.38$) emerged on a more frequent basis than those low only in intelligence (HHL, $M = 47.4$, $SD = 7.98$), those low only in general self-efficacy (HLH, $M = 44$, $SD = 10.35$), and those individuals low only in dominance (LHH, $M = 51.53$, $SD = 7.36$).

Based on the same logic, individuals exhibiting a low low low pattern (LLL) on all three traits were also tested against those differing by one trait (HLL, LHL, LLH) to determine if they emerged on a less frequent basis than these other patterns. The comparison between LLL individuals ($M = 42.3$, $SD = 7.57$) and those high in dominance alone (HLL, $M = 43.7$, $SD = 12.3$) was not significant. However, individuals with a LLL pattern ($M = 42.3$, $SD = 7.57$) emerged on a significantly less frequent basis than individuals high on general self-efficacy alone (LHL, $M = 54.1$, $SD = 10.6$), and individuals high on intelligence alone (LLH, $M = 54.5$, $SD = 7.13$).

Discussion

Dominance and intelligence have been shown, previously, to be positively associated with leadership (Bass, 1981; Hegstrom & Griffith, 1992; Lord et al., 1986; Megargee, 1969; Nyquist & Spence, 1986). The present study essentially replicates these

findings but provides evidence for even stronger bivariate relationships than have been found in these past studies.

General self-efficacy has not been utilized in past research involving emergent leadership. However, based on extrapolation from theory and empirical evidence from related leadership research, I posited that it would be associated with leader emergence. The results demonstrated that its inclusion in the domain of leader emergence is indeed warranted. In the present study it was shown to be correlated, to a higher degree than even dominance, with leadership ratings and rankings. Considering these results, general self-efficacy should be utilized in future investigations of leadership and leader emergence.

Hypotheses 4-6 were all supported giving credence to the assertion that a pattern-oriented approach is a promising new direction that should be pursued within the domain of emergent leadership. The high, high, high pattern (HHH) did prove quite robust in its association with leadership emergence, as these individuals emerged on a significantly more frequent basis than all other individuals (hypothesis 4). Hypothesis 6 was also supported as HHH individuals emerged on a more frequent basis than low, low, low (LLL) individuals. The strength of the HHH pattern was further showcased in testing them against individuals that were low on only one trait variable but still high on the other two. HHH's still emerged on a significantly more frequent basis than all of these individuals. This goes a long way toward demonstrating that all three traits are critical to leader emergence and that having a high standing on only two variables does not compensate for a low standing on the other variable.

Conversely, LLL individuals emerged less frequently than other individuals; again demonstrating the importance of these three traits (hypothesis 5). Individuals low on these critical traits were not as likely to emerge as leaders in a small group situation. In terms of the additional analyses, being high on even one trait appears to make a significant difference in terms of emergence. LLL individuals emerged significantly less frequently than individuals high in only intelligence or high in only general self-efficacy. Thus, a high standing on only one trait appears to make a significant difference when compared to LLL individuals.

As a group, hypotheses 7 (a, b and c) provide evidence that individuals' perceptions of leaders were commensurate with the traits dominance, general self-efficacy and intelligence to a significantly higher degree than the perceptions of non-leaders. This speaks to the perceptual side of the equation as leaders emerge based on the perceptions of group members. Not only do individuals measured as high on these three traits emerge more frequently but raters describe/perceive these emergent leaders in a fashion consistent with these traits. This also provides indirect evidence for these traits being contained in individuals Implicit Leadership Theories.

It is also interesting to note that all three subscales of the ELDI demonstrated substantially higher correlations with both indices of emergence than with the corresponding trait measures themselves. The dominance subscale of the ELDI was highly correlated with leadership ratings ($r=.79, p<.01$) and rankings ($r=.59, p<.01$) while demonstrating much lower correlations with the dominance measure ($r=.14, p=.07$). The

general self-efficacy subscale was also highly correlated with ratings ($r=.73, p<.01$) and rankings ($r=.52, p<.01$) but exhibited low correlations with subjects' standing on general self-efficacy ($r=.14, p=.06$). The same pattern was found for the intelligence subscale as it correlated to a much greater degree with ratings ($r=.78, p<.01$) and rankings ($r=.61, p<.01$) than with the intelligence measure ($r=.31, p<.01$). One potential explanation may be the short duration of this experimental situation as an individual can only exhibit a limited number of behaviors associated with dominance, intelligence and general self-efficacy in a 45 minute period.

