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**Leadership style and leader perceptions of subordinate
attributes: The metamorphic effects of autocratic leadership**

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City University of New York, 1991

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Leadership Style and Leader Perceptions
of Subordinate Attributes:
The Metamorphic Effects of Autocratic Leadership

by

Ronald M. Festa

A dissertation submitted to the Graduate Faculty in
Psychology in partial fulfillment of the requirements
for the degree of Doctor of Philosophy, The City
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1991

This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

**LEADERSHIP STYLE AND LEADER PERCEPTIONS OF
SUBORDINATE ATTRIBUTES: THE METAMORPHIC
EFFECTS OF AUTOCRATIC LEADERSHIP**

by

Ronald M. Festa

Advisor: Professor Joel Lefkowitz

Kipnis (1976, 1987) presented a theory, referred to as "the metamorphic effects of power", which suggests that the successful use of influence or control over an individual could have a number of unintended effects on the "powerholder". It has been hypothesized that these unintended effects may lead a "powerholder" to, among other things, devalue the overall worth of the target individual(s), and desire the use control/influence tactics in future interactions with the target individual(s). The present study attempted to investigate the proposed metamorphic effects of power theory within the context of leader-subordinate relationships. Leadership style (democratic, autocratic) and reported group performance (low, average, high) were experimentally manipulated within a 2x3 between-subjects

design. Each leader (N=131) was instructed to portray either an autocratic or democratic leadership style while leading two subordinates in the performance of a problem solving task. In an attempt to investigate the hypothesized metamorphic effects at varying levels of performance, each group was provided bogus performance feedback (low, average, or high) upon completion of the task. The reported group performance manipulation results were also examined to determine whether leaders relied heavily upon implicit theories of group performance in their evaluations of participant performance and attributes. The results show that autocratic and democratic style leaders did not differ significantly in their evaluations of themselves, or of their subordinates. Although these results did not support the hypothesized metamorphic effects of power theory, considerable support was obtained for the implicit performance theory hypotheses. It was found that leaders of "higher performing groups" (as defined by the bogus reported group performance) viewed their subordinates, and themselves, as having exhibited more positive behaviors, and being more effective, during the performance of this task. Future research directions and possible boundary conditions for the hypothesized metamorphic effects of power theory are also discussed.

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Leadership has been one of the most widely researched and discussed topics in Industrial/Organizational Psychology. The sheer volume of research related to this construct can be evidenced by the over 5,000 references cited in the Handbook of Leadership (Bass, 1981). As Vroom (1983) noted, "[t]here are few problems of interest to behavioral scientists with as much apparent relevance to the problems of society as the study of leadership" (p. 1527). Despite the vast accumulation of empirical data aimed at gaining a better understanding of leadership, it is obvious that this topic is quite complex and difficult to explain. In 1959, Bennis stated that, "[p]robably more has been written and less known about leadership than any other topic in the behavioral sciences" (p. 259). Almost twenty years later, Sims (1977) expressed many of the same concerns that Bennis had back in 1959.

A review of the leadership literature, from the early trait theories (see Stogdill, 1948) through some of the more recently proposed interactive theories of Dansereau, Graen, and Haga (1975), Hollander (1979), and Yukl (1981), reveals that researchers have been increasingly recognizing the importance of gaining a

better understanding of the leader-follower relationship. Despite a gradual movement toward research designed to investigate this relationship, there is a great deal of information still to be learned about leader/follower interactions.

In 1951 Katz pointed out that, "[l]eadership is a relation involving two terms and it is impossible to study the influencing agent without also studying the people being influenced" (p. 140). However, Hollander (1985) noted that it wasn't until the late 1960s that many researchers began to consider the potential effects of follower behavior on the behavior of the leader. Since that time, many researchers have attempted to better understand the potential influence of follower behavior on the leader's subsequent behavior toward that person (see e.g., Hollander, 1979; Dansereau, Graen & Haga, 1975).

One issue which has been almost neglected thus far by researchers is the potential influence of the leader's behavior on his/her own beliefs and subsequent behavior toward followers. Evidence exists in the social psychology literature to suggest that further investigation of this relationship may provide important information to our present base of knowledge in the area of leadership.

Research conducted by Kipnis and his colleagues (e.g., Kipnis, 1972; Kipnis, 1984a; Kipnis, Castell, Gergen & Mauch, 1976) indicates that when an individual controls or influences the behavior of another (or others), the "influencing agent" (or, using Kipnis' terminology, the "powerholder") will then tend to devalue the worth of those over whom s/he had exerted control or influence. It has been suggested that, in situations involving influence/control, the influencing agent can come to believe that his/her influence and/or control, rather than the target person's own abilities or motivation, was the cause of the target person's subsequent behavior and performance. As a result, the influencing agent may perceive the target person's behavior as being externally controlled and, consequently, devalue the worth of that individual, regardless of his/her true level of knowledge, skills, abilities, and motivation (Kipnis, 1976, 1984a).

Although it is difficult to explain why individuals may tend to devalue the worth of others they believe are not in control of their own behavior, Kipnis (1972) offered the following:

Perhaps as B. F. Skinner points out, Western man [sic] balks at information which sets limits on his conception of himself as an agent of free will. By extension, we may also desire to avoid those persons who appear not to be in control of their own behavior, and

at some level feel contemptuous of them. (p. 40)

Kipnis (see e.g., 1976, 1987) uses the term "the metamorphic effects of power" to describe the negative effects which could result from the successful employment of strong influence tactics. It has been hypothesized that the metamorphic effects of power will lead an influencing agent to: (a) increase the number of attempts to influence the behavior of the target individual (i.e., promote movement away from democratic systems); (b) attribute much of the target individual's performance to the influencing agent's own control, rather than that individual's motivation or ability to perform well; (c) devalue the worth of the target individual; (d) desire a greater degree of social distance from the target individual; (e) experience an increased level of self-esteem; and, (f) evaluate his/her own overall effectiveness higher than that of the target individual (Kipnis, 1976).

Kipnis (1987) has also postulated that, "once the perception of control has been established, influencing agents may be reluctant to share power -- not necessarily because they are infatuated with power and with the idea of controlling others, indeed such beliefs may be abhorrent to them -- but rather because they genuinely believe that target persons are

incapable of participating in the democratic process" (p. 34).

The hypothesized metamorphic effects of power have been evidenced in a number of studies, including field studies of dating and married couples (Kipnis, Castell, Gergen, & Mauch, 1976), housewives and housemaids (Kipnis et al., 1976), and in experimental studies of simulated business relationships (Kipnis, 1972; Kipnis, Schmidt, Price, & Stitt, 1981). As an example, in the field studies of dating and married couples, it was found that the use of strong influence tactics was significantly related to control over decision making, less expression of affection, and less favorable evaluations of partners.

The metamorphic effects of power model suggests that the mere act of successfully exerting control over another leads the powerholder to devalue the worth of the target individual(s). Conversely, one could argue that the influencing agents used strong influence tactics because they already held a low opinion of the target individuals. The major difficulty in interpreting the results of correlational studies such as those mentioned above is that it is impossible to determine causality. As a result, it is important to subject theories such as this to investigation through well-designed experimental studies.

The leader/follower relationship may offer an ideal context in which such effects could be investigated. Leadership, by definition, implies some degree of control or influence over others (Yukl, 1981). It appears that the leader/follower relationship may closely parallel the situations which Kipnis (1972, 1984a, 1987) has identified as being most likely to foster the emergence of the hypothesized metamorphic effects. Based on the metamorphic effects of power theory, it would not be surprising to find that leaders who employ a more autocratic (i.e., controlling) style may tend to devalue the worth of their followers. In the only direct experimental study of this issue to date, Kipnis et al. (1981) found some evidence to suggest that the metamorphic effects of power may play an important role in the leader/follower relationship.

The present study will attempt to investigate, explain, and extend the hypothesized "metamorphic effects of power" theory within the context of leadership theory. This study will attempt to experimentally evaluate the effects of leadership style (autocratic, democratic) and reported group performance level (high, average, or low) on the leader's beliefs regarding the worth of him/herself and his/her followers. In addition, an attempt will be made to provide an explanation of the metamorphic effects of

power in terms of research pertaining to attribution theory and other cognitive processes (e.g., cognitive categorization, implicit theories).

Metamorphic Effects of Power

Recently, Kipnis (1987) wrote an enlightening article on the use of behavioral technology in which he cautioned psychologists about the unintended adverse effects which may result when a person exerts control or influence over the behavior of another individual (or group of individuals). In this article, Kipnis argued that we must begin to better understand the changes which may occur within an influencing agent (i.e., an individual who exerts influence over another) when s/he successfully controls the behavior of another. He specifically warned psychologists that, because of their considerable power to influence opinions and behavior, they themselves need to be aware of the proposed "metamorphic effects of power".

The metamorphic effects of power, according to Kipnis (see e.g., 1972, 1984a, 1987), refer to changes which may occur within an influencing agent as a result of the successful employment of some type of behavioral influence strategy. These metamorphic effects may provide insight into how the use of power and influence can transform a leader's perceptions of him/herself as

well as of the less powerful. Kipnis (1976) stated the basic premise of the metamorphic effects of power in the following way:

The more a powerholder attempts to influence a target person's behavior using directive and controlling means of influence, and this influence, is followed by compliance, the more likely the powerholder is to believe that the target's behavior is not self-controlled, but controlled by the powerholder. (p. 184)

Experimental studies conducted in various settings by Kipnis and his colleagues (see Kipnis, 1984a) have found that when a person successfully exercises the use of power or influence over another individual, the powerholder may, as a result of this act, experience a predictable shift in his/her beliefs, attitudes, and behavior. Although increased use of social power may make target individuals more compliant, the metamorphic model predicts that this increased control will also lead influencing agents to move from a sense of gratitude to one of indifference and arrogance (Kipnis, 1987). Kipnis (1976) suggests that "[t]o the extent that powerholders believe that they have caused a target's behavior, powerholders are likely to devalue the target's worth" (p. 196). In addition to the studies conducted by Kipnis and his colleagues, effects such as those outlined above have also been reported by

other researchers (e.g., Dutton, 1973; Haney & Zimbardo, 1976; Kruglanski, 1970; Strickland, 1958).

The theory behind the metamorphic effects of power model, as outlined by Kipnis (1984a), proposes that:

The successful use of strong [influence] tactics affects powerholders' beliefs about the target of influence in predictable ways. First, it increases the powerholder's sense of control over the target person. This is because compliance is attributed by powerholders to their own demands and orders rather than the free choice of the target person. For instance, if a manager said to an employee, 'I insist that you do what I say', and the employee subsequently complied, a reasonable inference by the manager is that his orders caused subsequent compliance. Such an inference is less likely to be made if the manager said (and meant): 'Here's what I would like you to do, but you decide for yourself.' Compliance subsequent to this second tactic is more likely to be attributed by the manager to the employee's own decision to comply. (p. 131)

It is not a novel idea to suggest that negative effects such as those being espoused in this paper may result from situations involving influence and control. As Kipnis (1976) indicated, the existence of metamorphic effects can be recognized in some of the earliest writings concerning the use of power and influence. Kipnis (1976) cited many examples throughout history which have alluded to the existence of these metamorphic effects (e.g., the writings of ancient Greek philosophers such as Sophocles and Thucydides, and accounts of the lives of many famous individuals,

including Joseph Stalin and John D. Rockefeller). It is important to note, however, that the metamorphic effects of power are not limited to individuals with great institutional power and/or influence capability, they can be evidenced in almost all aspects of our lives.

In 1972 Kipnis first attempted to investigate whether the successful control or influence of others might lead to predictable changes in an influencing agent. To test these hypotheses Kipnis (1972) developed a business simulation in which supervisors had control over the "behavior" of a group of employees (unseen confederates of the experimenter, who were supposedly working in another building). In this study, Kipnis (1972) manipulated the range of institutional powers (control over pay increase/decrease, transfer, and firing decisions) available to 28 university juniors and seniors serving as supervisors. In the "High Power" experimental condition, supervisors had use of a wide range of institutional powers. In the "No Power" condition the supervisors did not have access to these forms of power. As predicted, Kipnis (1972) found that the successful use of institutional powers (as evidenced in the High Power condition) lead to all but one of the hypothesized metamorphic effects of power

(the powerholders did not experience an increased level of self-esteem).

Only one study to date (Kipnis, Schmidt, Price & Stitt, 1981) has attempted to directly investigate whether differences in leadership style could affect the emergence of the metamorphic effects of power. In this study, undergraduate students were randomly assigned to leadership roles for the purpose of leading a group in a paper airplane production task. Each group leader was then randomly assigned to either an autocratic or democratic leadership style condition. Prior to working on the task, each group leader was provided written instructions describing the behaviors to be exhibited in order to effectively portray the style which s/he had been assigned.

Kipnis et al. (1981) hypothesized that, when applied to a leadership situation, two competing models could explain the proposed relationship between leadership style and employee evaluations. The performance-evaluation model (Kipnis et al., 1981), shown in Figure 1, suggests that a democratic leadership style would lead to improved group performance which, in turn, would lead to more favorable employee evaluations. In contrast, Figure 2 outlines the power-usage model (Kipnis, et al., 1981), which is consistent with the metamorphic effects of

power model. The power-usage model begins by proposing that democratic leadership would be associated with the use of non-controlling influence tactics. In turn, the use of non-controlling tactics (followed by positive performance) would allow the leader to attribute the followers' performance to the abilities and motivation of those individuals, and thus lead to a favorable employee evaluations.

The Kipnis et al. (1981) model did not address the issue of poor performance because the vast majority of groups in their study exhibited a high level of performance. However, research cited by Yukl (1981) suggests that, when faced with instances of poor performance, leaders might infer a lack of abilities and/or motivation on the part of the subordinate(s), and thus move toward a more controlling style in the future.

Kipnis et al. (1981) employed path analytic techniques to test the fit of these two recursive models to the data obtained in their experiment. The results of the path analysis support the power-usage model (shown in Figure 2). The data revealed that favorable employee evaluations were mediated by influence tactics (democratic, participative), as well

as the leaders' attributions of motivation. The results also indicated that the major determinant of employee evaluations was the leader's assumptions about the employee's self-motivation. Together, the results of studies conducted by Kipnis and his colleagues, as well as others (e.g., Kruglanski, 1970; Strickland, 1958), provide some degree of support for the existence of the metamorphic effects of power.

Assuming that the metamorphic effects of power exist, it becomes important to attempt to understand the circumstances in which these effects are most likely to be elicited. Based on the available research evidence, Kipnis (1987) has suggested that the metamorphic effects of power are most likely to emerge under the following circumstances:

(a) when behavioral technologies are applied routinely and as part of a systematic program to change a target person's behavior; (b) when no attempt is made to evaluate the effectiveness of the behavioral technology; (c) when the behavioral technology is used without the target's consent or awareness, which further contributes to the influencing agent's sense of control; and (d) when the behavioral technologies are designed to restrict, rather than increase, the amount of control persons can exercise over their own behavior. (p. 35)

It may not be uncommon to find autocratic leaders who control the behavior of their subordinates, and then truly believe that the only reason their subordinates are performing well is because they had continually monitored and controlled their actions. According to the metamorphic effects of power theory, under these circumstances the leader may be inclined to attribute successful subordinate performance to his/her own (i.e., the leader's) actions. At the same time, poor subordinate performance may be attributed to low motivation, poor execution of duties, and/or lack of abilities on the part of the subordinates. These hypotheses suggest that subordinates who work for an autocratic leader may be in a "no win" situation.

Power / Influence

Many writers have suggested that the struggle for power and control is indigenous to human behavior. For example, William James (1890) stated that whenever two or more individuals interact across time, one will inevitably emerge as the dominant figure. Similarly, White (1959) has argued that humans possess an "innate need to manipulate the environment" (p. 297). The need for influence or control may be most evident in organizational settings, where it is often important for individuals to direct the behavior of others in the

performance of various tasks or activities. Consistent with this belief, McClelland and Burnham (1976) concluded after studying managers from a number of large U.S. corporations that, "the top manager of a company must possess a high need for power, that is, a concern for influencing people" (p. 101).

While it is widely recognized that power and influence are a necessary part of organizational life, there has also been a recognition that too much power can lead to a number of negative effects. As Kipnis (1972) points out, the system of checks and balances and the separation of powers between the executive, legislative, and judicial departments in the American Constitution are based on fears of the consequence of excessive power. It is interesting to note the many "powerful" individuals throughout history who have violated legal or ethical guidelines out of an apparent desire for even more power/influence.

In preparing to research the topics of power and influence it became quite evident that, although they are distinct constructs, it is difficult to define the conceptual boundaries between them. In addressing the difference between the terms "power" and "influence", Hinkin & Schriesheim (1988) recently described power as "the potential to exert influence, whereas influence is thought of in active terms, involving the actual

modification of another person's behavior" (p. 47). Hollander (1985) notes that, "[w]hile power and influence constitute different processes, they are intertwined insofar as leaders may use both depending upon the circumstances and the particular followers involved. Even appointed leaders, 'put in charge' within an organization, must rely on influence, in the sense of persuasion, as much as or more than power" (p. 489).

Others such as Yukl (1981) and Gortner, Mahler, and Nicholson (1987) have also adopted a definition of power which is so broad that it is almost synonymous with influence. For example, Yukl (1981) defined power as, "an agent's potential at a given point in time to influence the attitudes and/or behavior of one or more specified target persons in the direction desired by the agent" (p. 18). Also, McClelland (1969) defined the need for power as being a "concern about having influence over others" (p. 143).

Like it or not, it seems apparent that the closely related constructs of power and influence are prevalent in almost all aspects our lives -- from parent/child relationships to interpersonal relationships at work. Kipnis (1984) stated that, "[g]iven the pervasiveness of influence activities in social relationships, it is not surprising that this topic occupies a central niche

in social psychology" (p.179). Paradoxically, in 1972 Kipnis accurately noted that, "[t]here has been very little research in psychology concerned with how the control of power may influence the power holder's views of himself and the less powerful" (p. 33).

Unfortunately, despite the contributions of Kipnis and his colleagues, that statement still holds true today. Zimbardo's well known Stanford Prison Study (Haney & Zimbardo, 1976) provides powerful support for the assertion that power and influence may lead to a number of adverse changes in the power holder. In this study, students were chosen to simulate the roles of prison guards or inmates for a two week period, in an attempt to investigate the psychological effects of the prison environment on individuals. The effects of this experiment were so profound that the two-week simulation had to be discontinued on the sixth day. The researchers reported that:

[I]n the course of the Stanford prison study, we witnessed sadism in men who were not sadistic, emotional breakdowns in people chosen precisely because they were stable, and the loss of objectivity in men whose professional training should have prevented it.... And yet, of perhaps even greater significance is the realization that actual prisons are but a concrete and steel metaphor for society's more subtle yet ubiquitous psychological prisons of the mind. We refer here to those social institutions, conventions, and attitudes which act to bind or restrict a man's [sic] freedom, imprisoning him in routinized modes of

working and living, in a maze of confining and distorting social roles, in definitions of self and others which are unnecessarily rigid and narrow. (Haney & Zimbardo, 1976, p. 266)

The Stanford Prison Study presents compelling evidence to support the existence of some type of metamorphic effects of power. The researchers associated with this study were astonished at the extent to which power, influence, and control could radically transform individuals' views of themselves and others. Haney and Zimbardo (1976) emphasized that the "guards" seemed to delight in what they referred to as "the ultimate aphrodisiac of power" (p. 268). The guards were often seen going out of their way to create more opportunities for themselves to degrade, harass, and humiliate the "prisoners".

The overly controlling and degrading behavior of the guards did not appear to be a demand characteristic of the study because it was later reported that, "[t]he guards actually saved their most sadistic behavior for moments when they were alone with the prisoners, out of the sight of the experimenters, who were thought to be 'soft' on prisoners" (Haney & Zimbardo, 1976, p. 268). It was also reported that when the "prisoners" expressed any type of evaluative statements about one another, 85% of the time even these statements were uncomplimentary and deprecating. Zimbardo, Haney,

Banks, and Jaffe (1974) commented that "the most disturbing lesson of our research comes from the parallels between what occurred in that basement mock prison and daily experiences in our own lives -- and we presume yours....To what extent do we allow ourselves to become imprisoned by docilely accepting the roles others assign us ...?" (p. 73).