These findings are consistent with Implicit Leadership Theories in that they do not require behaviors associated with specific traits to be exhibited to an *extensive* degree because perceivers will expand upon exhibited behaviors. In other words, relevant behaviors must be exhibited to a degree sufficient to engage the leader prototype categories of the perceiver. Some authors may be likely to suggest common method variance (CMV) as a confound or a plausible alternative explanation for the very high correlations between the ELDI subscales and the measures of emergence. Podsakoff and Organ (1986) asserted that CMV is likely to cause spurious relationships between variables and often occurs when those measures are obtained from the same source via self-report. Williams, Cote, and Buckley (1989) also maintained that CMV is a major problem in this type of research and can account for as much as 25% of the variance. The measures in question here, the ELDI and the indices of leader emergence, were indeed taken from the same source and done so in a self-report format.

However, I believe that there is a great deal of substance to these findings and convincing arguments have been made that the common method variance "problem may in fact be mythical" (Spector, 1987, p. 442), and that Williams et al. (1989) greatly overestimated the prevalence of common method variance (Bagozzi & Yi, 1990). It is my belief that the traits contained in the ELDI, and their high degree of association with leadership, are greatly responsible for the findings; not the common method. Although speculative, imagine an ELDI created based on three traits that have been shown to be negatively correlated with leadership, such as passivity, pessimism and introversion. The ELDI would, most likely, be negatively not positively correlated with emergence. Another possible scenario, is an ELDI based on traits that are not correlated with emergence such as conservatism, sensitivity, and athleticism (Lord et al., 1984; Lord et al., 1986; Mann, 1959). In this situation I do not believe that correlations approaching the same magnitude or demonstrating the same pattern would be found. Thus, the ELDI would not be related to emergence and would not be useful in distinguishing the perceptions of leaders from the perceptions of non-leaders. While it is possible that Common Method Variance may have inflated the correlations present in this study, there is no reason to believe that it was largely responsible for them.

These results go a long way toward demonstrating that the pattern-oriented approach utilized in this study can be very successful in future research of leader emergence. The traits examined in this research proved to be quite effective in terms of differentiating between leaders and non-leaders. The pattern-oriented approach, using

these traits as well as other theoretically meaningful traits, needs to be examined in greater detail.

Future Research

The HHH pattern utilized in this study needs to be tested against individuals possessing alternative patterns derived from theoretical and empirical associations with leadership as there is no one best way to emerge as a leader. It would be more robust to compare this pattern with individuals that are high on all variables instead of only against patterns in which individuals have a low standing on at least one variable. For example, individuals high in dominance, intelligence, and general self-efficacy could be compared with individuals high in self-confidence, self-monitoring, and integrity. Better yet, as a more stringent test of the importance of these three traits in the leadership pattern, they could be tested against individuals high on two of these three variables and also high on another variable that has been demonstrated as related to leadership, such as self-monitoring. In other words, different patterns need to be examined with the goal of finding the one or ones that demonstrate the strongest relationship with emergent leadership.

Another possibility for future research is the examination of the behavioral domain of the emergent leaders. This could be accomplished by videotaping the experiment and coding subjects' behaviors in order to examine their congruence with perceptions and traits. This would be a more comprehensive approach in that it allows for an assessment of traits as manifested in emergent leaders behavior (the videotapes) in addition to traits as

possessed by the leaders (trait measures), and traits as perceived by the non-leaders (ELDI). Future research should also address the role of effectiveness, a long neglected variable, in emergent leadership. Researchers are yet to address such important questions as: Is the same pattern that is associated with an individual's emergence as a leader also linked to effective leadership? Are leaders more effective when appointed or when allowed to emerge in a group situation?

It would also be of great value to conduct a pseudo-replication of this experiment in an organizational setting or perhaps even an assessment center. An organization that utilizes self-contained work teams without an appointed leader would be required. Trait measures would be administered just as in a controlled laboratory setting to determine individuals standing on dominance, intelligence and general self-efficacy. Obviously, the manufacturing game would not be suitable in this setting so an organization that utilizes a similar production-oriented task would be preferred. After an extended time period, individuals would fill out the GLI, the ELDI and rank the other individuals in terms of leadership preference. It would be very interesting to see if the high degree of association found between the HHH pattern and leader emergence would be present in a real world setting. Although the field setting would not allow for the amount of control available in the laboratory it would be the first step toward generalizing and applying the findings of this study.

Table 1 Descriptive statistics for the eight patterns involved in the study.

Pattern	Freq.	<u>Dominance</u>			<u>General Self-Efficacy</u>			<u>Intelligence</u>		
		Mean	Median	StDev	Mean	Median	StDev	Mean	Median	StDev
HHH	40	29.95	30	1.46	72.35	72.0	4.55	31.50	30.5	3.27
HHL	15	29.73	29	1.33	71.53	71	2.67	21.47	23	5.54
HLH	6	29.50	29.5	.55	60.50	61	3.62	33.50	34.5	2.43
HLL	7	30.26	31	.95	61.57	61	3.35	21.14	21	2.67
LHH	13	26.23	26	3.37	68	68	5.65	3.177	32	4.15
LLH	26	24.26	25	2.39	57.34	58.5	5.83	32	31	2.93
LHL	13	24.46	24	3.20	72.61	71	4.48	23.92	24	3.46
LLL	40	24.10	24	2.55	58.22	60	7.26	24.07	25	3.10

*The order of the patterns is as Follows: Dominance, General Self-Efficacy, and Intelligence.

**N=160

Table 2 Descriptive statistics for the subjects on the trait measures

N = 245	Mean	SD	Median	Kurtosis	Skewness	Minimum	Maximum
General Self-Efficacy	63.32	8.48	65	1.78	-.783	25	84
Dominance	27.20	3.66	28	.636	-.437	16	32
Intelligence	27.8	5.55	28	1.09	-.403	5	41
N = 160	Mean	SD	Median	Kurtosis	Skewness	Minimum	Maximum
General Self-Efficacy	65.05	8.61	65	2.04	-.78	25	81
Dominance	26.79	3.51	27	-.08	-.547	16	32
Intelligence	27.81	5.57	28.5	1.09	-.415	5	41

TABLE 3 Descriptive statistics and intercorrelations of independent and dependent variables

	MEAN	STDEV	1	2	3	4	5	6	7	8
1. Dominance	26.7	3.51		.443*	.127	.1412	.0197	.0847	.208*	.188*
2. GSE	65.0	8.62			.0583	.1472	.0419	.1545	.313*	.275*
3. Intelligence	27.7	5.57				.333*	.243*	.316*	.427*	.387*
4. ELDDIDOM	66.9	8.88					.730*	.695*	.788*	.594*
5. ELDIGSE	82.3	8.34						.818*	.734*	.519*
6. ELDIINT	80.1	8.07							.776*	.609*
7. GLISUM	50.9	10.16								.749*
8. Ranking	.25	.25								

*p<.01

REFERENCES

- Alston, W.P. (1975). Traits, consistency and conceptual alternatives for personality theory. Journal for the Theory of Social Behaviour, 5, 17-48.
- Aries, E.J., Gold, C., & Weigel, R.H. (1983). Dispositional and situational influences on dominance behavior in small groups. Journal of Personality and Social Psychology, 44(4), 779-786.
- Bagozzi, R.P., & Yi, Y. (1990). Assessing method variance in multitrait-multimethod matrices: The case of self-reported affect and perceptions at work. Journal of Applied Psychology, 75(5), 547-560.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37, 122-147.
- Barnlund, D.C. (1962). Consistency of emergent leadership in groups with changing tasks and members. Speech Monographs, 29, 45-52.
- Barrios, F., & Neihaus, J. (1985). The influence of smoker status, smoking history, sex, and situational variables on smoker's self-efficacy. Addictive Behaviors, 10, 425-429.
- Bass, B.M. (1981). Stogdill's handbook of leadership: A survey of theory and research. New York: Free Press.

Bessmer, M.A., & Ramanaiah, N.V. (1981). Convergent and discriminant validity of selected need scales from the adjective check list and personality research form.

Psychological Reports, 49, 311-316.

Bloom, P.J., & Sheerer, M. (1992). Changing organizations by changing individuals: A model of leadership training. Urban Review, 24(4), 263-286.