Some of the effects witnessed in the Stanford Prison Study may be explained through the metamorphic effects of power model postulated by Kipnis. Consistent with the metamorphic effects model, the possession of power and control over others appears to have transformed otherwise emotionally stable, middle-class, college-aged males into autocratic tyrants who devalued the worth of those over whom they had exerted power and control. This experiment may have been an extreme example of the effects of unconstrained power and influence, but as Zimbardo et al. (1974) suggest, in many ways it may parallel some of the daily experiences in our lives.

One area of our lives in which the use of influence and power is most salient is in work situations. In most organizations effective leadership becomes an important part of successfully accomplishing one's identified goals and objectives. In fact, the term "leadership" has often been used almost synonymously

with the terms "influence" and "control" (Yukl, 1981). For example, in 1950, Seeman said that, "[a]lthough specific definitions of leadership may vary considerably, the core of the concept - regardless of whether we define leadership as 'acts which make a difference in group effectiveness - is the idea of a stratification in terms of power or influence" (p. 41).

In a more recent review of the many definitions of leadership, Yukl (1981) also concluded that, "most definitions of leadership reflect the assumption that it involves an influence process whereby intentional influence is exerted by the leader over followers" (p. 3). Calder (1977) took this perceived similarity between leadership and influence one step further when he argued that there would be no need for the construct of leadership if we studied models of interpersonal influence more closely.

Leadership

In their best-selling book, In Search of Excellence, Peters and Waterman (1982) expressed the importance of leadership to organizational effectiveness when they wrote:

We must admit that our bias at the beginning was to discount the role of leadership heavily, if for no other reason than that everybody's answer to what's wrong

(or right) with whatever organization is its leader. Our strong belief was that the excellent companies had gotten to be the way that they are because of a unique set of cultural attributes which distinguish them from the rest, and if we understood those attributes well enough we could do more than just mutter "leadership" in response to questions like "Why is J&J so good?" Unfortunately, what we found was that associated with almost every excellent company was a strong leader (or two) who seemed to have a lot to do with making the company excellent in the first place. (p.26)

While the topic of leadership has been extensively researched from numerous perspectives, it appears that research pertaining to the possible psychological effects of exhibited leadership style on the leader him/herself has been negligible. Prior to proceeding, it becomes important to make a distinction between the terms supervisor and leader. For the purposes of this paper I will apply Landy's (1985) description of the difference between the terms supervisor and leader:

Although the terms leader and supervisor are used interchangeably, there is a clear difference. Supervisor is a job title. It implies that there are certain responsibilities for directing that are part of the job of the person who holds the title. The title specifies what must be done. Leadership, on the other hand, implies how these responsibilities will be met. (p. 422)

In 1950, Morris and Seeman proposed that "leadership behavior" includes the following acts:

- A. Behavior involved in helping another in perform his/her position.
- B. All behavior of an individual selected

- as leader.
 - C. Any positive influence act.
 - D. Behavior of any individual that makes a difference in achieving the desired behavior or characteristics within the group.
 - E. Behavior of an individual when he is directing the activities of a group.
- (p. 51)

Clearly, interpersonal power, control, and influence play an important role in the leadership process. Interpersonal influence appears to be the critical factor, whether this influence is the result of coercion, persuasion, inducements, or any other approach. The concept of leadership encompasses much more than the use institutional powers (such as those manipulated by Kipnis, 1972). This can be evidenced by the fact that leaders possessing similar power bases will often differ in their style of influence. As a result, the manner in which leaders attempt to influence others can vary; this is typically referred to as leadership style. The metamorphic effects of power model suggests that the more autocratic or controlling the leadership style, the more likely it is that the metamorphic effects of power will be present. The role of leadership style in determining the emergence of these metamorphic effects of power is an important issue which has been overlooked in the research literature to date.

In his review of the leadership literature, Yukl (1981) reported that low subordinate performance usually leads to one or more of the following leader reactions:

1. Closer supervision (Farris & Lim, 1969; Lowin & Craig, 1968; McFillen, 1978).
2. More directive-structuring behavior (Greene, 1975, 1979a, 1979b; Lowin & Craig, 1968).
3. Less considerate-supportive behavior (Barrow, 1976; Dansereau, Graen & Haga, 1975; Farris & Lim, 1969; Graen & Cashman, 1975; Greene, 1975, 1979b; Herold, 1977; Lowin & Craig, 1968).
4. More critical-punitive behavior (Bankhart & Lanzetta, 1970; Barrow, 1976; Curtis, Smith & Smoll, 1979; Greene, 1979b; Herold, 1977; Sims, 1980; Szilagyi, 1979).
5. More autocratic behavior (Barrow, 1976; Farris & Lim, 1969)
6. More performance emphasis (Barrow, 1976; Farris & Lim, 1969)
7. Less praise and positive rewards (Bankhart & Lanzetta, 1970; Curtis, Smith & Smoll, 1979; Farris & Lim, 1969; Sims, 1977; Szilagyi, 1979). (p. 187)

The preceding list outlined by Yukl (1981) clearly indicates that leaders tend to move toward a more autocratic, or controlling, style when faced with instances of poor subordinate performance. This is another reason why it would be valuable to know whether autocratic leadership styles are likely to lead to the emergence of the metamorphic effects of power. If the metamorphic effects hypotheses are correct, leaders would be creating a worse situation for themselves, as well as their subordinates, by moving toward a more

controlling or autocratic style when presented evidence of poor subordinate performance. The results of the study being proposed here could provide valuable information for better understanding in-group and out-group relationships between leaders and followers (as identified in Vertical Dyad Linkage Theory; Dansereau, Graen & Haga, 1975; Graen & Cashman, 1975).

The following sections will provide additional evidence to assist in explaining the processes through which the metamorphic effects of power may be expected to emerge. Particular emphasis will be placed on identifying why these effects may be expected in situations involving leaders who employ a highly autocratic style.

Attribution

Calder (1977) has argued that leadership theory may be nothing more than an extension of attribution theory. Calder (1977) proposed that the construct we refer to as leadership may be nothing more than a label used within the framework of attribution theory to describe many different types of interpersonal interactions. Accordingly, it appears that the metamorphic effects of power are, essentially, attributions made by a powerholder regarding the

influence and/or control s/he had successfully exerted over the behavior of another.

Attribution theory was originally developed in an attempt to identify how people make causal explanations. According to Heider (1958), people have a need to make sense of the cause and effect relations around them, and as a result, they rely upon a "naive psychology" to assist in making causal explanations. Kelley (1967) suggested that, when making attributions, individuals typically attribute behavior to one of three causes: (1) dispositions or stable characteristics of the individual; (2) the specific circumstances of the situation in which the behavior is elicited; or, (3) properties of the environment in which the behavior occurs. These attributions could be further simplified into the two categories of internal and external attributions.

Internal attributions are those instances in which the cause or responsibility of an event is attributed to a stable characteristic or disposition of the individual in question (#1 above). For example, if someone believed that Mary achieved an "A" on her essay because she writes well, this individual would be making an internal attribution regarding Mary's performance (Mary is a good writer).

Conversely, in external attributions the behavior is attributed to factors outside of the individual in question (e.g., to the situation, the environment, the task, etc.). An example of an external attribution would be the belief that Mary received an "A" on her essay because the assignment was easy. That is, the situation (an easy assignment) was the reason for Mary's good grade.

Kelley's (1967, 1976) cube model of attribution outlines the three factors which he believed to be critical when attempting to determine causality; they are: (1) consensus - the degree to which the behavior is similar to the way others behave in a given situation; (2) consistency - the extent to which the individual consistently behaves this way in the given situation; and, (3) distinctiveness - the degree to which the behavior may be due only to that particular situation.

An important concept in Kelley's cube model is the covariation principle which states that "[a]n effect is attributed to the one of its possible causes with which, over time, it covaries (Kelley, 1976, p.365). For example, within Kelley's theory (1967, 1976), one would expect an internal attribution to be made regarding a given task (or related tasks) if there was noticeable variance in the performance levels across

performers (low consensus) while the performance of each individual remained somewhat constant across situations (high consistency and low distinctiveness). On the other hand, if the vast majority of individuals performed rather poorly on a task (high consensus) which many of them had performed well in the past (high distinctiveness) we would expect an external attribution to be made (i.e., the result attributed to the situation).

Kelley explained his covariance principle in terms of Heider's (1958) concept of "naive", or "common sense", psychology when he stated:

The assumption is that the man in the street, the naive psychologist, uses a naive version of the method used in science. Undoubtedly, his naive version is a poor replica of the scientific one - incomplete, subject to bias, ready to proceed on incomplete evidence, and so on. Nevertheless, it has certain general properties in common with the analysis of variance as we behavioral scientists use it. (Kelley, 1976, p. 366)

In addition to being faced with the difficult task of making attributions which are based on incomplete and/or mis-perceived information, attributions are also made in situations which offer a number of equally plausible causes. Kelley's discounting principle (1972) addresses the issue of how people make attributions when multiple plausible causes exist. The Discounting Principle would be applied in the case of a single

observation, which would require the attributer to explain the event in light of the available "evidence". In this situation an individual would be making causal inferences based his/her preconceived notions (or naive psychology) regarding the plausible cause and effect relationships (i.e., the causal schemata) in the given situation.

According to Kelley (1973) "[t]he Discounting paradigm is essentially equivalent to Bem's (1967) account of self-perceptions in forced-compliance experiments" (p. 120). What Kelley (1973) is referring to is the situation in which an individual is required to make an attributional assessment based on a single observation of an event. That is, following the delivery of a counter-attitudinal communication, an individual will attempt to (cognitively) determine whether there is enough external justification for the expression of these views to discount his/her own internal causes (i.e., his/her own attitudes).

As Ross (1977) points out, unlike the Covariance Principle, the Discounting Principle places significant demands upon the intuitive scientist. While the Covariance Principle merely requires individuals to apply logical or statistical rules to determine cause and effect relations (based on a number of observations), using the Discounting Principle

attributions are made from a single observation. Therefore, the demands of the discounting paradigm requires considerable insight into human behavior. Another important theory within the attribution literature, Jones and Davis' (1965) concept of hedonic relevance, proposes that in a situation involving poor performance an individual will be more likely to attribute another person's behavior to internal factors if there is a negative outcome which affects that individual's own welfare.

Jones and Nisbett (1972) pointed out that actors and observers may view the same situation differently when making attributions. The theory of actor/observer differences (Jones & Nisbett; 1972) suggests that observers will tend to attribute an actor's behavior to that actor's personality, attitudes, abilities, etc. (an internal attribution), whereas the actor may tend to view that same behavior(s) as a response to the given situation (an external attribution). Based on research evidence, Jones and Davis (1965) conclude that actor/observer differences in attribution might be the result of two important factors. First, the actor has detailed information not typically available to the observer regarding the circumstances, history, motives, and experiences which influenced the exhibited behavior. Second, the actor's behavior would be most

salient to the observer, whereas, for the actor, his or her own judgments would be most salient.

It is important to note that attribution theory is not restricted solely to the explanation of behavior. In 1977, Ross outlined a number of different tasks which have often been included under what we commonly refer to as attribution theory. One type of attribution task, causal judgment, involves an attempt to identify the cause, or causes of a given event. The vast majority of research associated with this type of attributional task has relied upon a simple internal-external, or disposition-situation, dichotomy (Ross, 1977).

Another type of attribution is what has been referred to as social inference (Ross, 1977). Social inference refers to the inclination to make inferences about the attributes of either a situation or an actor(s). For example, it could be assumed that a student didn't perform well on a test because he or she is lazy, and as a result, probably didn't prepare very well (a dispositional, or internal, attribute). Conversely, one may propose that the reason this individual didn't perform very well on the test is because it was administered in a noisy room (a situational, or external, attribute).

More recently, a third use of attribution theory has begun to attract some attention. This third attributional task has been referred to by Ross (1977) as prediction. Ross defines this as the tendency "not only to seek explanations and to make social inferences but also to form expectations and to make predictions about the future actions and outcomes" (p. 175). Ross (1977) suggests that the psychology of intuitive prediction is a natural extension of attribution theory's domain. These tasks outlined by Ross (1977) point out that attributions may not only be made to assist in the explanation of behavior, but they may also be used to infer information about an individual, or to help predict how an individual might react in a given situation. All of these uses of attribution will be helpful in attempting to explain the processes which are believed to be the foundation for the metamorphic effects of power.

It has been hypothesized that the metamorphic effects of power will emerge in those instances in which the influencing agent attributes the actions of others to his or her own (i.e., the powerholder's) controlling tactics. In any leader/follower situation another possible causal factor in the attribution puzzle is introduced -- the relative contribution of the leader and follower(s) in a given situation. A

number of researchers have investigated how leaders make use of attribution theory principles in attempting to explain subordinate performance.

Attribution Theory in Leadership

Many researchers have found significant positive relationships between "people oriented" leadership styles (e.g., Consideration) and higher levels of reported subordinate satisfaction and/or productivity (see e.g., Korman, 1966; Stogdill, 1974). However, as Korman (1966) pointed out, one major difficulty with interpreting many of these results is due to the researchers' over-reliance on "static correlational" research methods. Many researchers have relied on multiple questionnaires, administered to subordinates at the same moment in time, to evaluate leadership effectiveness and outcome measures such as subordinate effectiveness and satisfaction. Most individuals have interpreted positive correlations between people oriented leadership styles and higher levels of reported subordinate performance and satisfaction as indicating that considerate leadership styles lead to greater subordinate satisfaction and productivity. However, it is not possible to determine causality when using static correlational data.

One alternative explanation of these observed relationships is that the leader's style may have been influenced by the subordinates' behavior and/or performance. For example, poor performing (and/or less satisfied) work groups might, as a consequence of their actions, be subject to a more autocratic or controlling leadership style. This would be consistent with Yukl's (1981) outline of leader responses to poor performance, which was presented earlier in this paper. It is also possible that some other change producing event may have led to systematic changes in leadership style, as well as in subordinate performance and/or satisfaction. Yet another interpretation of these results would be that subordinates may rely on their knowledge of group performance and satisfaction in forming their impressions of the leader (his/her characteristics, effectiveness, etc.) and/or the group. That is, individuals in high performing work groups may perceive their leaders as being more considerate and more effective, regardless of the true situation.

This last interpretation has received a great deal of empirical support in studies of leaders and their work groups. The first of these studies (Lowin & Craig, 1968) found, by manipulating the performance levels of subordinates, that closeness of supervision may be more a result of group performance than a causal determinant

of performance. Farris and Lim (1969), as part of a role-playing exercise, provided each group foreman with information regarding the effectiveness of his [all foremen were males] group's prior performance (actually bogus information). This was done by informing the foreman, prior to the exercise, that his group was one of the highest, or lowest, performing groups in terms of their previous performance. The results revealed that the foremen in the "high performing" groups were reported to be more supportive, and more considerate than foremen in the "low performing" groups. As Farris and Lim (1969) noted, because the behaviors of the foremen were not directly observed, it is possible that the differences in perceived leadership may be due to a halo-type effect resulting from the experimental manipulation, or they could be a reflection of true behavioral differences between foremen in the high and low performance conditions.

In 1975 Staw conducted a true experiment and an interpersonal simulation which together provided strong evidence that individuals use knowledge of performance outcomes as a cues regarding their own work characteristics and that of their groups and their organizations. In this experiment, Staw (1975) randomly fed back bogus performance data to work groups to investigate whether this information played a role in

establishing member perceptions of their own intragroup processes. The results indicated that individuals in groups which were informed that they had performed below average (regardless of their true performance level) rated themselves lower in cohesiveness, influence, communication, openness to change and motivation than did those individuals in the "high performance" groups.

The importance of these findings is that they show the powerful effects of post hoc attributions on self-report data of group performance and intragroup processes. It has often been assumed that the direction of causality in observed correlations between self-report measures of group processes and performance outcome data is such that the performance measures represent an accurate assessment of the factors which have caused the outcome(s). However, Staw's (1975) research points out that these correlations could also be explained in terms of an attributional effect, in which individuals seek performance outcome data to assist them in forming their beliefs regarding the characteristics of the group (i.e., Level of Performance ---> Attribution of Characteristics ---> Self-report of Characteristics).

The Staw (1975) findings further suggest that individuals may possess a naive theory of the

relationships between work group characteristics and subsequent performance. That is, individuals may assume that if the group performed poorly they must have experienced poor communications, low cohesiveness and so forth, because all of these factors would (logically) seem to be associated with poor group performance.

As a follow-up to the experimental study, Staw (1975) developed a simulation to investigate the possibility that individuals may rely on naive theories of performance to help establish their beliefs regarding intragroup processes. In the interpersonal simulation Staw (1975) asked participants to predict the work characteristics of groups which had performed in the lowest (or highest) 20% of all three-man groups on the same "Financial Puzzle Task" employed in the experimental study. It was found that the results of this interpersonal simulation very closely matched the results of the previous experimental study. The combined results of the Staw (1975) experiment and subsequent simulation provide support for the belief that, as Heider suggested in 1958, individuals may rely heavily upon "naive", or implicit, theories to help explain or evaluate the behavior of themselves and others.

One potential shortcoming of the Staw (1975) study is that the groups were all newly formed and, as a result, it is difficult to determine whether similar results would be found among groups with a longer history together (there might be less need to rely upon implicit theories in long standing groups). This issue was directly addressed in a replication of the Staw (1975) study by Downey, Chacko & McElroy (1979).

In this study, the researchers (Downey et al., 1979) attempted to replicate Staw's (1975) results using students in newly formed groups (an exact replication), as well as with students who had a 12-week history of working together. The results obtained from the newly formed groups yielded an almost exact replication of the attribution effects obtained by Staw (1975). In addition, the follow-up study which investigated work groups with a 12-week history of working together also indicated the existence of the same attributional effects (Downey et al., 1979). These results revealed that even though the 12-week teams had much more historical information to rely upon regarding intragroup processes, they still relied heavily on "naive" theories to explain the causes of performance.

A study conducted by Wolf (1975) also found that the well documented relationship between job perceptions and job performance may not be unidirectional.

According to Wolf's (1975) findings, not only do our perceptions of our job influence our performance, but our performance levels can also in many ways color our perceptions of our jobs.

Through a series of research studies, Mitchell and his colleagues (Green and Mitchell, 1979; Mitchell, Green, & Wood, 1981; Mitchell Larson & Green, 1977; Mitchell & Wood, 1980) investigated the use of attribution theory in leadership. The major focus of these research papers was the investigation of leader responses to poor performance within the framework of attribution theory. Two of these articles (Mitchell et al., 1977; Mitchell & Wood, 1980) reported the results of experimental studies which help describe (within the framework of attribution theory) how leaders deal with poor performers.

In the first of these studies, Mitchell, Larson, and Green (1977) conducted three experiments to investigate whether many of the findings reported in the leadership literature could, at least in part, be explained in terms of attribution theory. That is, when people perform their jobs, either individually or in a group, it is possible that their performance levels may influence their perceptions of the leader's style, leader effectiveness, group atmosphere, task structure and so on (Mitchell et al., 1977).

In the first of three experiments Mitchell et al. (1977), asked participants to listen to an audio tape of a town meeting and then provided them with bogus (experimentally manipulated) information regarding the group's performance during that meeting (in terms of success/failure). Subjects in the high performance outcome conditions were informed that 90% of the group's answers were correct, whereas subjects in the low performance condition were told that only 40% of the group's answers were correct. When asked to rate the leader's behavior, as well as several situational variables, it was found that the "successful" groups were perceived as receiving more structure from the leader, and having a more pleasant atmosphere than the "failure" groups ($p < .05$, one-tailed t-tests). Non-significant differences between the two groups existed on the dependent measures "Consideration", "Task Structure", and "Position Power" (although differences in the means were all in the predicted direction). However, because the researchers conducted six separate t-tests, there exists the distinct possibility of a finding a significant difference (at the $p < .05$ level) between the groups due to chance factors alone.

The second experiment conducted by Mitchell et al. (1977) employed a videotaped group meeting as the

stimulus. Again, the reported performance levels of the group were experimentally manipulated, and the results indicated that reported performance levels influenced the participants' perceptions of the leader as well as the situation. Specifically, ratings of leader behaviors, group atmosphere, and overall situational favorability were all significantly higher (t-tests, $p < .05$) for the "high performing groups" (Mitchell et al., 1977).