Cantor, N., & Mischel, W. (1979). Prototypes in person perception. In L. Berkowitz (Ed), Advances in experimental social psychology (Vol. 12, pp. 3-52). New York: Academic Press.

Carbonell, J.L. (1984). Sex roles and leadership revisited. Journal of Applied Psychology, 69, 44-49.

Chambliss, C.A., & Murray, E.J. (1979). Efficacy attribution, locus of control, and weight loss. Cognitive Therapy and Research, 3, 349-353.

de Benedittis, G., & Lorenzetti, A. (1992). Minor stressful life events (daily hassles) in chronic primary headache: Relationship with MMPI personality patterns.

Dodrill, C.B. (1981). An economical method for the evaluation of general intelligence in adults. Journal of Consulting and Clinical Psychology, 49, 668-673.

Dodrill, C.B. (1983). Long-term reliability of the Wonderlic Personnel Test. Journal of Consulting and Clinical Psychology, 51, 316-317.

Dodrill, C.B., & Warner, M.H. (1988). Further studies of the Wonderlic Personnel Test as a brief measure of intelligence. Journal of Consulting and Clinical Psychology, 56(1), 145-147.

Fiedler, F.E., & Garcia, J.E. (1987). New Approaches to Effective Leadership. New York: John Wiley & Sons.

Fiske, S.T., & Taylor, S.E. (1991). Social Cognition (2nd ed.). New York, NY: McGraw-Hill.

Fleischer, R.A., & Chertkoff, J.M. (1986). Effects of dominance and sex on leader selection in dyadic work groups. Journal of Personality and Social Psychology, 50, 94-99.

Florin, P., Mednick, M., & Wandersman, A. (1986). Cognitive social learning variables and the characteristics of leaders. Journal of Applied Social Psychology, 16, 808-830.

Foti, R.J., & Cohen, (1986). Self-monitoring and leadership emergence. In J. Kennedy (chair), Attempting to solve the leadership puzzle. Symposium conducted at the Annual meeting of the American Psychological Association, Washington, D.C.

Foti, R.J., Fraser, S.L., & Lord, R.G. (1982). Effects of leadership labels and prototypes on perceptions of political leaders. Journal of Applied Psychology, 67(3), 326-333.

Gibbs, J.I. (1982). Personality patterns of delinquent females: Ethnic and sociocultural variations. Journal of Clinical Psychology, 38(1), 198-206.

Goeke, K.R., Tosi, D.J., & Eshbaugh, D.M. (1993). Personality patterns of male felons in a correctional halfway house setting: An MMPI typological analysis. Journal of Clinical Psychology, 49(3), 413-422.

Gustafson, S.B. (1994). Female underachievement and overachievement: Parental contributions and long-term consequences. International Journal of Behavioral Development, 17(3), 469-484.

Hegstrom, J.L., & Griffith, W.I. (1992). Dominance, sex, and leader emergence. Sex Roles, 27(5/6), 209-220.

Helmes, E., & Jackson, D.N. (1977). The item factor structure of the personality research form. Applied Psychological Measurement, 1(2), 185-194.

Holland, J.L. (1987). Some speculation about the investigation of person-environment transactions. Journal of Vocational Behavior, 31, 337-340.

Hollander, E.P., & Julian, J.W. (1969). Contemporary trends in the analysis of leadership processes. Psychological Bulletin, 71, 387-397.

Holmes, C.M., Sholley, B.K., & Walker, W.E. (1980). Leader, follower, and isolate personality patterns in black and white emergent leadership groups. The Journal of Psychology, 105, 41-46.

Jackson, D. N. (1974, 1987). Personality Research Form Manual. Goshen, NY: Research Psychologists Press.

Kenny, D.A. (1981). Interpersonal perception: A multivariate round robin analysis. In M.B. Brewer & B.E. Collins (Eds.), Scientific Inquiry and the Social Sciences: A volume in honor of Donald T. Campbell. San Francisco: Jossey-Bass, 1981.

Kenny, D.A. (1988). Interpersonal perception: A social relations analysis. Journal of Social and Personal Relationships, 5, 247-261.