The final experiment (Mitchell et al., 1977) had groups comprised of two naive subjects and a confederate working on a business problem. At the conclusion of the exercise the groups were provided bogus information regarding their performance. The results of this study indicate that the situation (i.e., group atmosphere, task structure) was perceived to be significantly better in the "higher performing groups", but there were no significant differences in the perceptions of leader behavior. Overall, these three experiments provide support for the hypothesis that group performance outcomes could play a role in shaping one's perceptions of the characteristics of the leader, the work group, and the situation.

Two experiments conducted by Mitchell & Wood (1980) indicate that: (1) when reporting their responses toward cases of poor performance by nurses, nursing

supervisors were more likely to attribute causality to internal rather than external factors, regardless of the circumstances; (2) this bias toward internal attributions increased when the supervisors were presented information which indicated that the nurse in question had a poor work history; and, (3) the supervisors choose responses to the poor performance which were consistent with their attributions (i.e., the more internal the attribution, the more the response was directed at the nurse).

Overall, the results of these studies (Mitchell et al., 1977; Mitchell & Wood, 1980) indicate that: (a) when confronted with incidents of poor performance, leaders tend to attribute causality more to internal factors than external factors regardless of the circumstances (i.e., they tend to believe that the subordinate was responsible); (b) the leader is more likely to attribute causality to internal factors when the outcome of the performance was serious and when the work history of the subordinate was poor; and, (c) responses to poor performance were found to be directed toward the subordinate more often when causality was attributed to internal factors. These results are consistent with the actor/observer biases identified in the attribution literature (cf., Jones & Nisbett, 1965; Harvey & Weary, 1984). In addition, they demonstrate

the important role that attributions may play in the leader-follower relationship.

The studies cited above are noteworthy because the results suggest that leaders are likely to find subordinates personally responsible for instances of poor performance. Also, when a subordinate has had a history of poor performance, or when the seriousness of performance is high, the leader will be even more likely to consider the subordinate responsible for the poor level of performance. Additionally, these results indicate that leaders may respond differently (more severe) when they believe that the subordinate was responsible for the poor performance which was exhibited.

Based on the available research, Mitchell, Green, & Wood (1981) developed a basic model which outlines the processes they believe to be associated with leader responses to subordinate performance (see Figure 3). The hypotheses of the present study would suggest that there may be two important paths not included in the original Mitchell et al. (1981) model (see dotted lines). The dotted lines in Figure 3 indicate that the leader's behavior may influence the schemata which s/he employs, and the attributions that s/he makes when responding to subordinate behavior/performance. It is also important to note the critical role that schemata

and causal attributions are believed to play in determining leader responses to subordinate behavior/performance.

Implicit Theories

Heider (1958) and Kelley (1976) both referred to the attribution process as the employment of naive theories to assist people in explaining the world around them. Similarly, it has been proposed that implicit personality theories are naive theories of human behavior based on a set of beliefs about the relationships among personality traits in the population. For example, if someone told a blatant lie, one might (cognitively) associate this individual with traits which s/he implicitly believes to be associated with the exhibited behavior (e.g., corruptible, evil). Similarly, on the basis of implicit theories, one may disassociate this individual from other traits (such as trustworthy, ethical) which s/he believes are not consistent with the exhibited behavior (telling a lie). Implicit personality theories, like attribution theory, serve as a guide in helping people make sense of others in an economical way.

Due to the great number of stimuli to which we are exposed every waking moment of our lives, it is impossible to continually perceive, store, and evaluate complete information about an individual and/or situation. As a result, implicit theories become quite helpful once information about individuals has been perceived and retained. By relying upon implicit theories we can quickly make behavioral predictions about an individual without having to accumulate and process large amounts of information about that person. For example, an implicit personality theory may suggest that individuals perceived to be "unmotivated" cannot be counted on to complete assigned work projects without constant monitoring. As a result, when faced with a subordinate who is considered to be "unmotivated", s/he may be closely monitored to ensure completion of the project, even though this individual may not have given any direct indication that he/she cannot complete assignments on time (i.e., the implicit theory may not be accurate).

Implicit theories may help explain why, in the metamorphic effects of power model, influencing agents (or powerholders) may associate many negative attributes with those individuals over whom they exert

influence/control. It is plausible to assume that influencing agents rely upon implicit theories to "fill in" their beliefs regarding those individuals whom they have influenced/controlled. Unfortunately, researchers (e.g., Smith and Miller, 1979) have found that cognitive attribution processes tend to be highly subjective and susceptible to personal biases. Another difficulty with cognitive attributional processes is that the causal direction of one's (naive) implicit theories may often be (erroneously) reversed (Calder, 1977). That is, individuals may incorrectly believe that if A implies B, then B must imply A. For example, a leader may believe that low motivation leads to poor performance, and therefore poor performance must indicate low motivation on the part of the individual(s).

A substantial body of research has demonstrated the existence of implicit theories of leadership (e.g., Cronshaw & Lord, 1987; Eden and Leviatan, 1975; Lord, Foti & Phillips, 1982; Schneider, 1973; Weiss & Adler, 1981). However, thus far, researchers have focused their attention solely on the subordinates' use of implicit theories in explaining the behavior of their leaders. One of the purposes of the present paper is to indicate the importance of also considering the possibility that leaders may also rely heavily upon

implicit theories to assist them in explaining individual subordinate and group behavior. In the present paper it is being proposed that the leader's attributions, implicit theories, and beliefs may be influenced or dictated by the leaders own behavior (i.e., the leader's style). Although the approach taken by previous researchers differs from the focus of this paper (the leader's use of implicit theories to explain subordinate behavior), the underlying concepts appear to be quite similar.

According to Phillips and Lord (1982), "observers implicitly believe that leadership produces certain behaviors and effects. Therefore, if those behaviors and/or effects are observed or assumed, and they are ascribed to personal qualities of an actor, the observer will perceive that the actor has demonstrated leadership" (144). Recently, a number of researchers have attempted to explain how implicit leadership theories operate, and how they relate to other theories of cognition.

Rush, Thomas, & Lord (1977) noted that, "[i]nvestigations of personality structure have demonstrated that the resulting factor structure of trait ratings may reflect the rater's 'implicit personality theory' rather than the ratee's personality structure" (p. 94). Similarly, Rush, et al. (1977)

proposed that, within the context of leadership theory, measures of leader behavior may be more a reflection of the rater's (i.e., the subordinate's) "implicit theory of leadership" than a measure of the ratee's (i.e., the leader's) true behavior. This theory would provide a plausible interpretation of the static correlational data presented in many studies of leadership (see Korman, 1966; Stogdill, 1974).

In an attempt to investigate their theory, Rush et al. (1977) administered the Leader Behavior Description Questionnaire (LBDQ, Form XII, Stogdill, 1963) to 168 volunteer undergraduate students under a limited information condition. Participants in this experiment were provided a very limited description of a supervisor, and then asked them to evaluate that individual (using the LBDQ) based on the information provided in the description. Within the brief description of the supervisor, the researchers experimentally manipulated three factors relating to the supervisor (performance level, sex, and level of educational accomplishment).

Consistent with the results of the studies cited earlier in this paper (e.g., Downey et al., 1979; Mitchell et al., 1977; Staw, 1975), Rush et al. (1977) found that, among other things, ratings of supervisor behavior (on a number of factors, including

Consideration, Initiating Structure, and Persuasion) were all significantly higher ($p < .001$) in the high performance condition than in the low performance condition. The results of this experiment also indicated that the Consideration and Initiating Structure sub-scales of the Leader Behavior Description Questionnaire (LBDQ) may be susceptible to the influence of implicit leadership theories. In addition, it was found that information pertaining to the leader's level of performance, and to a lesser extent the leader's sex, also significantly altered the mean level of each subscale (Rush et al., 1977). Finally, a factor analysis of the LBDQ ratings revealed that, in the absence of any actual leader behavior information, the factor structure and item loadings for consideration items were quite similar to those obtained in an applied setting, suggesting that raters in applied settings may rely upon implicit theories similar to those evidenced in this study.

Rush et al.(1977) noted that the act of completing a questionnaire to describe leader behavior involves a complex sequence of cognitive processing, as outlined below:

This sequence would usually involve exposure to stimulus behavior, selective attention to certain aspects of the behavior, encoding and storage of behaviors attended to, and recall of the stored information when responding to

a questionnaire. In short, responses to behavioral questionnaires involve behavior - attention - encoding - memory units. Even though more cautious researchers have acknowledged the existence of perceptual-memory and behavioral components to such questionnaires, they tend to underestimate the limitations in man's information processing capacities. It seems unreasonable to assume that raters attend to and store all the leader behavior displayed in a given situation and then are able to accurately assess this information at a later time when filling out a behavioral questionnaire. What is more likely is that raters rely heavily on stereotypes and implicit theories to reduce the amount of information processing required in perceiving and understanding the behavior of others. (p. 105)

Overall, the results obtained by Rush et al. (1977) are consistent with many theories of cognitive categorization (see e.g., Cantor & Mischel, 1977; Tsujimoto, 1978) which suggest that, when faced with incomplete information, individuals are likely to use inferential or reconstructive cognitive processes to derive information about the individual in question. An experiment conducted by Wells (1982) revealed that attribution may also play an important role in reconstructive memory of an event. Wells (1982) found that when subjects made attributions regarding an actor's behavior, it enhanced a reconstructed memory of the event, but did not increase direct access to actual information about the event.

Cronshaw and Lord (1987) recently pointed out that, "[s]ocial categorization (Cantor and Mischel, 1979) and attributional (Kelley, 1973) theories are the two major theoretical approaches to understanding person judgments that are current in the social cognitive literature" (p.97). This is quite evident in models of the cognitive performance appraisal processes, which suggest that both attributional and categorization processes play pivotal roles in the development of evaluations (e.g., Ilgen & Feldman, 1983; DiNisi, Cafferty & Meglino, 1984). These models have indicated that attributional processing may precede, and determine, cognitive categorization processes.

Recently, Cronshaw and Lord (1987) attempted to experimentally compare the roles of attributional and cognitive categorization processes in the formation of leadership perceptions. Although the researchers concluded that cognitive categorization appears to be the primary process in determining leadership perceptions, they warn against placing a great deal of emphasis on these results in the absence of additional research evidence.

Cognitive Processes

As described above, a number of studies provide support for the theory that individuals rely heavily

upon cognitive categorization processes to form leadership perceptions. It is clear that a number of cognitive processes, including attention, encoding, storage, recall, and evaluation, must all occur with little or no distortion before a completely accurate assessment of any situation or individual could be made. To further compound this problem, the information required to make assessments of an individual or situation must often be obtained in a "noisy" environment (full of irrelevant, as well as relevant, stimuli), where complete information is rarely available to the evaluator.

Researchers have found that as a mechanism for dealing with our "noisy" environments people will often attend and respond to cues of which they are unaware (e.g., see Langer, 1978; Nisbett & Wilson, 1977). Abelson's (1976) work pertaining to script processing indicates that people will often perform activities without focusing their attention on their own behavior at that time. For example, an experienced driver will be able to drive a car without consciously thinking about every activity which s/he is performing (steering, braking, accelerating, perceptual vigilance, etc.). This type of research points out our frequent reliance on unconscious processes, and thus, the

importance of recognizing the influence of unconscious (or automatic) cognitive processes.

Schneider and Shiffrin (1977) described the differences between automatic and controlled processing in the following way:

Automatic processing is activation of a learned sequence of elements in long-term memory that is initiated by appropriate inputs and then proceeds automatically -- without subject control, without stressing the capacity limitations of the of the system and without necessarily demanding attention. Controlled processing is a temporary activation of a sequence of elements that can be set up quickly and easily but requires attention, is capacity-limited (usually serial in nature) and is controlled by the subject. (p. 1)

Taylor and Fiske (1978) propose that, "[s]ocial perception does not consist of a single automatic or controlled process, but rather a set of activities, some of which are controlled others of which are automatic" (p.281). Their research also indicates that the search process (of the environment) is usually automatic, and thus not controlled by the subject. Therefore, it is possible that when evaluating performance, a supervisor (or leader) may be influenced by factors which are automatically (unconsciously) perceived, without ever recognizing having done so. Based on a review of the cognitive performance appraisal literature, Feldman (1981) concluded that:

[T]o the degree the behavior of an employee is consistent with the supervisor's expectations, it is noted and stored automatically. It is only when a behavior departs from expectations, or when the task is somehow changed, that conscious attention and recognition processes are engaged. (p. 129)

The existence of automatic attentional processes has important implications for understanding the process of evaluating employees (see e.g., Landy & Farr, 1983; Feldman, 1981). DeNisi et al. (1984) suggest that the problem of accurately observing and interpreting performance is especially difficult because what we observe is most often not behavior per se, but a product of some behavior such as a finished product, a written report, etc. For example, in an organizational setting a supervisor (or leader) rarely has the opportunity to continually observe his/her subordinates' work performance. As a result, the supervisor (or leader) must rely heavily upon performance outcomes (e.g., task success/failure) to serve as indicators of the knowledge, skills, abilities, motivation, etc. of the subordinates. This problem is even further compounded when individuals are performing a group task, such as group problem solving, in which the overall performance measures offer no clear indication of individual performance levels. If performance evaluations are often based on performance

outcomes (as opposed to continual direct observation of behaviors), the issue of attempting to better understand how cognitive categorizations and attributions are developed becomes critical when attempting to understand the employee evaluation process.

Rush et al. (1977) maintain that it may be unreasonable to assume that individuals possess the capability to attend to and store all of the relevant information about an individual's behavior and then accurately recall such information when asked to evaluate that person. According to Rush et al. (1977), "[w]hat is more likely is that raters rely heavily upon stereotypes and implicit theories to reduce the amount of information processing required in perceiving and understanding the behavior of others" (p. 105).

This is probably due to the fact that we are exposed to an overwhelming amount of stimuli almost every wakeful moment of our lives. As a result, it is essential that we possess cognitive mechanisms which can enable us to selectively perceive, retain, and recall information in a systematic and economical manner. A great deal of research in the social psychology literature suggests that categorization is basic to perception (Cantor & Mischel, 1979; Feldman, 1981; Rosch, 1975).

In an experiment requiring subjects to seek different types of information to help explain why a given outcome occurred, subjects were found to be quite willing to make attributions regarding others on the basis of very little information -- less than 25% of the available information (Major, 1980). This research indicates that not much "hard evidence" may be required before an individual becomes comfortable with making causal attributions. It may be that these cognitive filtering processes allow us to "effectively" make attribution decisions on the basis of relatively little evidence.

It has been suggested that, despite the limitations of our storage capacity, categorization processes enable individuals to process large amounts of information in a very efficient manner (see Smith, Adams, & Schorr, 1978; as cited in Feldman, 1981). These cognitive processes assist us in, among other things, selectively simplifying, storing, and recalling relevant information in an economical way. Rosch, Mervis, Gray, Johnson, and Boynes-Braem (1976) have noted that, "one of the most basic functions of all organisms is the cutting up of the environment into classifications by which nonidentical stimuli can be treated as equivalent" (p. 382).

Person categorization may be viewed as an information filing/storage system which is used to reduce an otherwise overwhelming amount of stimulus information. Cantor and Mischel (1979) note that:

Studies of how people freely describe and "type" one another also suggest the extensive use of categories involving physical appearance, gender, race, social occupation and role constructs, behavioral scripts and so on ... Thus, a comprehensive approach to the classification of people must take account of such common categories as social and occupational roles (a used-car salesman type) as well as more abstract constructs (an extravert type). (pp. 4-5)

Research evidence strongly suggests that people group others, as well as objects, into various cognitive categories (see Cantor & Mischel, 1979). Cognitive categories are used quite often to assist us in retaining information about individuals (Cantor & Mischel, 1979). These categories effectively serve as a system of classifying individuals so that there is no need to remember tremendous amounts of information about each and every person we meet. According to Rosch (1978), cognitive categories are organized in such a way that they allow individuals to retain much information with little effort. Accordingly, Cooper (1981) referred to humans as "cognitive misers" because of the way that we selectively process and recall information. Two of the most important concepts in

understanding how humans cognitively process information are schemata and prototypes.

Schemata is a generic term for the cognitive categories, or networks, around which information about events, persons, roles, etc. are processed (Taylor & Crocker, 1981). Consistent with the terminology used by Heider (1958) and Kelley (1976) in relation to attribution processes, Phillips and Lord (1982) referred to schemata as "the naive theories that observers possess concerning the covariation and causal relations among stimulus objects and events (Tesser, 1978)" (p. 486). Phillips and Lord (1982) also point out that memory schemata make certain stimuli more salient, and they provide the rules and framework within which subsequent judgements about the stimuli are made.

A schema may also be viewed as "a cognitive template that represents a pattern or network of relationships in memory" (Huber, Podsakoff & Todor, 1986; p. 95). For example, stereotypes and implicit personality theories are two types of schema (Krzystofiak, Cardy, & Newman, 1988). As noted by Krzystofiak et al. (1988) schemata are seen as controlling each of the information processing and simplification stages (i.e., attention, encoding, storage, retrieval, and evaluation). Unfortunately, while schematic processing is quite

efficient, it may also result in systematic biases within each of the information processing stages.

It has been found that, in the absence of complete information, informational gaps may be filled with information which is consistent with the schema category (Taylor & Crocker, 1981). For example, an individual who has been cognitively categorized as fitting most closely with the prototype "autocrat" may also be associated in this schema, or network, with other cognitive categories such as arrogant, controlling, unsympathetic, and so on. Krzystofiak et al. (1988) found that, in the context of performance appraisal, inferences made from schema-based categorizations appear to add a significant amount of variance to ratings beyond that which is attributable to observed behaviors.

The term "prototype" refers to an abstract representation of the clearest example(s) of a cognitive category, or schema (Rosch, 1975). Lord et al. (1982) propose that prototypes may be the central component in implicit leadership theories. Prototypes are important in the categorization process because it is believed that individuals rely upon them to define category membership (Rosch, 1975). For example, in object categorization, the prototype used to define the category "table" would be a cognitive representation of

what that individual perceives a table to look (and perhaps feel) like. This cognitive representation would then be used to determine whether the object being considered could be a member of this category. The category, which is defined by the prototype, can be any type of category, depending upon the way in which we are cognitively describing (i.e., categorizing) the object or individual. Obviously, the cognitive categorization process is quick, and it is not always a conscious act.

In the following paragraph, Cantor and Mischel (1979) point out some of the reasons why cognitive categorization processes could play an important role in attribution:

When a target individual fits well in a particular category (or has been labeled as a member of that category), not only does memory for details of his/her behavior improve in general (e.g., Cantor & Mischel, in press), but attributes commonly associated with that category are ascribed more freely to that person in written impressions and/or in recall/recognition protocols....Once trait impressions are formed -- and they may be formed very quickly -- they may become tenacious, with perceivers biased to maintain consistency. (p. 7).

In person categorization the process is not quite as clear as in object categorization. For example, the cognitive category "leader" would have a prototype associated with it which describes (for that

individual) the clearest example of what a "leader" would be like (e.g., decisive, self-confident, willing to assume responsibility, etc.). After reviewing the research literature pertaining to leadership, it is quite evident that this category prototype is not an easy one to define or describe. It is in situations such as this that individuals must rely upon "fuzzy categories" (Cantor & Mischel, 1979), with unclear boundaries, as part of the cognitive categorization process.

Cantor and Mischel (1979) use the term "fuzzy categories" to indicate that, when categorizing people (as opposed to objects) it is often quite difficult to develop a definitive measure of category membership. As a result, we tend to rely upon categories with ambiguous, or "fuzzy" boundaries. For example, the boundaries between categories such as "autocrat", "overbearing", "controlling", and "arrogant" may be quite "fuzzy". It is important to note that, "category membership is unlikely to be a function of possession of all of a specific group of features but will depend on a configuration of critical 'signs' which suggest that a fair portion of the person's behavior could be explained by using a particular category label" (Cantor & Mischel, 1979; p. 11). Accordingly, Cantor and Mischel (1979) also maintain that, "perceived

prototypicality (under restricted view conditions) appears to be a function of the degree of intensity and consistency with which the central trait attributes of a category can be expected to be exhibited by the target person in normative situations" (p.41).

Schema are thought of as existing in a hierarchical fashion (Cantor & Mischel, 1979; Taylor & Crocker, 1981). Figures 4 and 5 demonstrate a hierarchical representation of some object and person taxonomies (or schemata) which could exist (see Figures 4 and 5 respectively). As shown in these figures, the categorization taxonomy moves from very abstract representations in the superordinate levels down to more concrete categories in the lower levels.