- Kenny, D.A., & Hallmark. (1992). Rotation designs in leadership research. Leadership Quarterly, 3(1), 25-41.
- Kenny, D.A., & Zaccaro, S.J. (1983). An estimate of variance due to traits in leadership. Journal of Applied psychology, 68(4), 678-685.
- Kotter, J.P. (1988). *The Leadership Factor*. New York: The Free Press.
- Limentani, A. (1984). To the limits of male heterosexuality: The vagina-man. Analytic Psychotherapy and Psychopathology, 1(2) 115-129.
- Locke, E.A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. Journal of Applied Psychology, 69(2), 241-251.
- Lord, R.G., De Vader, C.L., & Alliger, G.M. (1986). A meta-analysis of the relation between personality traits and leadership perceptions: An application of validity generalization procedures. Journal of Applied Psychology, 71(3), 402-410.
- Lord, R.G., Foti, R.J., & De Vader, C.L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. Organizational Behavior and Human Performance, 34, 343-378.
- Lord, R.G., Foti, R.J., & Phillips, J.S. (1982). A theory of leadership categorization. In J.G. Hunt, U. Sekeran, C. Schriesheim (Eds.), Leadership: Beyond Establishment Views (pp. 104-121). Carbondale: Southern Illinois University.
- Mann, R.D. (1959). A review of the relationships between personality and performance in small groups. Psychological Bulletin, 56, 241-270.

McClelland, D.C., & Boyatzis, R.E. (1982). Leadership Motive Pattern and long-term success in management. Journal of Applied Psychology, *67*(6), 737-743.

McKelvie, S.J. (1989). The Wonderlic Personnel Test: Reliability and validity in an academic setting. Psychological Reports, *65*, 161-162.

McMahon, R.C., & Davidson, R.S. (1985). An examination of the relationship between personality patterns and symptom/mood patterns. Counseling Psychology, *49*(5), 552-556.

Megargee, E.I. (1969). Influence of sex roles on the manifestation of leadership. Journal of Applied Psychology, *53*, 377-382.

Myers, I.B., & McCaulley, M.H. (1985). Manual: A guide to the development and use of the Myers-Briggs Type Indicator. Palo Alto, CA: Consulting Psychologists Press.

Nyquist, L.V., & Spence, J.T. (1986). Effects of dispositional dominance and sex role expectations on leadership behaviors. Journal of Personality and Social Psychology, *50*(1), 87-93.

Offerman, L.R., & Gowing, M.K. (1990). Organizations of the future: Changes and challenges. American Psychologist, *45*(2), 95-108.

Offerman, L.R., Kennedy, J.K. Jr., & Wirtz, P.W. (1994). Implicit Leadership Theories: Content, Structure, and Generalizability. Leadership Quarterly, *5*(1), 43-58.

Owens, W.A. (1978). Moderators and subgroups. Personnel Psychology, *31*, 243-247.

Podsakoff, P.M., & Organ, D.W. (1986). Self-reports in organizational research: Problems and prospects. Journal of Management, 12(4), 531-544.

Rueb, J., Foti, R.J., & Zaccaro, S.J. (1990). Traits, self-monitoring, and leadership emergence. Presented at the Annual Conference for the Society for Industrial Organizational Psychology, Miami, FL.

Schneider, D.J. (1973). Implicit Personality Theory: A review. Psychological Bulletin, 79(5), 294-309.

Shelton, S.H. (1990). Developing the construct of general self-efficacy. Psychological Reports, 66, 987-994.

Sherer, M., & Adams, C. (1983). Construct validity of the self-efficacy scale. Psychological Reports, 53, 899-902.

Sherer, M., Maddux, J.E., Mercadante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R.W. (1982). The self-efficacy scale: Construction and validation. Psychological Reports, 51, 663-671.

Singer, M. (1989). Gender differences in leadership aspirations. New Zealand Journal of Psychology, 18(1), 25-35.

Singer, M. (1990). Cognitive correlates of adolescents' aspirations to leadership: A developmental study. Journal of Adolescence, 13(2), 143-155.

Singer, M. (1991). The relationship between employee sex, length of service and leadership aspirations: A study from valence, self-efficacy and attribution perspectives. Applied Psychology: An International Review, 40(4), 417-436.

Spector, P.E. (1987). Method variance as an artifact in self-reported affect and perceptions at work: Myth or significant problem? Journal of Applied Psychology, *72*(3), 438-443.