Cantor and Mischel's (1979) hierarchy indicates that the subordinate levels (e.g., in Figure 5, world traveler, campaign manager, circus clown) are "richer" (or less abstract) than the superordinate categories and, therefore, they allow one to know, and predict, more about members of these categories. Individuals have been found to be very willing to make predictions about others solely on the basis of a (prototype) category label (Cantor & Mischel, 1979).

Cantor and Mischel (1979) posit that the processes used to categorize individuals are similar to the cognitive processes associated with attribution (e.g., see Kelley's consistency principle; Kelley, 1967, 1972). Cantor and Mischel (1979) also propose that, when categorizing individuals, "perceived prototypicality (under restricted view conditions) appears to be a function of the degree of intensity and consistency with which the central trait attributes of a category can be expected to be exhibited by the target person in normative situations" (p. 41).

Taylor and Fiske (1978) provide strong evidence to suggest that the most salient characteristic(s) at the time (e.g., due to disposition, situation, personal factors) may play an important role in the attributional and categorization processes. For example, how would a young, extremely intelligent, outgoing, female, graduate student be cognitively categorized? The answer to this question may depend upon the most salient characteristics of the situation at the time. Research has shown, for example, that the only black or female in a group would tend to be viewed more stereotypically, and may be seen as more causal in

group affairs, than s/he would in the company of other blacks or other females (see Feldman, 1981).

Person categorization around prototypes not only makes information processing easier, it also serves to assist the perceiver in planning behavior in social interactions (Cantor & Mischel, 1979). This is an important point, because it recognizes that once categorized, prototypes and schema may assist in determining one's subsequent behavior, and possibly in shaping one's beliefs, in reference to the individual in question.

Also, once an individual has been categorized, subsequent attributions and causal inferences may be biased toward the salient category exemplar or prototype. Schema-based attributions are most likely to result when prototypic behavior is most salient. For example, if a leader sees a subordinate whom s/he considers to be "unmotivated", engaging in behavior which suggests a lack of motivation, that supervisor may be likely to rely upon schema-based attributions to help explain the observed behavior.

Research evidence has shown that stimuli consistent with a person's prototype will be processed automatically (unconsciously). However, stimuli which are inconsistent may trigger a conscious processing of information, if that stimuli is not attributed to

superficial or transient factors (Cantor & Mischel, 1979; Feldman, 1981; Langer, 1978). In the case where stimuli consistently contradict information which is believed to be representative of a stable attribute of the person (i.e., they contradict the categorization) the person would most likely be reclassified, unless the inconsistent information could be attributed to something outside of the individual's control (Feldman, 1981).

According to Feldman (1981), consistent information about an individual which is assimilated automatically into the prototype category also serves to make the category more accessible and salient, and thus more likely to be activated in the future. It is also believed that prototype categories play an important role in person perception. It should also be noted that raters tend to differ in the number and nature of person categories that they use (Feldman, 1981).

Once a stimulus is categorized, recall and recognition may become biased toward the general attributes of that category; including the false recognition of information which was not previously presented (Cantor & Mischel, 1977, 1979; Tsujimoto, 1978). That is, one may tend to recall information about an individual which was never presented, but is consistent with the biases inherent to prototype

categories. Feldman suggests that another reason why prototypes are quite important in the evaluation process is because, "[w]hen an employee is assigned to a category, further memory-based judgments of that employee are colored by the category prototype" (p. 130). Prototypes serve to reduce information processing requirements by alleviating the need to store vast amounts of information about a stimulus. As a result, when asked to recall information, observers may rely heavily on prototypes (Srull & Wyer, 1979). Rush et al. (1977) also pointed out:

Memory is typically thought of as a process in which information is either accurately preserved or forgotten. However, forgotten details of events (such as leader behaviors) are frequently filled in through inferential or reconstructive processes. Thus, rather than directly recalling actual perceptions (e.g., evoking a memory trace), subjects may reconstruct probable behaviors based on implicit theories and salient cues such as performance. (p. 106)

Snyder and Uranowitz (1978) present empirical evidence to support the contention that individuals will tend to "reconstruct" the past, through a distortion of memory, to fit present beliefs. In this study, subjects were asked to read a case study which presented some factual information about a woman referred to as "Betty K.". This 746-word narrative followed Betty K. from birth through childhood,

education, and choice of a profession. After reading the narrative the participants were instructed to think about their impressions of Betty K. and form an overall impression of her. Although all participants read the identical case study, the participants were later randomly provided one of three different stories regarding Betty K's present life style. The results of this study indicate that, as a result of the experimental manipulation, the participants "restructured" their memory of "Betty K's life" to fit their present beliefs regarding Betty K. These results would be consistent with the cognitive categorization processes proposed by Cantor and Mischel (1979), Rosch (1975), Taylor and Crocker (1981), Wyer and Srull (1980) and others which suggest that person categorization processes can serve to reconstruct prior information and direct (i.e., distort) subsequent information processing. It has been suggested that the restructuring of memory to fit present beliefs, may be one reason why many widely held stereotypes seem to be so resistant to change (Snyder & Uranowitz, 1978).

Snyder (1981) and others (e.g., Ebbesen, 1981) have found that, rather than seeking new or disconfirming evidence, people tend to seek information which will confirm their initial expectations. Feldman (1981) has stated that, "[i]t almost seems that Kelley's (1971a)

naive scientist attribution model should be supplemented by a naive lawyer model of information seeking...when one seeks to test an impression, one is essentially seeking to support that impression, making disconfirmation less likely" (p. 136). The available research evidence supports the thinking of Walter Lippman, who said, "[w]e do not first see and then define, we define first and then see" (as cited in Snyder & Uranowitz, 1978).

Attributional Egotism

Snyder, Stephan and Rosenfield (1978) defined egotism as "the tendency to take credit for good outcomes and deny blame for bad ones" (p. 91). The term Attributional Egotism refers to "a motivational phenomenon in which attributions about good and bad outcomes serve to protect or enhance one's self-esteem" (Snyder et al., 1978, p. 91). According to Wixon and Laird (1976), "[a]s historians of our own lives we seem to be, on the one hand, very inattentive, and on the other, revisionists who will justify the present by changing the past" (p. 384).

There presently exists a substantial body of literature to indicate the existence of self-serving, or ego-defensive, biases (see e.g., Bowerman, 1978;

Greenwald, 1980; Snyder et al. 1978; Weary, 1980). Sherif and Cantril recognized these effects when they noted that, "[i]f our ego is injured we resort to all kinds of rationalizations, to projective adjustments, to selective modes of reasoning...in which we manipulate things, persons, memories, or ideas in a highly selective way" (as cited in Miller, 1976, p. 901).

In a review of the attributional egotism literature, Snyder et al. (1978) stated that, "the collection of studies cited so far as evidence for egotism is only the tip of the iceberg" (p. 107). In addition, Locke (1986) reported empirical evidence for egotism in a recent meta-analysis of attributional hypotheses (Locke, 1986) which revealed a mean \bar{r} of .228 and a true (corrected) \bar{r} of .320 for self-serving biases (i.e., correlations between successful/unsuccessful performance and self-attribution of performance to internal/external factors).

In an article entitled "Can we all be better than average", Myers and Ridl (1979) cite many research studies which indicate that people tend to view themselves as being above average in most areas of their lives. As an example, one of the studies cited by Myers and Ridl (1979) found that college students tend to believe that they are likely to outlive their

actuarially predicted age of death by an average of 10 years. In a similiar vein, it was reported that one of Freud's favorite jokes was about a man who told his wife, "If one of us should die first, I think I will go live in Paris" (as cited in Myers & Ridl, 1979).

Attribution theory attempts to assist in the explanation of why and how people make attributions, but it is also important to recognize the role of one's ego in these processes. In 1944 Heider explained the role of the ego in attribution theory in the following way:

It is obvious that [the] tendency to keep the ego level high must play a role in attribution. Since origins are assimilated to acts attributed to them, an act of high value will raise it. However, this will happen only when the stimulus conditions are so strong as to enforce the attribution, that is, if there can be no doubt that the own person is the source. Often, the possibility of different organizations will exist. Then the tendency to raise the ego level will structure the causal units in such a way that only the good acts and not the bad ones are attributed to the own person. (pp. 368-9)

Research in the area of performance appraisal has documented the potential effects of the ego in the perception of one's own performance. Leniency and bias effects in performance appraisal have been well documented in investigations of self-appraisals (see e.g., Meyer, 1980; Thornton, 1980). Meyer, Kay, and French (1965) found that when employees were asked to

compare themselves with other workers on a 100 point scale (100th percentile representing performance which is better than all other employees, 50th percentile - better than one-half of all employees, etc.), the average reported self-appraisal was at the 78th percentile. Thornton (1980) concluded his review of self-appraisals by stating that, "individuals have a significantly different view of their own job performance than that held by other people" (p.268).

In a recent meta-analysis of self, peer, and supervisor performance appraisal ratings, Harris and Schaubroeck (1988) found support for what they termed "egocentric biases". Harris and Schaubroeck (1988) reported two specific types of egocentric biases: (1) a bias similar to the actor/observer biases proposed in the attribution literature (Jones & Nisbett, 1972); and, (2) a defensiveness through which self-appraisals are moderated by a third variable such as self-esteem (i.e., individuals with high self-esteem may inflate their self-ratings more than individuals with low self-esteem).

In light of this information it would not be surprising to find that the performance attribution process might include some (possibly unconscious) mechanisms for protecting or enhancing one's ego/self-esteem. One study which may be an indication

of such effects, conducted by Jussim, Coleman & Nassau (1987), revealed that students high in self-esteem not only evaluated their own performance more favorably than students low in self-esteem, but they also interpreted their teachers' evaluative feedback more favorably (across comparable levels of performance). According to Snyder et al. (1978):

The impact of the outcome on self-esteem may be greater to the extent that the outcome is attributed to the person. The desire to deny responsibility for bad outcomes, may really be the desire to protect self-esteem from the negative implications of producing bad effects. And taking credit for good acts can be regarded as an attempt to enhance self-esteem. Thus, egotism may be a way to enhance or preserve self-esteem. (p. 93)

Snyder et al. (1978) hypothesized that threat to self-esteem may depend on two factors: (1) the outcome must be potentially attributable to the individual (outcome/attribution), and; (2) the attribution which is made must be relevant to the person's self-esteem (attribution/self-esteem). The following example provided by Snyder et al (1978) helps to explain the importance of these two factors, "if someone plays a game and loses, threat to self-esteem depends both on attributing the failure to oneself [outcome/attribution] and on believing one's failure says something negative about an important aspect of self [attribution/self-esteem]" (p. 93). Therefore, if

either the outcome is not potentially attributable to the person in question, or the task/situation is not important to the individual's self-esteem, motivation for attributional egotism should be minimal.

Brown (1984) has suggested that the well documented actor-observer differences in attribution (see Jones and Nisbett, 1972) may be magnified in work settings. She notes that in a work situation a supervisor is not only an observer, but an actor as well. As Kelley (1972a) stated, "[i]t is a special feature of social interaction that each participant is both a causal agent and an attributor" (p. 1). Because much of what a supervisor says and does can potentially impact the effectiveness of his/her group's performance, the effects of a supervisor's (or leader's) behavior should be quite salient. In this regard, Brown (1984) has noted that, "[i]n the face of poor or marginal performance, the supervisor may wish to transfer blame to employees by discounting the possibility that inadequate supervision or control produced the problem" (p.55).

Greenwald (1980) argued that the human ego introduces a variety of cognitive biases to the attributional process. For the purpose of simplification, he grouped these biases into three categories: egocentricity, benefectance, and

conservatism. Egocentricity biases, according to Greenwald (1980), refer to the tendency of individuals to encode and recall information around the self. This type of bias may be evidenced in the research pertaining to episodic memory (see Norman, 1976). Egocentrism as associated with episodic memory bias may become evident when someone is asked to recall the day John F. Kennedy was assassinated. A typical response might be " Oh yes, I remember, I was...". The information recalled regarding an event is likely to be recalled around information pertaining to the self (Greenwald, 1980). A number of researchers have found that information is especially well remembered when the person considers the relation of the information to one's self at the time of the initial experience (Greenwald, 1980).

Greenwald suggests that another type of egocentricity bias is the tendency to overestimate the significance of one's self in a positive situation or outcome. For example, in their experimental studies Ross and Sicoly (1979) found that "individuals accepted more responsibility for a group product than other participants attributed to them" (p. 322).

Egocentricity biases are also reflected in the work of Langer (1975), pertaining to what she has termed "the illusion of control" over uncontrollable

situations and outcomes. Gambling behavior is a good example of this type of bias, as gamblers often overestimate the impact of "their skills" in games of chance (see Langer, 1975).

Greenwald's (1980) second category of egotistical biases, benefactance, pertains to the tendency for individuals to "perceive themselves readily as the origin of good effects and reluctantly as the origin of ill effects" (p. 605). As Greenwald points out, when a task is performed by a group, individual performance information may not be available. Thus, each member of the group may believe that s/he contributed more than his/her equal share toward a group success and less than equal share following group failure. This same effect could be hypothesized in regard to most leader/follower relationships.

As an example, Greenwald (1980) cited the results of a study by Johnston (1967) in which it was found that "when team feedback was 'average,' subjects were inclined to assume that this must have resulted from a combination of their own better-than-average performance with the partner's worse-than-average performance" (p. 605). Similarly, in a series of experiments conducted by Schlenker and Miller (1977), bogus performance results were randomly fed back to groups (performance feedback was not related to true

performance levels) to investigate the existence of self-serving biases. As predicted, it was found that in conditions of successful performance, group members accepted more responsibility for the group's performance than did individuals in the unsuccessful groups (Schlenker & Miller, 1977).

Greenwald (1980) used the following quote from George Orwell's book 1984 to introduce his section on the third type of bias, cognitive conservatism: "[t]he secret of rulership is to combine a belief in one's own infallibility with the power to learn from past mistakes (Orwell, 1949, p.177)" (p.606). Greenwald (1980) later described cognitive conservatism biases as they relate to this quote by Orwell:

[A] form of belief in personal infallibility is evident in the confirmation biases that operate in information and memory search and in response to persuasion attempts, at the same time, people's readiness to rewrite memory permits new information to be received and incorporated into the cognitive system without the system's registering the occurrence of change. This sort of correction or updating of memory (i.e., learning) thus does not interrupt the sense of infallibility. Fischhoff's knew-it-all-along effect and Bem and McConnell's misrecall-of-prior-opinion finding are perfect illustrations of the paradoxical combination that Orwell had in mind. (p. 608)

Although Greenwald's (1980) classification of biases is a useful framework for attempting to better understand egotistical biases, many researchers have

investigated these types of biases under different labels such as "egocentrism" (Ross & Sicoly, 1979), "self-serving biases" (Gioia & Sims, 1985), "egotism" (Weary, 1980), and "subjective competence" (Bowerman, 1978), just to name a few. The following section will provide research evidence to support the contention that many of these types of egotistical biases exist, and may play an important role in helping to explain the metamorphic effects of power model as it relates to the area of leadership.

A number of researchers have considered the possible existence of "self-serving biases" in attribution (Bradley, 1978; Gioia & Sims, 1985; Huber, Podsakoff, & Tudor, 1986; Miller & Ross, 1975; Bradley, 1978). Self-serving biases have been defined by Gioia and Sims (1985) as, "the tendency of individuals to attribute cause for performance successes to personal factors but to assign cause for performance failures to external factors" (p. 547).

In their review of the literature, Miller and Ross (1975) concluded that there was only minimal evidence to suggest that individuals engage in self-protective attributions in conditions of failure. However, Bradley (1978) reexamined the relevant literature in this area and concluded that there was strong support for the hypothesis that individuals tend to accept

responsibility for positive behavioral outcomes and deny responsibility for negative behavioral outcomes. As Bradley (1978) noted, one of the reasons for the differing conclusions is because a considerable amount of new research had emerged since the Miller and Ross (1975) review appeared, and much of this research provided more conclusive evidence regarding the influence of motivational biases in the causal inference process (p. 57). In addition, Bradley (1978) argued that the data which Miller and Ross (1975) cited as evidence against the existence of self-serving biases could also be interpreted as evidence in support of a self-serving bias explanation.

The results of an experiment conducted by Gioia and Sims (1985) revealed a strong self-serving bias on the part of subordinates. In each trial, an experienced male middle-level manager was asked to assume the role of manager in a role play interaction along with five subordinate-subjects (paid male MBA students). Following the role play, each manager was instructed to complete a questionnaire which contained performance attribution measures. At the same point in time subordinates were asked to complete an identical questionnaire in a separate room (both manager and subordinate subjects were blind to the hypotheses of the study).

Overall, the results of the Gioia and Sims (1985) study "demonstrate a pronounced self-serving bias on the part of the subordinate. They show that subordinates tend rather strongly to take credit for their successes and to attempt to disassociate themselves from failure" (p. 558). In addition, the experimenters found clear actor-observer differences between managers and subordinates in the perception of the causes of the subordinates' performance. In general, the subordinates tended to attribute their performance more to external factors, while the supervisors made more internal attributions regarding the subordinates' performance (i.e., subordinates were responsible for their own performance outcomes). Although actor-observer differences were evidenced in both positive and negative performance conditions, such effects were much more pronounced in the poor performance conditions.

In her review, Bradley (1978) reported that self-serving, or defensive, attributions are most likely to be elicited following positive (self-serving) and negative (defensive) outcomes under the following circumstances:

- (a) when an individual's performance is public;
- (b) when an individual perceives himself to have high choice in taking an action and, as a result, feels responsible

for the outcome of his action; (c) under conditions designed to produce high ego involvement; and (d) under conditions designed to produce high objective self-awareness. (pp. 68-69)

Ross and Sicoly (1979) conducted a number of experiments to assess biases in the availability of information in memory, and attributions of responsibility, based on group interactions. In one of the experiments the researchers found evidence that egocentric biases exist in naturally occurring groups. In addition, they independently surveyed married couples regarding the extent of responsibility that they or their spouses had for each of twenty activities relevant to married couples. The results showed that, overall, one's own contributions were viewed as being greater than the contributions made by one's spouse. This is a very interesting finding, keeping in mind that, for each couple, both spouses independently responded to each of the twenty activities.

These researchers also found that, when asked to recall activity-relevant behaviors in their household, the participants tended to recall more of their own, rather than their spouses', relevant behaviors (Ross and Sicoly, 1979). Finally, this study also revealed a significant ($p < .001$) relationship between recall of self-relevant behaviors and an overestimation of perceived responsibility (Ross and Sicoly, 1979). These

findings are consistent with the hypothesis that egocentric biases in attribution are mediated by biases in the recall of relevant information. It is possible, however, that the direction of causality may be reversed (i.e., egocentric attribution may lead to a search for more self-relevant behaviors).

The results of another experiment conducted by Ross and Sicoly (1979) found that, when provided feedback regarding statements made by oneself or others in a problem solving task, subjects attributed a significantly greater proportion of the recalled statements to themselves after a success than after a failure ($p < .025$). These results also help demonstrate the prevalence of egocentric biases in judgments of responsibility.

Taken together, the results of the many studies and reviews cited above present strong evidence for self-serving or egotistic effects. Biases such as those outlined above could play an important role in the metamorphic effects of power model when such effects differ across various levels of group performance. That is, in cases of poor group performance leaders may rely upon ego-protective processes to (cognitively) shift responsibility to the subordinates. Conversely, in situations of high group performance, self-serving

biases may result in leaders accepting a great deal of the credit for the group's success.

If the metamorphic effects model is an accurate one, results such as those outlined above may be even more pronounced in situations where the leader employs an autocratic style of leadership. That is, a leader may be even more likely to blame a subordinate for poor group performance when s/he does not value the worth of that individual. Also, in instances of high group performance, autocratic leaders may tend to accept a great deal of the credit, because s/he may perceive that the outcome was the result of his/her own influence.