Stogdill, R.M. (1948). Personal factors associated with leadership: A survey of the literature. Journal of Personality, *25*, 35-71.

Sundstrom, E., DeMeuse, K.P., & Futrell, D. (1990). Work Teams: Application and effectiveness. American Psychologist, *45*(2), 120-133.

Tango, R.A., & Uziuban, C.U. (1984). The use of personality components in the interpretation of career indecision. Journal of College Student Personnel, *25*(6), 509-512.

Tipton, R.M., & Worthington, E.L. (1984). The measurement of generalized self-efficacy: A study of construct validity. Journal of Personality Assessment, *48*, 545-548.

Waller, K.V., & Bates, R.C. (1991). Health locus of control and self-efficacy beliefs in a healthy elderly sample. American Journal of Health Promotion, *6*(4), 302-309.

Weinberg, R.S., Yukelson, D., & Jackson, A. (1980). Effect of public and private efficacy expectations on competitive performance. Journal of Sport Psychology, *2*, 340-349.

Williams, L.J., Cote, J.A., Buckley, M.R. (1989). Lack of method variance in self-reported affect and perceptions at work: reality or artifact? Journal of Applied Psychology, *74*(3), 462-468.

Wonderlic, E.F. (1983). Wonderlic Personnel Test Manual. Northfield, IL: E.F. Wonderlic & Assoc.

Zaccaro, S.J., Foti, R.J., & Kenny, D.A. (1991). Self-monitoring and trait-based variance in leadership: An investigation of leader flexibility across multiple group situations. Journal of Applied Psychology, 76(2), 308-315.

Appendix A
Personality Research Form;
Dominance subscale

1. I feel confident when directing the activities of others.
2. I would make a poor military leader.
3. I would like to be a judge.
4. I avoid positions of power over other people.
5. I try to control others rather than permit them to control me.
6. I don't like to have the responsibility for directing the work of others.
7. I would like to play a part in making laws.
8. I have little interest in leading others.
9. In an argument, I can usually win others over to my side.
10. I feel uneasy when I have to tell people what to do.
11. The ability to be a leader is very important to me.
12. Most community leaders do a better job than I could possibly do.
13. I am quite effective in getting others to agree with me.
14. I am not very insistent in an argument.
15. I would like to be an executive with power over others.
16. I would not want to have a job enforcing the law.

Appendix B

The General Self-Efficacy Scale

1. I like to grow house plants.
2. When I make plans, I am certain I can make them work.
3. One of my problems is that I cannot get down to work when I should.
4. If I can't do a job the first time, I keep trying until I can.
5. Heredity plays the major role in determining one's personality.
6. It is difficult for me to make new friends.
7. When I set important goals for myself, I rarely achieve them.
8. I give up on things before completing them.
9. I like to cook.
10. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come see me.
11. I avoid facing difficulties.
12. If something looks too complicated, I will not even bother to try it.
13. There is some good in everybody.
14. If I meet someone interesting who is very hard to make friends with, I'll soon stop trying to make friends with that person.
15. When I have something unpleasant to do, I stick to it until I finish it.
16. When I decide to do something, I go right to work on it.
17. I like science.
18. When trying to learn something new, I soon give up if I am not initially successful.

19. When I'm trying to become friends with someone who seems uninterested at first, I don't give up very easily.
20. When unexpected problems occur, I don't handle them well.
21. If I were an artist, I would like to draw children.
22. I avoid trying to learn new things when they look too difficult for me.
23. Failure just makes me try harder.
24. I do not handle myself well in social gatherings.
25. I very much like to ride horses.
26. I feel insecure about my ability to do things.
27. I am a self-reliant person.
28. I have acquired my friends through my personal abilities at making friends.
29. I give up easily.
30. I do not seem capable of dealing with most problems that come up in my life.

Appendix C

General Leadership Impression

1. How much did this member contribute to the effectiveness of the task?
2. What degree of influence did this member exert in determining the final outcome of the task?
3. How much leadership did this member exhibit?
4. How much control over a group's activities did this member exhibit?
5. If you had to choose a leader for a task, how willing would you be to vote for this member as leader?

Appendix D
Emergent Leader Description
Inventory

General Self-Efficacy subscale:

1. He demonstrated a great deal of effort on this task.
2. He was very interested in the task, from start to finish.
3. He demonstrated a great deal of self confidence.
4. He took part in defining the strategies of the group.
5. He persevered in trying to complete the task even when the group was facing difficulties.