Metamorphic Effects of Autocratic Leadership

Belief in the existence of effects such as those referred to by Kipnis and his colleagues as "the metamorphic effects of power" is not new. A number of researchers over the years have attempted indirectly to investigate such effects. One of the seminal studies in this area was an experiment conducted by Strickland, in 1958, which considered the effects of closeness of supervision on supervisors' subsequent beliefs and behaviors toward their subordinates. In this experiment participants were required to supervise two individuals (they were actually fictitious subordinates) who were

being asked to perform a dull task involving arithmetic calculations. The supervisor's job was to get the subordinates to perform the task most effectively (a cash bonus either \$10.00, or \$5.00 was to be provided contingent upon the group's overall performance). Although the subordinates did not really exist, the subject was allowed to check on a worker's output periodically through production report slips and electric signals, and was given the freedom to reprimand/punish the individual if his [all participants were male undergraduate students] work was not being performed at an acceptable level.

By design, the supervisor was allowed to monitor one of the subordinates on nine of the ten trials, while the other subordinate could only be monitored on two trials. At the end of the experiment the supervisor was informed that both of the subordinates achieved the same level of performance. The supervisor was then allowed to decide which subordinate he wanted to monitor in subsequent trials. In addition, he was asked to give the reason(s) for each subordinate's performance level, and to indicate his level of trust in each of the subordinates.

The results of this study (Strickland, 1958) showed that the supervisors tended to monitor more, and trust less, the subordinate who was monitored more closely in

the initial trials (this "subordinate" was randomly chosen by the experimenter). The results suggest that the supervisors attributed the more closely monitored subordinate's performance to the fact that he was more closely monitored (an external attribution).

Conversely, it appears that the supervisors may have attributed the lesser monitored subordinate's performance to that person's own motivation (an internal attribution). Consistent with the metamorphic effects of power hypotheses, these results indicate that when the behavior of subordinates was closely monitored or "controlled" by a supervisor, the subordinates tended to be perceived by the supervisors as being externally motivated.

What may be operating in this situation could be more than just a motivational explanation of performance (i.e., Person A's performance, being monitored could be due to himself or to my monitoring; whereas Person B's performance, not having been monitored, can be due only to B himself). Perhaps the supervisors in these type of studies are behaving in a way which is consistent with self-perception theory (see Bem, 1967). A basic premise of self-perception theory is that, beginning in childhood, we are taught that attitudes could be inferred from behavior (White, 1980). Petty and Cacioppo (1981) provide an example,

consistent with self-perception theory, which clearly points out how individuals can draw erroneous conclusions through this type of reasoning:

Let's say that it is very likely that extremely lazy people are poor. Does this piece of information mean that poor people are extremely lazy? Of course not. People may be poor because they are lazy, but they may also be poor for any other number of reasons. Perhaps they are poor because they have been the object of unfair discrimination or because they have just suffered a major financial setback, such as a large medical expense....However, people do make this type of illogical inference, and people may therefore infer their attitudes from their behavior because they do not always think logically. (p. 166)

It is quite possible that supervisors in the studies being presented here are also inferring their attitudes (and beliefs) from their behavior. That is, they may believe that poor performers are more likely to be monitored, therefore, if they are monitoring an individual very closely this individual must be a below average performer.

Kruglanski (1970) noted that although the results of Strickland's (1958) study were consistent with attribution theory, there are several rival explanations which needed to be explored. Kruglanski (1970) developed three different models of the the social perceiver which he felt could be rival explanations of the data obtained by Strickland (1958).

The following are the three rival models postulated by Kruglanski (1970):

(a) the "rational" man - the model suggested by Strickland of a man who arrives at his attributions after a quasi-experimental consideration of the behavior enacted by the target person in relation to the situational circumstances; (b) the "rationalizing" man - the model... of an individual whose social judgments serve as avenues of reconciling his behaviors with his attitudes; (c) the "sensitive" man - the model ... of a man who bases his attributions on anticipated reactions of the target person to the interpersonal situation. (pp. 215-216)

Kruglanski's (1970) "Rational" model, consistent with attribution theory, specifically proposes that, "it is 'rational' to infer greater relative trustworthiness of the lightly monitored worker, as compared to the heavily monitored one, only when it is known that the former person's performance was at least as good as the latter" (p.229). The "Rationalizing" model, on the other hand, suggests that a supervisor may perceive the more frequently monitored worker as being less trustworthy in order to reduce the cognitive dissonance which may have arisen from having treated this individual in a distrusting manner. Kruglanski's (1970) third model, the "Sensitive" model, suggests that a supervisor might react negatively toward a closely monitored subordinate in anticipation of a hostile reaction on the part of the subordinate in

response to the supervisor's close surveillance (it is assumed that the close surveillance could be interpreted by the subordinate as a sign of distrust and lack of confidence).

Kruglanski (1970) conducted two experiments to evaluate the rival models outlined above. In the first experiment subjects read a booklet describing Strickland's (1958) experimental conditions and were asked to role play in order to guess the supervisor's response to the situation. In the first experiment the independent variables, within a 2 x 2 x 3 factorial design, were: (a) Type of Supervisory Power (reward vs. coercion); (b) Reported Subordinate Knowledge of the Unbalanced Surveillance (discrimination present, discrimination absent); and, (c) Supervisor Expectations Regarding Future Interactions With Subordinate (cooperative, competitive, or control/no mention of future interactions). The two dependent variables were Supervisor Attributions of Subordinate Trustworthiness, and Supervisor Assumptions regarding the subordinates' favorability toward him [all subjects were male undergraduates].

In the first experiment Kruglanski (1970) replicated Strickland's (1958) finding that the more frequently monitored subordinates were perceived as being less trustworthy. Another important finding of this study

was that the supervisors believed that the frequently observed worker in the coercive power condition would have a less favorable attitude toward him than the worker in the reward condition.

In the follow-up experiment subjects were allowed to directly serve as a supervisor (they did not simulate this through a role play). This experiment was conducted to determine whether the results of the first experiment would still be present in a situation where the performance outcome was not very clear. It was hypothesized that under conditions of incomplete information, the attribution process would be precluded from following a rational path. That is, according to the "rational" model it would be difficult to attribute trustworthiness to the lightly monitored worker when it was not clear how his performance compared to that of the the heavily monitored worker.

Overall, the results of these two experiments provided strong support for the "rational" model, and no support for either of the other two models (i.e., the "Sensitivity" model or the "Rationalizing" model). The "Rationalizing" model could not be supported by the data because the less frequently monitored subordinate was trusted more in the reward condition. Such a finding is not consistent with the hypothesis that subordinates are perceived as not being trustworthy as

a result of an attempt to reduce cognitive dissonance. Similarly, the "Sensitivity" model was not supported by data in either of the studies. The only model which was supported by the data was the "Rational" model. In light of these data, Kruglanski (1970) stated, "[t]hat this finding emerged unscathed from the multiple scrutinies to which it has been subjected in the course of the present research lends considerable support to the mechanism originally suggested by Strickland (1958) and consistent with attribution theory" (p. 228).

An unexpected finding in one of the Kruglanski (1970) experiments was that the less frequently monitored workers were judged to be more trustworthy, and more favorable towards the supervisor. This result appears to indicate that workers who are perceived to be more trustworthy and/or possess a more favorable attitude toward their supervisors would tend to be closely monitored. McFillen (1978) pointed out, that this anomaly in Kruglanski's (1970) data may be a result of the procedures which were employed. Specifically, subordinates in Kruglanski's study could only be rewarded or penalized on trials in which they were monitored. Therefore, in order to reward a subordinate, the supervisor had to monitor the performance of that worker. As a result, in some cases, worker surveillance may have been conducted out of a

desire to reward the individual, rather than out of mistrust.

In 1978 McFillen attempted to re-investigate the Kruglanski (1970) study after experimentally separating the supervisory power and subordinate performance variables. As in the previous studies conducted by Strickland (1958) and Kruglanski (1970), all subjects were male undergraduate students. However, the task and procedure employed in this study were not identical to the experimental method used by Kruglanski (1970). McFillen (1978), like the others, also asked subjects to monitor the performance of fictitious subordinates with whom they had no face to face contact, only one-way verbal communication was allowed. As in the other studies mentioned above, the subjects were not aware that the subordinates did not really exist.

The independent variables in McFillen's experiment (1978) incorporated three levels of Supervisory Power (reward only, penalty only, reward and penalty) and two levels of Subordinate Performance (successful, unsuccessful). The subordinates' task was to balance two independent audio inputs, through the use of a stereo balance meter and two volume controls provided on a "subordinates'" control panel. The supervisor was able to monitor the performance of any subject at will, simply by flipping on the switch corresponding to one

of the four subordinates. Unlike the previously reported studies (Strickland, 1958; Kruglanski, 1970) McFillen (1978), each subject was confronted by pre-programmed performance feedback which indicated that he was supervising two successful and two unsuccessful subordinates.

Contrary to Kruglanski's (1970) findings, McFillen's (1978) results showed that, as hypothesized, the subordinates who were most trusted were also the least monitored. This finding indicates that Kruglanski's results may have been confounded by requiring that performance monitoring precede the dispensing of rewards. McFillen (1978) also found that although the subjects attempted to monitor the performance of their subordinates an equal number of times, the duration of monitoring varied significantly (unsuccessful subordinates were monitored for a longer duration). As McFillen noted, the subjects may have believed that subordinates would easily notice the number of times they were monitored, but the duration of performance monitoring could be a much less salient element of the monitoring process.

Overall, the results of the McFillen (1978) study indicate that the type of power possessed by the supervisor does not systematically affect his perceptions of the work situation; his behavior is

principally guided by the subordinates' performance. This is consistent with the much of the literature previously cited in the area of attribution theory (e.g., Mitchell et al., 1977; Mitchell & Wood, 1980; Staw, 1975).

McFillen (1978) concluded that "[a]lthough differences in the type of power are not found to directly affect a supervisor's opinions of subordinates, this is not to say that the actual exercise of power does not have effects on future supervisor perceptions and attributions" (p. 432). It is important to note that reward power and coercive power are both influence mechanisms which could be used by supervisors to control or influence the behavior of subordinates and, thus, lead to the emergence of the metamorphic effects of power.

In a study of organizational power control, Kipnis (1972) conducted a business simulation in which supervisors had control over the "behavior" of a group of employees (nonexistent workers, who were supposedly working in another building). In this study, Kipnis (1972) manipulated the range of institutional powers (control over pay increase/decrease, transfer, and firing decisions) available to 28 university juniors and seniors serving as supervisors. As predicted, Kipnis (1972) found that the successful use of

institutional powers lead to all but one of metamorphic effects of power previously outlined in this paper (the powerholders did not experience an increased level of self-esteem). Consistent with the metamorphic effects of power theory, Kipnis (1972) concluded that, "the subjects with power viewed their workers as being controlled by the subject's power, that is, the subject's control of pay raises. The subjects with no power viewed their workers as free agents, whose efforts originated in the workers' own motivations to achieve" (p. 39). It is important to note that the production of all four "workers" in this study exceeded minimum company standards. Therefore, the obtained results reflect the powerholders' responses to instances of positive subordinate performance only.

Based on the factors which have been hypothesized to elicit the metamorphic effects of power (see Kipnis, 1987), it would be reasonable to suggest that the employment of an autocratic leadership style could lead to the emergence of these effects. Accordingly, Kipnis, et al. (1981) directly investigated the extent to which employee evaluations may be determined by the leaders' style and the leaders' assessments of the followers' motives, rather than by the performance of the followers.

It is not a novel idea to suggest that democratic leaders might evaluate their employees more favorably than will autocratic leaders. In fact, as noted by Kipnis et al. (1981), this suggestion is inherent in many of the early theories of leadership espoused by theorists such as McGregor (1960) and Likert (1961).

There are two equally plausible models which could explain why such a relationship would exist. Consequently, Kipnis et al (1981) attempted to experimentally evaluate these two competing models. The first model (the Performance-evaluation model, previously outlined in Figure 1) posits that a more democratic leadership style will lead to higher levels of performance which will, in turn, lead to more favorable evaluations of subordinate performance. The second model (the Power-usage model; previously presented in Figure 2) suggests that a more democratic leadership style will lead to greater attribution that employees are self-motivated which, in turn, should lead to more favorable evaluations. (because success is attributed to employee motivation).

Kipnis et al. (1981) examined their data, using path-analytic techniques, to evaluate the fit of these two competing models. In this experiment, subjects were asked to serve as leaders of work crews who were performing standard production work. All of the

participants in this study were undergraduate students. The exercise required one student (randomly assigned) to lead a group of five other students in the construction of paper airplanes. Each of the leaders was randomly assigned to either an autocratic or democratic leadership style condition. In the autocratic style condition, the leaders were asked to employ an autocratic leadership style, which was behaviorally described to them in writing prior to the exercise. Those leaders assigned to the democratic leadership style condition received instructions on how to lead the group in a democratic manner.

The researchers sought to test the fit of their experimentally derived data to the two competing models in an attempt to explain why there could be a positive relationship between more democratic leadership styles and higher evaluations of subordinate performance (i.e., democratic leaders evaluate their subordinates higher than autocratic leaders). One explanation could be that subordinates working for democratic leaders actually perform at higher levels, and consequently, they are appropriately evaluated higher (Performance-evaluation model; Figure 1). The other model being proposed, the Power-usage model (Figure 2), suggests that democratic leaders will be more likely to use non-controlling influence tactics which, in turn,

will allow a leader to attribute the resulting performance to a subordinate's own motivation, and as a result, would lead to a favorable evaluation (this is consistent with the metamorphic effects of power model).

Based on the results of this study Kipnis et al. (1981) concluded that, given average or better levels of performance, the belief among leaders that their subordinates are self-motivated leads to favorable evaluations. The zero-order correlations obtained in this study revealed non-significant relationships between task performance and leadership style (0 = democratic, 1 = autocratic; $r = .04$), as well as between task performance evaluations and the use of controlling influence tactics by the leader ($r = -.03$). Both of these findings are contrary to what was hypothesized in the Performance-evaluation model.

The researchers did, however, find significant correlations ($p < .01$) between the use of controlling influence tactics and task performance evaluations ($r = -.31$), as well as between task performance evaluations and leader assessments of subordinate motivation ($r = .65$). In addition, a significant correlation ($r = -.36$, $p < .01$) existed between the use of controlling influence tactics and leader assessments of subordinate motivation. Together, these data are consistent with

the Power-usage model which proposed that less controlling leadership styles (e.g., democratic leadership) would be associated with higher assessments of subordinate motivation (i.e., subordinates seen as self-motivated) which, in turn, would lead to higher evaluations of subordinate performance.

It is important to note that the zero-order correlation between imposed leadership style (0 = Democratic, 1 = Autocratic) and employee evaluations (more positive evaluations had higher values) was $-.14$, which is non-significant. This finding is somewhat surprising in light of the fact that the use of controlling influence tactics was significantly correlated with leader evaluations of employees ($-.31$, $p < .01$) as well as leader assessments of employee motivation ($-.36$, $p < .01$). The perceived use of controlling influence tactics was evaluated via a questionnaire completed by leaders and subordinates upon completion of the task (higher values = more controlling tactics). These results indicate that not all of the leader subjects were very effective at portraying their assigned leadership styles. The results related with the exhibited influence tactics indicate that the anticipated metamorphic effects were evident in the presence controlling tactics.

The path model based on the Kipnis et al. (1981) data (see Figure 6) indicates that performance evaluations were mediated by both leader style and the leaders' assessment of subordinate motivation. Contrary to what had been proposed in the Performance-evaluation model (as previously outlined in Figure 1), there was no strong link between leadership style and employee evaluations. The overall path model does however, provide strong support for the Power-usage model previously presented in Figure 2. This model proposes that a democratic leadership style, which employs non-controlling influence tactics, will lead to attributions that subordinates are self-motivated. It is expected that such attributions would then lead to more favorable employee evaluations.

It is also important to point out that the overwhelming majority of groups in the Kipnis, et al. (1981) study performed at satisfactory levels, as measured by the production of paper airplanes. For this reason, one cannot assume that these results would hold across all levels of performance. One of the major

drawbacks of the work conducted by Kipnis' et al. (1981) is that their models are applicable only to instances of good performance. The Performance-evaluation model, as outlined by Kipnis (1981), explicitly assumes an average or high level of performance in the democratic style conditions; it does not address instances of poor performance under democratic leadership. Also, the Power-usage model, as outlined by Kipnis (1981), cannot accommodate instances of poor performance because it proposes that subordinates (possessing the requisite knowledge, skills, and abilities) being led by democratic leaders will be viewed as being self-motivated; this would not likely be the case when group performance is low.

Kipnis et al. (1981) suggest that if an employee performed below acceptable standards, leaders would probably attribute the poor performance to the employee's own motivation (e.g., poor attitude, lack of motivation); however, empirical data were not available in their study to support this contention. The present paper will attempt to directly address the issues outlined by Kipnis et al. (1981) across three different performance levels (high, average, and low).

Summary

Although leadership has been one of the most widely researched topics in Industrial/Organizational psychology, many pieces of this puzzle are still missing. Over the years researchers have increasingly recognized the need to consider leader/follower relationships when attempting to gain a better understanding of this construct. However, one issue which has been relatively neglected by leadership researchers is the potential effects of leader behavior on his/her own beliefs and/or future behaviors.

In light of the findings of Kipnis and his colleagues in regard to the metamorphic effects of power (e.g., Kipnis et al. 1976; 1981), it may be important to investigate the potential effects associated with the use of an autocratic style of leadership. Evidence cited in the present paper strongly suggests that the leader/follower relationship often requires many of the conditions identified by Kipnis (1987) as being likely to lead to the hypothesized metamorphic effects (e.g., use of influence/control, use of tactics which are difficult to evaluate in terms of their effectiveness).

Evidence cited in this paper, provides support for the contention that as a result of the employment of a

very controlling leadership style (i.e., autocratic leadership) the metamorphic effects of power, or similar effects, may exist. These effects appear to be the result of cognitive categorization and attributional processes which allow individuals to rely heavily upon naive theories of human behavior in forming their judgments of others. In addition, it appears that leaders may rely heavily upon other cues, such as performance outcomes, to assist in forming judgments of subordinates (e.g., McFillen, 1978; Mitchell et al., 1977; Mitchell & Wood, 1980; Staw, 1975). Finally, work in the area of attributional egotism, or self-serving biases, indicates that self-esteem may play an important role in the attribution process.

The present study will attempt to extend and further explain the metamorphic effects of power model as it relates to leadership theory. As an extension of the Kipnis et al. (1981) findings, the present study will attempt to investigate the joint effects of Imposed Leadership Style (ILS) and Reported Group Performance (RGP) levels. It is hypothesized that leaders who employ a more autocratic, or controlling, leadership style will tend to elicit the metamorphic effects of power to a much greater extent than those who exercise a more democratic style of leadership. In addition, the present study will investigate the extent to which such

effects may be elicited across various levels of group performance. In the Kipnis et al. (1981) study, the researchers speculated that when faced with poor group performance, controlling leaders would tend to blame their subordinates. They were, in essence, suggesting that when group performance is low a controlling leader would be likely to say to him/herself, "even with all of my control and assistance they still couldn't perform well". However, their experiment was not designed to address this issue.

Pre and post measures of Task-specific Self-esteem will also be collected from the leaders in this study. The importance of considering the potential effects of task specific self-esteem is evident in a statement made by Luginbuhl, Crowe, and Kahan (1975), when they explained that:

If a successful performance on a given task is not important to the individual, then it is of little benefit to attribute success to one's ability. It may be more rewarding to attribute success to effort since we all have been taught that one should try....Failure at a similar task may be most easily attributed to lack of ability. The person feels he has tried his best, but he is simply not very good at this type of activity. (p. 93)

The results of a study such as the one being proposed could have very important implications within the study of leadership. In addition to providing critical information about some of the unanticipated

negative effects of autocratic leadership styles, these results, provide evidence to help explain some of the earlier static correlational findings in the leadership literature (e.g., see Korman, 1966). The results of this study could also provide further insight into other theories of leadership. For example, the present study could provide important information regarding "in-group" and "out-group" differences, as discussed in the Vertical Dyad Linkage Theory research.

Researchers in the area of leadership have pointed out the need to adapt one's style to fit the needs of the situation (see e.g., Vroom & Yetton, 1973; Yukl, 1981). Therefore, at times, the situation and/or followers may dictate the need to employ a democratic or autocratic style of leadership. Consequently, it would be important for leaders to recognize some of the unanticipated consequences of an autocratic style of leadership, should such effects exist.

If these hypothesized metamorphic effects of autocratic leadership do exist, it would also have implications for many other areas of research outside of the study of leadership. For example, in the area of performance appraisal it would be important to consider the potential influence of the supervisor's exhibited style of leadership in determining a subordinate's performance ratings. Similarly, in the area of goal

setting, it would be interesting to consider whether non-participatively set goals would be susceptible to the same types of effects being proposed here.

Problem / Hypotheses

Consideration of gender effects. Many researchers have suggested that significant gender differences may exist in studies of leadership, power, and influence. It has been argued that gender effects may be expected in subordinate impressions of leaders (e.g., Forsyth & Forsyth, 1984; Haccoun, Haccoun & Sallay, 1978; Jago & Vroom, 1982; Lord, Phillips & Rush, 1980), the use of influence strategies and tactics (e.g., see Kipnis, 1972; Cowan, Drinkard & Macgavin, 1984; Nachamkin, Cann, Reed & Horne, 1982; Rosen & Jerdee, 1973), as well as in the development of attributions (e.g., Deaux, 1976; Feather, 1969; Snyder, Rosenfeld & Stephan, 1976). However, there also exists a substantial body of research which suggests that gender differences may have little, or no, effect in the areas outlined above (see e.g., Bartol & Butterfield, 1976; Day & Stogdill, 1972; Landy & Farr, 1980).

Hollander (1985) noted that studies including women already in leadership positions have produced research findings which conflict with those studies in which

women were assigned to leadership positions. It has been suggested that observed gender effects in studies of leadership may be due more to acceptance of sex role stereotypes (by both males and females) than to true gender effects (Denmark, 1977; Kanter, 1977). As Hollander (1985) pointed out:

Studies reporting gender differences in leadership behavior usually take a sample from the general population of women and thrust them into the leader role; studies finding few differences between women and men leaders tend to sample the population of actual leaders (Darley, 1976; Osborn and Vicars, 1976; Foster and Kolinko, 1979). The factor that appears to be critical is whether the individual has the initiative in taking on the leadership role in the particular setting. (p. 523)

The vast majority of studies conducted to date in relation to the metamorphic effects of power model have included only male participants (e.g., Kruglanski, 1970; McFillen, 1978; Strickland, 1958). This finding, along with the recognition that the present experiment is one of the first to directly investigate the hypothesized metamorphic effects of power in leadership, has led this experimenter to employ only same sex groups in the present study (i.e., all members of each group will be of the same sex). The use of only same sex groups will also allow for the investigation of gender differences.

Problem. The present study was designed to investigate two distinct implicit theories regarding group behavior. The first implicit theory addresses the a number of proposed changes in leader perceptions of themselves and their subordinates. It is hypothesized that leaders may experience a number of metamorphic effects, simply as a result of successfully exerting control or influence over subordinates (through the use of an autocratic style of leadership). This theory will be referred to as the Metamorphic Effects of Autocratic Style.

These hypothesized metamorphic effects could be summarized as follows: (1) Leaders tend to overly control or influence the behavior of those whom they believe are not capable of performing successfully on their own. Therefore, when I exert overly controlling tactics, it is an indication to me that the individual(s) over whom I exert such control are incapable of successful performance on their own; (2) In instances of successful group performance I can attribute this success to my own efforts, because without my control these subordinates would not have been able to achieve the level of performance which they did on this task; and, (3) In instances of poor group performance it serves as confirmation to me that these subordinates need to be closely led and

controlled, because they are not capable of accomplishing the task on their own.

A secondary area of investigation was to consider the effects of bogus group performance feedback on the leaders' perceptions of their subordinates' attributes, and their assessment of behaviors which were exhibited during performance of the task. This hypothesized implicit theory of behavior deals with leader perceptions of group member behaviors and attributes at varying levels of performance.

It was expected that, as a result of their implicit theories of group performance, leader perceptions of their subordinates would be heavily influenced by (bogus) group performance feedback data. It is believed that leaders will possess an implicit theory of group performance which suggests that individuals in "higher performing groups" are more motivated, and exhibit more positive behaviors than individuals in "lower performing groups"; regardless of the behaviors/actions which may have been exhibited during performance of the task. That is, the performance level feedback would create a halo-type effect which the leaders' would then rely upon heavily in their assessments of subordinate motivation, behavior, and so on. Accordingly, it was hypothesized that leaders would perceive subordinate behaviors and attributes in "low performing groups" to

be less positive than those in "high performing groups", regardless of the behaviors that the leader actually perceived (i.e., the behaviors exhibited, or the group's true level of performance).

Metamorphic effects. Previous studies conducted by Kipnis et al. (1981), Kruglanski (1970), Strickland (1958), and others have investigated the potential effects of leader influence/control. However, the potential influence of these effects on the leader across varying levels of performance have yet to be investigated. Although Kipnis et al. (1981) found some support for the existence of the metamorphic effects in the context of the leader-subordinate relationship, the vast majority of groups in this experiment performed very well. There presently exists little, if any, information regarding such hypothesized effects across various levels of performance.

The present study was also designed to investigate the power of post-hoc attributions made by leaders. It is hypothesized that, as a result of their implicit theories of group performance, leaders will rely on (bogus) performance feedback, as opposed to the actual behaviors which were exhibited, when evaluating their subordinates. It is believed that, although leaders will work closely with their subordinates throughout the performance of this task, they will rely heavily

upon the Reported Group Performance (RGP) outcome in forming their impressions of the subordinates.

Variables/design. The following independent variables were employed in the present study: Imposed Leadership Style (autocratic, democratic) and Reported Group Performance Levels (High, Average, Low). The dependent variables include measures of the leaders': causal attributions (to evaluate who/what was believed to influence the group's performance), perceptions of subordinate attributes, preferred future leadership style, preferred social distance from subordinates, evaluation of each subordinate's performance, as well as measures of Task Specific Self-Esteem scales evaluated through Pre and Post measures.

Within a two by three between-subjects design (see Figure 7), the following hypotheses are being proposed:

Hypothesis #1:

Leaders who employ an autocratic style exhibit the metamorphic effects of power to a significantly greater extent than those who lead participatively.

It is hypothesized that a significant main effect for Imposed Leadership Style (Autocratic vs. Democratic) will exist across each of the dependent variables outlined above (i.e., Cells 1+2+3 vs. 4+5+6 - see Figure 7). However, a significant difference in true performance is not expected across the two Imposed Leadership Style (ILS) conditions.

Consistent with the related evidence presented earlier in support of the metamorphic effects of power model (e.g., Kipnis, 1972; Kipnis et al., 1976, 1981), as well as other related evidence (e.g., Kruglanski, 1970; Strickland, 1958; Haney & Zimbardo, 1976), it is expected that (as compared with participative leaders) leaders employing an autocratic style will: (a) devalue the worth of their subordinates to a greater extent (as evaluated through performance ratings and ratings of the subordinates' personal attributes); (b) seek greater social distance from their subordinates (As Fiedler [1967] noted, it is easier to be more autocratic when social distance is maintained and emotional involvement is minimal); (c) prefer to employ a more autocratic style in the future; (d) perceive subordinates to be less self-motivated; and, (e) report a greater increase in Task-specific self-esteem (TSSE), as measured by the difference score across Pre and Post TSSE scales.

Hypothesis #2:

Leaders of "High" performing groups (based on bogus RGP) perceive the members of their groups as possessing a higher level of motivation and personal attributes than do the leaders of "Average" and "Low" performing groups.

It is expected that many of the results hypothesized in H1 will be evidenced across the three Reported Group Performance (RGP) levels (Low, Average, and High). More specifically, it is expected that (regardless of the subordinates' true performance) as RGP levels decrease (Cells 3+6 vs. 2+5 vs. 1+2, See Figure 7), leaders will: (a) devalue the worth of their subordinates to a greater extent (Downey et al., 1979; Mitchell et al., 1977; Rush, 1977; Staw, 1975), as evaluated through ratings of the subordinates' work performance and personal attributes; (b) seek greater social distance from their subordinates (as a consequence of devaluing them); (c) report a desire to employ a more autocratic style in the future (see Yukl, 1981); (d) perceive subordinates to be less self-motivated; and, (e) attribute performance more to the behavior of their subordinates (i.e., blame the subordinates for low group performance, while taking more credit for high performance).

A secondary area of investigation in the present study is to consider the effects of bogus group performance feedback (and post-hoc attributions) on the leaders' perceptions of subordinate attributes, and performance. This hypothesized implicit theory of behavior addresses the leaders' perceptions of group member behaviors and attributes, across varying levels of reported performance.

Studies designed to investigate implicit leadership theories (e.g., Downey et al., 1979; Mitchell et al., 1977; Staw, 1975) have found that individuals may employ (naive) implicit theories to assist in the explanation of human behavior. Research evidence strongly indicates that humans may employ information simplification techniques (e.g., cognitive categorization) in effort to perceive, encode, store, recall, and evaluate information in an economical way (see e.g., Cantor & Mischel, 1979; Rosch, 1976; Taylor & Fiske, 1978). It is as a result of these types of categorization mechanisms that implicit theories of human behavior can play a significant role in determining one's interpretation, and explanation, of a given event (see Lord et al., 1982).

Just as the Metamorphic Effects of Power theory is based on an implicit theories about powerholders and their target individuals (see Kipnis, 1976), this

section focus on implicit theories regarding reported group performance levels. As Phillips and Lord (1982) noted, in the context of describing how observers identify leadership behavior, "observers implicitly believe that leadership produces certain behaviors and effects. Therefore, if those behaviors and/or effects are observed or assumed, and they are ascribed to personal qualities of an actor, the observer will perceive that the actor has demonstrated leadership" (p. 144).

Similarly, the present study will attempt to investigate how leaders evaluate group member behaviors and attributes. The hypothesized implicit theory operating in the present study suggests that leaders will implicitly assume that high performing groups consist of individuals who are motivated, capable, intelligent, hard working, effective, and so on. Therefore, if high performance is observed, the leader will perceive that the group members possess those characteristics assumed to be inherent in high performing groups. The opposite types of effects would be expected for low performing groups.

It is expected that, as a result of their implicit theories of group performance, leaders will rely on (bogus) performance feedback, as opposed to exhibited behaviors, when evaluating their subordinates. It is

being proposed that, although leaders will work closely with their subordinates throughout this task, they will rely heavily upon reported group performance information in forming their impressions of the subordinates (regardless of the behaviors/actions which may have been observed during performance of the task).

Also within the hypotheses related to the Reported Group Performance Manipulation, it is expected that the TSSE difference scores (Pre - Post) will differ significantly between the High RGP level and each of the other two RGP levels (Average and Low); this hypothesis is based on the attributional egotism and self-serving bias effects outlined earlier. These TSSE difference scores were designed to evaluate changes in TSSE which could be attributable to the experimental manipulations. Attributional egotism effects may serve to protect the leaders' self-esteem from being reduced, and, therefore, significant differences are not expected across the Average and Low RGP levels (egotism effects may protect the leaders' self-esteem in the Low RGP condition).

In summary, it is expected that as (bogus) RGP decreases across the three performance levels (Cells 3+6 vs. 2+5 vs. 1+2, See Figure 7), leaders will perceive their subordinates more negatively (in terms of their individual contributions and personal

attributes), and report a greater desire to employ a more autocratic style when leading them in the future. Significant group differences in performance evaluations are expected across RGP levels (High, Average, Low), with subordinates in High performing groups being evaluated the highest, and Low RGP groups receiving the least favorable evaluations.

Hypothesis #3:

Leaders in the Autocratic ILS/Low RGP condition (Cell #1, Figure 7) exhibit the hypothesized metamorphic effects to a much greater extent than leaders in the Democratic ILS/High RGP condition (Cell #6, Figure 7).

Based on the research evidence discussed earlier, it is being hypothesized that a significant interaction effect will be found among the ILS and Reported Performance outcome measures. It is expected that leaders in the Autocratic ILS/Low RGP condition (Cell #1, see Figure 7) will: (a) devalue their subordinates more than will leaders in the other conditions; (b) prefer the greatest social distance; (c) report the greatest desire to employ an autocratic style when working with this group again in the future; and, (d) perceive their subordinates to be the least self-motivated.

Conversely, it is expected that leaders in the Democratic ILS/High RGP condition (Cell #6) will: (a) value their subordinates more than will leaders in the other conditions; (b) prefer the least social distance; (c) report the greatest desire to employ a democratic style when working with this group again in the future; and, (e) perceive their subordinates most favorably in terms of personal attributes and self-motivation.

Other expected ILS by RGP findings (related to the TSSE variables) is that leaders in the "autocratic style / High reported performance" condition (Cell # 3) will attribute group performance more to themselves, and, therefore, will experience the greatest increase in TSSE (as evaluated through Pre and Post TSSE scales). Also, due to attributional egotism (see e.g., Gioia & Sims, 1985; Greenwald, 1980) it is expected that leaders in the "autocratic style / Low group performance" condition (Cell #1) will attribute significantly less responsibility for group performance to themselves than will leaders in the other cells.

Previous studies conducted by Kipnis et al. (1981), Kruglanski (1970), Strickland (1958), and others have investigated the potential effects of the use of influence/control on the powerholder (i.e., the leader). Although some support for the metamorphic effects of autocratic style was found in the Kipnis et

al. (1981) study, it should be noted that the vast majority of groups in that experiment had achieved a high level of performance on the task.

There presently exists little, if any, information regarding these proposed effects across varying levels of performance. If the hypothesized metamorphic effects of autocratic leadership do exist, it is important to investigate such effects across all levels of performance.

Method

Design

A 2 x 3 between-subjects design was employed. The two independent variables of investigation are Imposed Leadership Style (Democratic / Autocratic) and Reported Group Performance (High, Average, or Low).

Participants

Three hundred ninety-three undergraduate psychology students at a large Urban, Eastern college participated in this study. All individuals voluntarily chose to serve as participants. Within each of the six experimental conditions, one leader was instructed to lead two subordinates (using either a Democratic or Autocratic style) in the performance of a problem solving task; all participants were randomly assigned

to their roles. Upon completion of the group task, all group members were informed of their group's performance level -- this feedback was actually randomly determined bogus feedback. All participants were unaware of the experimental conditions and hypotheses of the study.

The 393 participants included 150 males, and 243 females. The leader sample included 131 participants. Leader group demographic data are presented in Tables 1a-c. The subordinate sample consisted of 262 participants (two per leader). One hundred males, and 162 females participated in the role of "subordinate". Each group was comprised of same-gender participants. This was done because almost all of the research of this type to date has been conducted with male participants exclusively. This, along with the conflicting findings reported earlier regarding sex effects in studies of leadership, led to the decision to employ same-gender groups only. While it is not the purpose of this study to consider gender effects in leadership, this issue will be briefly addressed, as it relates to results of the present study.

Procedure

Upon reporting to class, students were asked to voluntarily take part in what was presented as a group exercise in problem solving. Although the exercise was conducted during class time, each student was told that participation would be voluntary. Only five potential participants chose not to participate in this study. At the time of recruitment the participants were unaware that they might be eligible to take part in a lottery as a result of taking part in this study.

The study was conducted during class time, and a number of groups were run concurrently within a class. Each group was comprised of three participants -- one leader and two subordinates. Therefore, the number of groups per class was dependent upon the number of volunteers in the class. The average number of groups per class was approximately seven, with a lower limit of five and an upper limit of eleven.

Upon agreeing to participate in this study, each volunteer was asked to complete a Task Components Self-Assessment form (this was actually a "Pre" Task Specific Self-Esteem [TSSE] questionnaire, see Appendix A). Upon completion of this form, participants were randomly assigned to groups of three and then they were randomly assigned to one of the three roles within the group (i.e., either the leader role, or one of the two

subordinate roles). At that time each participant was also provided a name tag with his/her role identified to ensure that all participants recognized the roles of the members in their group.

Although the participants were randomly assigned roles, they were not told how the assignment of roles were made (this topic was not addressed). They were not informed that selection into these roles was done randomly because it was believed that the leader's acceptance by the subordinates might be questionable if the subordinates knew that this person was assigned the role purely because of the "luck of the draw". However, it is possible that, in the absence of such information, the participants may have believed that there was some logical rationale for the assignments (such as their responses on the Pre-TSSE form). This approach may have also led the leaders to believe that, for some reason, they deserved the leadership role. Throughout the study, none of the participants ever questioned the role assignment process.

Once the roles had been identified, the leader was informed (in writing) that s/he would be participating in a study designed to "investigate how quickly leaders can effectively adapt to an assigned leadership style". S/he was also told that the ability to adapt quickly to an assigned leadership style is an important indication

of one's overall leadership ability (see Appendix B). That is, in order to be an effective leader one must be able to quickly and effectively adapt to various styles of leadership.

The leader was then provided a written description of the leadership style to which he had been assigned to use during this task (either an Autocratic or Democratic style -- see Imposed Leadership Style Instructions as outlined later in this section). Each leader was unaware of the instructions provided to any other leader, and s/he was asked not to share any of the information provided thus far.

At this time the leaders were also instructed that they were not to perform any of the mathematical calculations which may be required during the exercise. This precaution was taken to ensure that an autocratic leader would not take it upon him/herself to perform all aspects of the task without including the subordinates in any way. Finally, the leaders were told that it was critical that they adhere to their written (Leadership Style) instructions at all times. While the leaders were being briefed on their roles, as outlined above, the subordinates were in another section of the room reading their instructions which indicated that they would be participating in a study designed to

investigate performance on various types of group tasks (see Appendix C).

In an attempt to increase participant involvement in the task, and to encourage high performance, instructions to all participants asked them to approach the task as if they were seriously performing this task in a real organization. As an additional incentive to perform well, each participant (leaders and subordinates) was informed that if his/her group performed well on this task, his/her name would be automatically entered into a lottery drawing. They were also told that there would be other performance indicators which would allow their names to be entered into the lottery (such as the seriousness with which they approach the task) which would be discussed in detail at the conclusion of the exercise. Prior to performing the task it was emphasized to all participants that, even if their group did not perform very well, they would still have an opportunity to be included in the lottery drawing based on the seriousness with which they approached the task. Due to the nature of the study (i.e., the deception involved) every participant's name was entered into the lottery drawing; they were informed of this at the conclusion of the study.

At this time the leader and the subordinates were brought together in their respective groups. Each of the participants (leaders and subordinates) were provided the Task Instructions and Team Information sheets (see Appendixes D and E). They were told that this information, along with the Team Statistics Forms (to be given to the group later), would provide all of the information necessary to successfully complete the task. After having allowed time for the participants to read through these instructions, the experimenter read the instructions aloud and provided an example (on the blackboard) of how the task is to be approached.

The task employed in this study required the group participants to work on a baseball-related problem solving task (described in the Task Instructions). The goal of this task was to accurately rank order all six of the baseball teams in question, based on the performance data provided (see description of Task, below). Although the solution to the problem of accurately rank ordering the six teams was derived from actual statistical data taken from the 1959 Major League baseball season, task success did not require any knowledge of baseball, or baseball statistics.

In reviewing the task instructions the experimenter emphasized that knowledge of baseball terminology was not a requirement to perform well on this task. The

participants were told that baseball knowledge would not help in any way on the task (this was done to reassure those groups with limited knowledge of baseball that they would have an equal opportunity in the performance of this task). In fact, knowledge of baseball should not offer any advantage in this exercise because it involves a mathematical/problem solving task which merely uses baseball statistics as the stimulus material.

Instructions provided to all participants stated that they would be working on a task which would require them to use the individual statistics of Major League Baseball players from a previous season. This information was to be used in order to determine the sequence in which these teams finished at the conclusion of the season in question. The roles of each of the participants were again reviewed prior to beginning the task. Although the leader was allowed to instruct, offer suggestions, and make decisions during the performance of the task, s/he was reminded that s/he WOULD NOT BE ALLOWED to perform any calculations.

After fully addressing any task-related questions, the experimenter provided each group leader with all of the materials necessary to perform this task (these included the Team Statistics Forms [see Appendixes F1-F6], one calculator, paper, pencils, a form on which

to provide their answers to the problem, etc.). The participants were then told that they would have fifteen minutes in which to complete this task, and they were instructed to begin.

At the conclusion of the task, each group was required to submit their Answer Sheet which indicated their solution to the problem (a ranking of the six teams from first to sixth place), as well as an indication of the number of teams they thought they had classified correctly (see Appendix G). After submitting a solution to the problem (i.e., their list of teams from first through sixth place), the Answer Sheets were "scored" and each group received (bogus) performance feedback both verbally and in writing (see Baseball Task Norms sheet -- Appendix H). The performance feedback provided to each of the groups had actually been randomly assigned prior to the session.