6. He seemed to be bored throughout most of the task.
7. He did not try very hard during the group task.
8. He was not very sure of himself during the group task.

Dominance subscale:

1. He had a strong desire to control the direction and strategy of the group.
2. He was very persistent in letting his opinions be known.
3. He was very judgmental and often disapproved of the opinions of the other group members.

4. He was very aggressive in his interactions with the group.
5. He seemed to have advice about every aspect of the group task.
6. He was very accepting of others and their opinions.
7. He seemed to be very tentative and rarely spoke.
8. He readily allowed other members of our group to decide our strategy.

Intelligence subscale:

1. He was very insightful during the task.
2. His suggestions seemed to be well thought out.
3. The group utilized many of his ideas in completing the task.
4. He was quick and clever in his thoughts on how to best perform the task.
5. He appeared to be very intelligent.
6. He often made comments that made little or no sense.
7. His suggestions made little or no contribution to the groups completion of the task.
8. He took longer than the other group members to figure out what was going on in the task.

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EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

-M.S. in Industrial /Organizational Psychology.

UNIVERSITY OF CONNECTICUT, B.A. in Psychology (1992).

PRESENTATIONS AND PUBLICATIONS

- Smith, J. A., Buchanan, L. B., Hauenstein, N. M. A., & Herrera, E. Goal Setting and Human Performance. Presenting at the 10th annual conference for the Society of Industrial Organizational Psychology, May, 1995, Orlando, Florida (Also submitted for publication).
- Kenny, D. A., Kiefer, S., Smith, J. A., Ceplenski, P. & Kulo, J. Circumscribed Accuracy among Well-Acquainted Individuals. Journal of Experimental Social Psychology (In Press).
- Smith, J.A., & Foti, R.J. A New Approach to the Study of Emergent Leadership: The Application of Personality Patterns Based on General Self-Efficacy, Intelligence, and Dominance (In Preparation).
- Hauenstein, N.M.A, Smith, J.A., Buchanan, L.B., DePasquale, J., & Casino, S. The Effects of Subject Populations on the Outcomes of Experiments: A Meta-analysis (In Preparation).

RELEVANT SKILLS AND COURSEWORK

- Advanced seminar on job analysis: Task and worker oriented methods, rating scale metric issues and methods of collecting data. Conceptual and applied work with The Dictionary of Occupational Titles (DOT), Common Metric Questionnaire (CMQ), Position Analysis Questionnaire (PAQ), and Functional Job Analysis (FJA).
- Multiple regression, factor analysis, structural equation modeling and Item Response Theory.
- Performance appraisal, testing, selection, validation, training, fairness, utility, knowledge of the EEOC guidelines, Title 7 and the American's with Disabilities Act.
- Proficiency in SPSS-X and SAS, WESTLAW, Freelance Graphics, and word processing programs.

PROFESSIONAL EXPERIENCE

LOS ANGELES CLIPPERS (N.B.A.)

- Marketing and sales representative.
- Responsible for developing clientele, creating packages for corporations and small businesses, delivering presentations, and managing new and old accounts.
- Developed and honed sales skills and achieved representative of the month (Most sales in one month).
- Evaluated sales and marketing strategies and contributed to the installation of new policies.
- Learned the balance between working competitively and working as a successful sales unit.

DECK DOCTORS

- Entrepreneur of a deck cleaning and sealing service from 1989-1991.
- Hired and managed up to ten employees.
- Ordered all raw materials, balanced budget and paid employees, created fliers and other advertising as well as giving presentations to prospective customers, delegated authority and assumed responsibility for the successful completion of all jobs.

PROFESSIONAL AFFILIATIONS

- American Psychological Association.
- Society for Industrial and Organizational Psychology.

ACTIVITIES AND ACHIEVEMENTS

- University of Connecticut Men's Varsity Soccer 1988-1992.
- 4 year member of Sigma Chi fraternity.
Positions: President, Rush Chairman and 3 year member of the Executive Committee.
- Reader for a blind graduate student
- Extensive travel throughout Europe in 1988 and 1993.
- Soccer, Basketball, Scuba diving, Squash, Writing, and Computers.

Jeff Smith