Depending upon the condition to which the group had been randomly assigned (see Reported Group Performance, below), each group was informed that they had correctly identified ONE (low performance condition), THREE (average performance), or ALL SIX (high performance) of the teams included in this exercise. After receiving feedback on their team's performance, the leader and subordinates were asked to again separate to different sections of the room to complete the follow-up

evaluation materials (for Leader materials see Appendix I; for Subordinate materials see Appendix J).

Upon relocating themselves to a separate part of the room, the leaders were asked to complete a number of evaluation forms which included all of the dependent measures outlined below (see Dependent Variables), the Post TSSE questionnaire (see Appendix K), and the manipulation check (see Appendix L). The subordinates were also asked to complete similiar forms at this time, although none of these data (with the exception of the manipulation check information) will be addressed in the present study.

Upon completion of the experiment the participants were fully debriefed in accordance with the APA Ethical Principles (1982); this included a detailed explanation of the performance deception. Among the issues covered during the debriefing, the experimenter informed the participants that the leaders were provided written instructions which asked them to behave in either an autocratic or democratic manner (depending upon condition assignment) and, therefore, the style exhibited may not have been indicative of that individual's truly preferred style. The participants were told that, contrary to what was stated in the leader instructions, there is no clearly established link between one's ability to adapt to an

assigned style and his/her leadership ability or potential.

During the debriefing period the experimenter also informed the participants that their group performance feedback was not true; it had been randomly assigned prior to the study. It was at this time that the participants often laughed and appeared to be surprised (indicating to me that the performance manipulation may have been successful). Another sign that the performance manipulation had worked was that immediately after having their answer sheets "scored" and then receiving feedback, the participants were often observed giving one another "high fives" after being informed that they had performed very well.

The participants were also informed at this time that, because of the nature of the study, each of their names would be included in the lottery drawing to be held at the conclusion of the study. They were also reminded that the drawing would be for three prizes which are as follows: First prize \$100, Second prize \$75, and Third prize \$50. The experimenter did allow the participants to receive the true results of their group's performance if they chose to do so at the conclusion of the debriefing session. Finally, the experimenter briefly talked about the research design and hypotheses of the study. In concluding, the

experimenter encouraged the participants to follow-up with him should they have any questions, thanked them for their participation, and requested that they not share information regarding the study with other students who could potentially serve as participants in the future.

Task

The task employed in this study required an assigned leader to lead two subordinates in the performance of a baseball-related problem solving task. The task simply required the members of each group to add three columns of data (labeled Runs Scored, Hits, and Home Runs) for each of the six teams and then utilize the information provided on a Team Information form to correctly identify the order in which these teams finished at the end of the season in question. The Team Information forms provided all of the information necessary to correctly solve this problem.

The statistics included in the Team Information forms were based on player statistics from six National League teams during the 1959 Major League Baseball (MLB) season. Although the participants were informed that the data they were using reflected the actual year-end statistics from a Major League Baseball season, they did not know from what year the data were

taken, and team names were omitted. The 1959 MLB (National League) season was used because this season was completed over thirty years ago, therefore, even the most expert baseball fan would have difficulty identifying the teams (based on the statistics) and then recalling the order of finish. The participants were only given player batting statistics, by position, for all starting players (excluding pitchers) on each team, and group statistics for the reserves. They were not provided with the names of any of the players whose statistics were reflected on the team forms (see Appendixes F1 to F6).

The Team Information page (Appendix E) provided each group with the necessary information to correctly identify the year-end standings for each of the six teams included in the task. Based on this information it is possible for the group to derive the "correct" solution to the task (that is, to accurately rank all six teams) by simply totaling the three columns for each team and then applying the information provided in the Team Information page.

After the participants had calculated all of the relevant information, they were faced with the task of correctly identifying the year-end standings for the six teams, based on the information which had been provided. The following is an example of the type of

information provided on the Team Information form -- For the statistic Runs Scored: "The FIRST and SECOND place teams each had more total runs scored than any of the other teams (3rd through 6th place)". Therefore, to correctly identify the FIRST and SECOND place teams (in no particular order), the group had to calculate the number of total runs scored by each of the six teams, and then identify the two teams which had the most total runs scored. The other statistics will yield information about the third and fifth place teams (in no particular order), then the first, second and fourth place teams (in no particular order), and so on. Taken together, this information could be analyzed to correctly derive the year-end standings for the six teams in question.

Although the leader was not to perform any calculations him/herself during the task, he (and/or the group) had a number of very important decisions to make such as "What process should the group use to approach the task?", "What information is relevant", "How should the work be distributed?", "Which one of the two subordinates should use the calculator?", "How should the information be used to determine the team standings?", etc.

The task was designed in such a way that it would yield a measure of the group's true level of

performance (i.e., the correct answer could be rationally derived through the Task Information). A measure of true performance on this task is important because the hypotheses of this study are based on an assumption that there will not be a significant difference in true performance levels across experimental conditions. The task was also designed to be both interesting and involving. In addition, it was expected to simulate the types of tasks performed in most organizations. That is, the task is more cognitive, and less manufacturing in nature than most experimental tasks of this type (e.g., those used by Kipnis et al., 1981; Kruglanski, 1970; and, Strickland, 1958).

Another important feature of this task is that, as with many organizational assignments (e.g., making a presentation, putting together a proposal, preparing a report, etc.), the group will not have an objective measure of how well they performed until they receive feedback. For example, when writing academic papers or a business proposal, one may have some estimate how well his/her ideas will be accepted, but s/he cannot be certain until s/he receives feedback. Finally, one other consideration in constructing this task was that it be the type of task which would be equally amenable to the use of both autocratic or participative

leadership styles. According to Vroom and Yetton's Contingency Model, this task would fit with both the autocratic (AI or AII) and participative (GII) leadership styles (see Vroom & Yetton, 1973).

Independent Variables

Imposed leadership style (ILS). Participants randomly assigned to the Democratic Leadership Style condition were instructed to act as follows (these instructions have been adapted from those developed by Kipnis, et al. 1981):

During the following period, you are to lead your group in a democratic manner. This means that you should seek input from your group members before making decisions. You are to decide after consulting with your group members and considering their individual opinions. You are to allow your group members to have influence over the decisions which can affect the group's performance. You are also to focus on keeping everyone involved in the decisions which need to be made. You should not to give orders; you are to seek the cooperation of the other group members. As stated earlier, you are not to carry out any of the group's mathematical calculations yourself. You are not to make any decisions alone. You are to solicit the opinions of your group members before taking any action. When one of the members of your group begins to tell you what he thinks, you are to actively listen and be sure that the other group member considers this information. You should carefully consider opposing points of view and quickly discuss any disagreements before asking your group members to help make a decision. In addition, you are to focus on leading your team in

accomplishing the objectives of the assigned task.

Participants randomly assigned to the Autocratic Leadership Style condition were instructed to act in the following way (instructions adapted from Kipnis et al., 1981):

During the following period, you are to lead your subordinates in a highly authoritative manner. This means that you are not to seek input from them when making decisions. You are to make all of the decisions for your subordinates. You are to decide without consultation or consideration of your subordinates' opinions. You are to be dominant and aggressive. You should also focus on maintaining control over the group, although, as stated earlier, you are not to carry out any of the group's tasks yourself. You are to give orders and to insure that these orders are carried out by your subordinates. No one but you is to make any decisions. You are not to solicit opinions. When your subordinates begin to tell you what they think, you are to interrupt them and continue to make your point, emphasizing that you have been designated the leader, so what you say goes. You should aggressively attack opposing points of view through interpretation and by forceful verbal measures. You should not let anyone else take control of the group. In addition, you are to focus on leading your team in accomplishing the objectives of the assigned task.

Reported group performance. Each group was randomly assigned to one of three "reported performance outcome" conditions (High, Average, or Low). Bogus Reported Group Performance (RGP) was provided to the group verbally, as well as in writing (see Appendix H, Baseball Task Norms).

Regardless of their true level of performance, participants in the Low RGP groups were informed that their groups accurately identified the final year-end position of only one of the six MLB teams (one out of six correct). In the Average Performance condition the participants were informed that their groups had successfully identified the year-end position of three of the six teams (an average level of performance). In the High Performance condition the participants were informed that their groups successfully identified the correct year-end standing of all six teams (high performance).

Dependent Variables

Causal attributions. A causal attribution scale was employed to evaluate the extent to which the leader perceived each of three factors (the leader him/herself, the subordinates, and external factors) as a causal factor in determining the group's overall performance. The causal importance of these three factors were assessed through twenty 7-point Likert-type scale items, adapted from a scale previously developed by Phillips and Lord (1981). As in the Phillips and Lord (1981) study, each of the item

anchors ranged from (1) "not a cause at all", to (7) "an extremely important cause".

The Phillips and Lord (1981) scale consisted of two items pertaining to the ability, motivation, effort, and support of the leader and the subordinates. Phillips and Lord (1981) found these ten-item scales to be a reliable index of causal ascriptions (coefficient alpha estimates = .89). Two items referring to guidance and structuring, previously included in the Phillips & Lord (1981) study, were not included in either the Leader or Subordinate sub-scales in the present study. These items were excluded because the instructions provided to the leaders in the autocratic condition would preclude the subordinates from performing these functions.

As a result, the leader was asked to complete a twenty item causal attribution scale (see Appendix I) upon completion of the task. This twenty item composite scale consisted of an eight item sub-scale pertaining to the leader (i.e., him/herself), an eight item sub-scale pertaining to the subordinates, and a four item sub-scale pertaining to external factors (e.g., luck, the difficulty of the task).

An exploratory factor analysis (with varimax rotation) of this twenty-item scale revealed five distinct factors (see Table 2). As expected, the first

of these factors consisted of all eight items pertaining to the leader. The second factor had seven of the eight hypothesized subordinate items loading highest on this factor. Item number 13 "encouragement provided by the other group members (excluding the leader)" was the only subordinate item which failed to load highest on this factor. These findings suggest that the leader and subordinate causal importance sub-scales held together as hypothesized.

As also seen in Table 2, the other three factors were comprised of various items which had been proposed to be included within an "external factors" scale. The discovery that these items did not "hold together" as one factor is not very surprising. Each of these four "external factor" items refer to distinct types of external factors (i.e., the difficulty of the task, luck, the number of baseball teams in the task, and the "breaks" of the task), therefore, it is not surprising to find that they do not all load on one factor.

It appears that the "external factors" scale may actually represent a number of causal factors external to either the leaders or the subordinates. Accordingly, the results obtained from any analyses of the "external factors" sub-scale must be interpreted cautiously.

Reliability estimates for each of these three proposed sub-scales suggest that the first two factors "leader causal importance" and "subordinate causal importance" possess a high degree of internal consistency. The eight-item leader causal importance scale yielded a reliability estimate of .93 (N=130). The alpha value for the eight-item subordinate causal importance scale was .91 (N=130). For reasons outlined above, the third proposed sub-scale (the four "external factors" items) was found to have a rather low estimate of internal consistency (alpha=.47; N=130). The low item reliability within "external factors" scale may cause an attenuation problem when attempting to investigate the relationship between this scale and other variables. Again, this points to the importance of interpreting carefully the results obtained on this variable.

Upon completion of the causal attribution scale described above, the leaders were also asked to respond to a 7-point Likert-type item pertaining to overall causal attribution. This item asked the leader: "Overall, who do you feel caused the group to perform at the level at which it did?". The scale anchors

ranged from 1 = "Almost entirely the leader" to 7 = "Almost entirely the subordinates".

Preferred Future Style. Preferred future style (PFS) was evaluated through the following two items:

(1) "If you were to lead these same subordinates on this task again, what type of leadership style would you employ?". The scale anchors ranged from 1 = Extremely Directive to 7 = Extremely Democratic.

(2) "If you were to lead a different pair of subordinates on this task, what type of leadership style would you employ?". The scale anchors ranged from 1 = Extremely Directive to 7 = Extremely Democratic (see Appendix I).

Performance evaluation ratings. After completing the assigned group task, the leaders were also asked to provide an assessment of each of their two subordinates' performance. The seven items included in this scale referred to each subordinate's quality of work, quantity of work, motivation, problem solving ability, interpersonal skills, ability to work on a group task, and overall performance. The scale anchors ranged from (1) = "Poor" to (5) = "Outstanding" within each of these areas. Each of these measures were designed to address aspects of subordinate performance which should have been observable during performance of

the task. Therefore, even in the absence of overall group performance information, the leader should be able to accurately assess the performance of each subordinate. In addition to the subordinate performance scale described above, the leader was also asked to provide a self-assessment in each of those areas (see Appendix I).

A coefficient alpha estimate of the six-item subordinate performance appraisal scale reliability was .92 (N=260), and an alpha value of .86 (N=129) was obtained for the six-item leader self-appraisal scale. As expected, the items in each of these scales showed a high degree of internal consistency.

Perception of Subordinate Attributes. Based on his/her interaction with each subordinate during performance of the task, the leader was asked to indicate the extent to which each of fifteen personal attributes accurately described that subordinate. The scale anchors for each of these items ranged from 1 = "very inaccurate" to 5 = "very accurate".

The leaders were asked to complete these fifteen Likert-type items as they pertained to each of their two subordinates. The following fifteen personal attributes were evaluated: intelligent, lazy, competent, motivated, unreliable, unproductive,

valuable, careless, unfriendly, capable, deceitful, pessimistic, modest, self-reliant, and confident (see Appendix I). A reliability estimate for this fifteen-item scale suggested a high degree of internal consistency; $\alpha = .88$ ($N = 258$). The scoring was reversed for each of the negatively worded adjectives prior to investigating the scale reliability.

Preferred Social Distance. A measure of preferred social distance (PSD) was employed to evaluate the leader's desired social distance from each of his/her subordinates. This measure was evaluated through five, 5-point Likert-type items which asked the leader to indicate the extent to which s/he would like to: get to know him/her [that subordinate] better; socialize with him/her at school; meet him/her for lunch; work with him/her on a school project; and, become his/her friend (see Appendix I). Scale anchors ranged from "Definitely, Yes" to "Definitely Not".

Upon completion of the task, the leaders were asked to complete the PSD scale items as they pertained to each of the two subordinates. The internal consistency estimate (α) was equal to .91 across all subordinates ($N=260$).

Task Specific Self-Esteem (Pre-post measures). The task-specific self-esteem (TSSE) was evaluated through an adaptation of the Greenhaus and Badin (1974) TSSE scale. The scale employed in the present study asked each of the participants to rate his/her level of self-esteem in each of the following areas: leading a group, solving word problems, and working with mathematical data [see Appendixes A (Pre-TSSE), and K (Post-TSSE)].

The overall TSSE scale consists of twelve items. The first three items are comparative in nature. That is, they compare the individual's relative self-esteem level across the three areas evaluated (item number 3 was recoded such that a higher score would reflect a greater degree of TSSE in working with mathematical data. The remaining nine items consist of three items designed to evaluate the individual's TSSE in each of the sub-areas described above.

As seen in Table 3, a factor analysis of the twelve-item Pre- and Post TSSE scales (using varimax rotation) shows that the three hypothesized sub-scales can be clearly distinguished from one another. These results also provide strong evidence to suggest that each of the twelve items fit within their hypothesized sub-scales. Although the first three scale items exhibit a moderate to high factor loading on more than

one factor, this was expected, because these items were designed to compare relative self-esteem levels among the three separate sub-scales (refer to Appendixes A and K).

Separate reliability estimates for each of the three, four-item Pre-TSSE sub-scales show a high degree of internal consistency. Observed alpha values were .80 (N=118), .89 (N=118), and .83 (N=118), for the Word Problem Ability, Mathematical Aptitude, and Group Leadership sub-scales, respectively. Internal consistency estimates (alpha) for each of the four-item Post-TSSE sub-scales were quite similar to those listed above: .84 for Word Problem Ability (N=119), .90 for Mathematical Aptitude (N=119), and .78 for Group Leadership (N=119).

Manipulation Checks

Perceived Leadership Style. As part of this experiment, each group leader was instructed to employ either an autocratic or a democratic style of

were consistent with the style which they were assigned. In recognition of this, three separate manipulation check measures were utilized to evaluate the extent to which the leaders exhibited the behaviors outlined in the Leader Instructions provided to them prior to the task.

At the conclusion of the task, the leader, and each subordinate, was asked to complete eight 5-point Likert type scale items designed to capture the leader's exhibited leadership style and influence tactics (to determine if his/her behavior was consistent with the assigned style). These eight items evaluated the extent to which the leader exhibited a number of behaviors, such as: "Gave Orders", "Consulted With Subordinates on Decisions", and "Controlled the Actions of the Group Members". The wording of each item was taken directly from the instructions provided to leaders prior to beginning the exercise. All scale anchors ranged from (1) = "Not at All" to (5) = "Most of the Time".

It was expected that this eight-item scale would provide an indication of the extent to which the leader exhibited autocratic and/or democratic behaviors during the task. Two items referring to autocratic behaviors ("Gave orders", "Controlled the behavior of the subordinates") were reversed scored so that a higher

total score would reflect a greater degree of democratic behavior.

A factor analysis (after varimax rotation) conducted on the leadership style manipulation check scale data provided by the leaders revealed two distinct factors. These results show that all six of the proposed "democratic style" items (1,3,4,5,6, and 8) loaded most heavily on Factor 1, and the two "autocratic items" loaded most heavily on Factor 2, as hypothesized (see Table 4). In addition, a reliability estimate for the eight-item leadership manipulation scale, as completed by the leaders, yielded an alpha of .89 (N = 131). The second manipulation check, which was employed to obtain responses from the subordinates on the same scale outlined above, revealed an internal consistency estimate (alpha) of .70 (N = 262).

It is interesting to note the sizable difference in internal consistency estimates across the leader and subordinate sample data. The alpha value based on the leader sample was .89, while the subordinate sample yielded a lower reliability estimate of .70. This result was not surprising, in recognition of the fact that, prior to completing this scale, the leaders were aware of the behaviors which they were being asked to exhibit; the subordinates did not have this information. Also, the subordinates were not aware of

the leadership style manipulation and, therefore, may not have been attending to the leadership style cues which were exhibited by the leaders.

As a result, it may be argued that the leaders were able to more clearly recall the behaviors which they had exhibited. Prior to working on this task, the leaders knew the specific behaviors which they were to exhibit. Therefore, it would be expected that the leaders would have been focusing their attention on the types of behaviors which they were exhibiting. However, it is also plausible that, due to a desire to please the experimenter, the leaders may have reported that they did exhibit those behaviors which they were requested to portray, regardless of their true behavior during this task. However, if the latter argument were true (there were no true style differences), there would not have been any observed style differences across the two Leadership Style conditions within the subordinate-obtained data.

Results

Manipulation Checks

Three manipulation check measures were obtained after completion of the task to investigate whether the leaders employed the leadership style behaviors which they were instructed to portray. The first of the three Leadership Style manipulation checks requested each leader to indicate the extent to which s/he exhibited each of eight behaviors during the performance of this task (see Appendix L). The eight behavioral statements included in this scale were taken directly from the Leader Instructions form in an attempt to determine the extent to which the leaders actually exhibited the behaviors which they were instructed to exhibit (see Appendix B). Two of the eight behavioral statements included in the leader manipulation check scale referred to "autocratic-type" behaviors (e.g., gave orders), while the other six statements addressed "democratic-type" behaviors (e.g., sought the input of others, kept everyone involved in the decision making).

All eight items included in this scale were totaled to yield an overall measure of the extent to which the leader exhibited behaviors which were predominantly autocratic or democratic in nature. Prior to

calculating the total scale score, the two items referring to autocratic-type behaviors were reverse scored, so that a higher score on the composite scale would reflect a greater degree of democratic leadership behavior. Conversely, a lower score would indicate more autocratic style behavior. As expected, a comparison of Imposed Leadership Style (ILS) group means revealed a significant difference between the two style conditions (Democratic \underline{M} =37.27 / Autocratic \underline{M} =20.96), $\underline{F}(1,130) = 133.79$, $\underline{p} < .001$.

As noted earlier, there exists a potential problem with the analysis of this scale, because a very low total score may not necessarily indicate a high degree of autocratic behavior (the range of possible total scores on this scale are from 0 to 40). It is possible that a very low score on this scale could actually be an indication of a relative absence of leadership behavior. If a leader had indeed exhibited very little leadership behavior (i.e., s/he did nothing at all to lead the group) s/he would likely have received very low scores from their subordinates on each of the eight behavioral items.

In recognition of this potential problem, those cases which yielded a score of less than twelve (prior to reverse scoring the two autocratic items) were interpreted as possibly indicating a relative absence

of leadership behavior and, thus, excluded from a re-analysis of the data. After excluding seven cases for not meeting the criterion outlined above (all seven cases were in the Autocratic condition), a comparison of group means again revealed a statistically significant difference between the Democratic ($\bar{M}=32.27$) and Autocratic groups ($\bar{M}=22.21$); $F(1,123) = 124.33$, $p < .001$. These results indicate that leaders felt that they had successfully exhibited the leadership style behaviors which they were instructed to portray.

The second Leadership Style manipulation check was obtained by administering the same manipulation check scale outlined above to each of the subordinates. Each subordinate was asked to indicate the extent to which s/he had observed their group leader exhibiting each of these eight behaviors (see Appendix L2).

As with the results obtained from the leaders, the subordinates' data also revealed a statistically significant difference in observed behavior between the Autocratic and Democratic conditions $F(1,261) = 19.59$, $p < .001$. Only one case in the subordinate data had a total scale value of less than twelve (this case was in the Autocratic condition). As a result, a re-analysis of the data, excluding this one item, was not conducted.

The third ILS manipulation check was a single item measure which required the leader to indicate the extent to which s/he adhered to the assigned style. The item anchors ranged from (1) "Not at All" to (5) "Always". The overall scale mean was 3.58, which is nearest to the category labeled "Very Much". As shown in Table 5, ninety-five percent of the leaders reported a value of three ("Somewhat") or greater on this scale -- indicating that they did, at least "somewhat", accurately exhibit the assigned style.

As might be expected, leaders in the Autocratic condition appear to have had slightly more difficulty accurately expressing their assigned style. Nine percent of the Autocratic leaders reported a value of three or less on this scale; as opposed to only two percent of the Democratic leaders. Together, the three ILS manipulation checks provide considerable evidence to suggest that the vast majority of leaders were able to successfully exhibit the assigned leadership style during the performance of this task.

Performance Checks

As expected, there was no significant difference in true performance, or predicted performance (the group's

prediction of their performance level prior to receiving the bogus feedback), across the two Imposed Leadership Style conditions. The Democratic style groups had an average true performance score of 3.50, of a possible six, correct. The Autocratic style groups averaged 3.04 out of six correct; $F(1,130) = 1.85$ (NS). When asked to predict their true performance, at the conclusion of the task (prior to receiving the bogus performance feedback), the Democratic groups predicted that they had achieved an average of 4.16 correct; the Autocratic groups predicted that they had correctly classified an average of 4.27 teams correctly; $F(1,130) = .24$ (NS).

The results outlined above indicate that the task did not provide a performance advantage for either style of leadership. These findings are important because, given these results, it is reasonable to argue that any observed differences (on any dependent variable measure) across leadership style conditions should not be attributed to true (or perceived) performance differences.

It is interesting to note that, although there was almost no relationship between the reported (bogus)

group feedback and either true performance $r=.00$ (NS), or perceived performance (perceived performance level, prior to feedback) $r=.07$ (NS), a significant relationship did exist between true group performance and perceived group performance $r=.40$ ($p<.001$). This may be an indication that random assignment to performance conditions successfully controlled for true or perceived performance differences. These results also point out that, prior to receiving bogus performance feedback, the group leaders were, to a certain extent, capable of accurately discriminating among group performance levels -- as evidenced by the significant correlation ($r= .40$, $p<.001$) between true and perceived group performance levels.

Summary note

The means and standard deviations for each of the six cells included in this 2x3 experimental design are presented in Tables 6a-b. Tables 6a-b provide these descriptive statistics for each of the Imposed Leadership Style (Democratic, Autocratic) by Reported Group Performance (Low, Average, High) cells.

Dependent Variables

Preferred Future Style

The analysis of variance (ANOVA) results presented in Table 7 show that Autocratic and Democratic style leaders did not differ significantly in their responses to the following question: "If you were asked to lead these same subordinates on this task again, what type of leadership style would you employ?". A score of less than four, on this seven-point scale, indicates the desire to employ a more directive style in the future, while a score of greater than four indicates the preferred use of a more democratic style (see Appendix I).

Democratic and Autocratic style leaders alike indicated a desire to employ a style which was neither very directive, nor democratic, when leading these subordinates in the future. The mean scale value was 4.33 (N=64) for the Democratic style leaders, and 3.98 (N=66) for the Autocratic style leaders; $F(1,129)=1.46$, (n.s.). In addition, no significant differences were discovered across the three Performance Feedback conditions $F(2,129) = 2.21$, (n.s.).

There did exist, however, a significant Leadership Style by Performance Feedback interaction on this question; $F(2,128)=3.19$, $p<.05$. As indicated in Figure 8, Democratic leaders in the High performance condition preferred to lead their subordinates much more democratically if performing this task in the future, than did Autocratic leaders in the High performance condition. Autocratic leaders of groups reported to be "high performing" preferred to maintain a balance between Autocratic and Democratic styles if asked to lead the same subordinates, performing this task, again in the future.

The question of leading the same subordinates again is designed to be a reflection of the leaders' perceptions of the subordinates as well as the task. On the other hand, the leaders' responses to the question of leading another group of subordinates should be an indication of their beliefs regarding the most appropriate style to use with this type of task (because they know nothing about the quality of these new subordinates).

The second Preferred Future Leadership Style item asked each leader to indicate the type of style s/he would employ if s/he were to lead a different group of

subordinates in performing this task (see Appendix I). As the ANOVA results in Table 8 indicate, a significant main effect was found for ILS; $F(1,129) = 4.72, p < .05$. In addition, there was an ILS by Performance Feedback interaction effect; $F(2,129) = 3.76, p < .05$. However, the main effect for Performance feedback did not differ significantly across the three levels; $F(2,129) = .48, (n.s.)$. Apparently, leaders in the "high performance" conditions chose to employ that style which was (reportedly) successful again in the future.

The significant ILS effect indicates that, if asked to lead a different group of subordinates in the future, Democratic leaders ($M=4.39$) would prefer to employ a more democratic style of leadership in the future than would Autocratic leaders ($M=3.76$). As shown in Figure 9, the ILS by Performance Feedback data points out the power of positive feedback, as leaders in the High performance condition became more polarized toward the style which they had previously employed. After being informed that their groups had performed well, Democratic leaders expressed a desire to again lead democratically, while Autocratic leaders expressed a desire for a more controlling style of leadership.

Causal Importance

ANOVA results revealed a significant difference in overall leader/subordinate causal importance ratings across the two ILS conditions; $F(1,129) = 15.74$ $p < .01$. Overall, the Democratic leaders viewed the subordinates as being somewhat more causally important ($M=4.52$), while the Autocratic leaders saw themselves as being slightly more causally important ($M=3.85$). A score below four, on this seven-point scale, indicates that the leader was believed to be more causally important, and a score above four reflects the belief that the subordinates were a greater causal factor in determining the group's level of performance on this task.

The above finding was expected, as it indicates that the Autocratic leaders had a greater sense of self-importance in determining their groups' performance level. Assuming that the Autocratic leaders portrayed their roles accurately (i.e., they controlled the behavior of the other group members), one would expect them to believe that they did actually play a greater role in determining the performance level of the group.

A main effect for Performance Feedback was also evidenced; $F(2,129) = 2.95$, $p < .10$. Mean scores for the three Performance Feedback conditions show that increasingly greater causal importance was attributed to the subordinates, as the RGP levels progressed from Low ($M=3.91$), to Average ($M=4.10$), to High ($M=4.49$). These results suggest a "modesty-type" effect, on the part of the leaders. That is, when the group reportedly performed well, they were willing to suggest that it was due to the efforts of the subordinates. At the same time, leaders of the "low performing groups" were willing to accept more of the blame for the poor performance. It is important to note, however, that, across all conditions, the average rating was close to the mid-point of the scale (indicating that the leader and subordinates were equally important).

Contrary to hypothesis Number 1, there was no significant ILS by Performance Feedback interaction effect on the question of perceived leader/subordinate causal importance (see Table 9); $F(2,127) = 2.87$, (n.s.). While it was expected that Autocratic leaders would take more credit for their groups' performance in the "high performance" condition, and attribute low

performance more to their subordinates, this was not the case. As hypothesized, Democratic leaders did attribute increasingly more causality to their subordinates as RGP levels increased significantly from the Low ($\underline{M}=4.18$) and Average ($\underline{M}=4.24$) conditions to the High ($\underline{M}=5.14$) condition. However, Autocratic leader attributions did not vary significantly across the RGP conditions (means = 3.67, 3.95, 3.86; from Low to High, respectively).

A 2X3 Multivariate Analysis of Variance (MANOVA) was computed to examine the effects of the ILS and Performance Feedback conditions across three causal importance dependent measures designed to investigate leader beliefs regarding the causal factors which impacted upon his/her group's performance. A MANOVA was performed because all three of these factors were included within the same instrument, and also because of the high intercorrelations among these variables (see Tables 10a-c). The three dependent measures were the averaged scale scores of the Leader, Subordinate, and "External Factors" Causal Importance factors.

As part of the MANOVA, a Pillai's trace F approximation test was used to investigate

between-category differences. Listwise deletion of cases resulted in a sample size of 129 for each dependent measure (only two cases were missing). The MANOVA yielded an overall F-value of .582 (3,383) for the Leadership Style by Performance Feedback Interaction; this result is not significant at the $p < .10$ level. However, a significant main effect was present for Performance Feedback $F(3,125) = .4.18$, $p = .001$, as well as for ILS $F(3,125) = 2.24$, $p < .10$.

Follow-up univariate analyses revealed a significant Performance Feedback effect for Leader [$F(2,129) = 6.17$; $p < .01$], and Subordinate Causal Importance [$F(2,129) = 9.10$; $p < .001$]. In each case, the perceived causal importance of the group in question (i.e., the leader or subordinates) was greater as the group performance levels increased. The Leader Causal Importance ratings increased from 3.8 (Low) to 4.0 (Average) to 4.8 (High). The High group mean was significantly different ($p < .05$, Scheffe) from each of the other two groups. For the Subordinate Causal Importance Scale these values were 4.0 (Low), 4.65 (Average), and 5.29 (High). Only the Low and High group means differed significantly from one another at the $p < .05$ level (Scheffe).

However, it was interesting to find that only the "External Factors" scale exhibited a significant difference in group means across the two ILS conditions $F(1,129) = 3.76; p=.05$. The results related to the "External Factors" sub-scale may be attenuated due to the relatively low reliability of this scale. It appears that leaders assigned to the Democratic style condition ($M=3.69, N=63$) believed that External Factors (e.g., luck) played a more important role in determining the level of group performance than did Autocratic condition leaders ($M=3.30, N=66$).

Leader self-appraisal of performance.

ANOVA results indicate that Democratic and Autocratic leaders did not vary significantly in the evaluation of their own performance. Two self-appraisal measures were obtained from the leaders to evaluate their perceived performance levels. The first self-appraisal measure was an average of the six items designed to investigate various aspects of the leaders performance -- such as his/her quality of work, quantity of work, and ability to lead a group. The second measure was one item which requested the leader

to indicate his/her "OVERALL PERFORMANCE" during this task (see Appendix I). The correlation between the average of the six-item scale and the one item overall rating was .81, $p < .001$ ($N=130$).

As shown in Tables 11 and 12, ANOVA results based on the six-item scale did not indicate a significant difference between the two ILS conditions $F(1,128)=.90$ (NS). However, the results obtained from the one-item overall self-rating revealed a significant main effect for leadership style; $F(1,128)=2.83$, $p < .10$. As hypothesized, the mean overall self-rating obtained from the Autocratic leaders (3.60, $N=65$) was higher than the average overall self-rating provided by the Democratic leaders (3.38, $N=64$).

Contrary to earlier hypotheses, Tables 11 and 12 also indicate that there was no significant Leadership Style by Performance Feedback interaction effect for either the six-item self-appraisal composite scale [$F(2,126)=.95$] or the one-item overall performance self-rating [$F(2,126)=.10$].

A significant main effect for RGP was found for the six-item self-appraisal scale [$F(2,128) = 12.88$, $p < .001$], as well as for the one-item overall self-rating [$F(2,128) = 5.29$, $p < .01$]. As expected,

both measures of leader self-appraisal increased significantly as RGP levels increased across the three conditions. The six-item self-appraisal mean scores increased from 3.18 (Low), to 3.47 (Average), to 3.85 (High). The High RGP group differed significantly ($p < .05$, Scheffe) from each of the other two groups; no other groups differed significantly at the $p < .05$ level. Similarly, on the one-item overall rating, the High group mean (3.79) was significantly different ($p < .05$, Scheffe) from the Low (3.28), as well as Average (3.40), conditions.

Leader Evaluation of Subordinate Performance.

At the conclusion of the task (after receiving the bogus group performance feedback), each leader was asked to provide performance ratings for each of his/her two subordinates. Two separate measures of subordinate performance were obtained at that time. The first performance measure utilized was a six-item performance evaluation scale score (see Appendix I). The six items included in this scale attempted to address observable performance factors (e.g., motivation, quantity of work, interpersonal skills). The second performance measure was a single item, which

asked to leader to indicate the subordinate's overall performance level on the task. The obtained correlation between the average of the six subordinate appraisal scale items and the one-item overall rating was .85, $p < .001$ ($N=258$).

An ANOVA performed on the six-item subordinate performance scale (see Table 13) revealed a significant difference (in the average scale score) across the two ILS conditions; $F(1,257) = 2.83$, $p < .10$. However, contrary to what had been hypothesized, the Autocratic leaders' ratings of their subordinates' performance were higher ($M=3.64$) than the Democratic leaders' ratings of their subordinates ($M=3.49$).

The two-way interaction between Leadership Style and Performance feedback failed to exceed the $p < .10$ significance level; $F(2,257) = .28$. A significant main effect ($p < .001$) was found for Reported Performance Feedback; $F(2,257) = 8.82$. The data revealed a significant difference ($p < .05$, Scheffe) between the High (3.94) and the Average (3.42) as well as the Low (3.36) RGP groups. The Average group mean (3.42) was not significantly different from the Low group mean (3.36).

Analysis of Variance results based on the one-item overall subordinate performance rating (see Table 14) revealed a non-significant (n.s.) difference in the interaction between ILS and RGP; $F(2,257) = .09$.

The overall subordinate performance ratings were not significantly different across ILS conditions; $F(1,257) = 1.21$. As with the six-item performance evaluation scale, there was a significant ($p < .01$) Reported Group Performance feedback effect; $F(2,257) = 9.68$. The RGP data revealed that the mean group ratings were 3.50 (Low), 3.49 (Average), and 3.96 (High). The High RGP group mean was significantly different from the Average as well as the Low group means at $p < .05$ (Scheffe). The Low and Average group means were not significantly different.

Leader Perceptions of Subordinate Attributes.

As shown in Table 15, the leaders' perceptions of subordinate attributes showed a significant main effect for Performance Feedback; $F(2,257) = 9.19$, $p < .001$. Follow-up Scheffe analyses revealed that, as expected, leaders in the "High" RGP condition ($M = 4.15$) evaluated their subordinates' attributes more favorably

than either the "Average" ($\underline{M} = 3.87$) or "Low" ($\underline{M} = 3.84$) RGP condition leaders evaluated the attributes of their subordinates. No significant effect was found for either the ILS main effect, or the Leadership Style by Performance Feedback interaction effect.

Preferred Social Distance.

Preferred Social Distance was the third, and final, area in which leaders were asked to provide ratings for each of their two subordinates. The results here suggest that none of the experimental manipulations affected the degree of social distance preferred by the leaders (see Table 16). Interestingly, there was virtually no difference in preferred social distance values across the Democratic ($\underline{M}=2.43$) or Autocratic ($\underline{M}=2.43$) ILS conditions. The main effect for Performance Feedback, as well as the Imposed Leadership by Performance Feedback interaction effect, also failed to approach significance.

Task Specific Self-esteem.

Three separate TSSE sub-scales were utilized in the following analyses: Ability to Solve Word Problems Mathematical Aptitude, and Group Leadership. As

discussed earlier in this paper (see Table 3), all three of these sub-scales appear to evaluate a distinct construct.

A MANOVA, computed across the three TSSE sub-scale difference scores (Pre-TSSE minus Post-TSSE, for each sub-scale), showed no significant ILS, or ILS by Performance Effect. The main effect for Performance Feedback was significant; $F(3,317)=1.80$, $p=.10$ (using Pillais' criteria).

Contrary to the hypotheses of this study, it appears that leader TSSE was unaffected by the ILS manipulation (see Tables 17a-c). However, these results also indicate that, as hypothesized, the (bogus) Reported Performance Feedback manipulation influenced TSSE levels in the areas of Solving Word Problems [$F(2,107) = 3.68$, $p<.05$], and Group Leadership [$F(2,107) = 2.60$, $p<.10$]. The group means presented in Table 18 show the impact of RGP on the leaders' TSSE levels in these two areas.

Additional Analyses

In the Kipnis et al. (1981) study, the researchers also failed to find a strong relationship between Imposed Leadership Style (0=Democratic/1=Autocratic) and either Assessments of Employee Motivation

($r = -.16$) or Favorable Employee Evaluations ($r = -.14$). However, these researchers also considered the relationship between Reported Leadership Style (as reported by leaders and subordinates) and various dependent measures. Their scale asked the participants to indicate the extent to which the leader "Demanded that people do as told", "held mutual discussions", and so on. These results revealed a significant relationship between the Reported Leadership Style and Assessments of Employee Motivation ($-.36, p < .01$) as well as Favorable Employee Evaluations ($-.31, p < .01$; higher values reflect greater democratic behavior).

In light of the Kipnis et al. (1981) findings, additional analyses were conducted to investigate the relationship between the Reported Leadership Style behaviors of the leaders in the present study, with the various dependent measures of interest (see Table 19). The Reported Leadership Style measure employed in these analyses were taken from the Leadership Style Manipulation Check measure obtained from the leaders (see Appendix L). This scale consists of eight behavioral statements such as "gave orders" and "sought

the input of others", to which each of the leaders was asked to indicate the degree of his/her behavior during the task. These eight items were scored such that higher scale scores indicate a greater amount of democratic behavior.

Again, these results (presented in Table 19) provide little, if any, support for the hypothesized metamorphic effects. Almost all of the results presented here closely parallel those obtained on the ILS manipulation. Despite the lack of support for the proposed effects indicated by these results, they do provide additional evidence that the leaders acted in accordance with their assigned styles of leadership.

Additional analyses were conducted to investigate two conditions in which the Metamorphic Effects of Autocratic Leadership could be evidenced. In the first set of analyses a 2x3 between-subjects design, with Imposed Leadership Style (Democratic, Autocratic) and True Performance (Low, Average, High) as the independent variables, was employed to investigate whether the hypothesized metamorphic effects would be evidenced through an interaction between these two variables. It is possible that the interaction between ILS and True performance could have, potentially,

served to magnify the hypothesized metamorphic effects if the leaders relied heavily upon True as opposed to Reported group performance differences. The ILS by True performance interaction effect was found to be significant only on the six-item Leader Self-appraisal scale [$F(2,127) = 3.02, p < .10$]. However, the cell means were not consistent with the metamorphic effects hypotheses.

According to the Metamorphic Effects of Power hypotheses, it would have been expected that leader self-appraisals would be significantly higher in the Autocratic ILS/"High" RGP condition. This would indicate that the leaders' perceived self-worth (in terms of performance) would be greatest in the condition in which s/he exerted control while leading to successful task performance. Also, the Democratic/"Low" RGP condition would have been expected to yield the lowest leader self-appraisal ratings. As a result of ego-defensive, and metamorphic, effects the lowest leader self-appraisal ratings were not expected to be found in the Autocratic / "Low" RGP condition. However, the obtained democratic group means were 3.57 (Low, N=10), 3.22 (Average, N=22), and 3.55 (High, N=32), while the Autocratic group means were 3.56 (Low, N=14),

3.75 (Average, N=20), and 3.41 (High, N=30). Only the two "Average" condition cells (3.22, Democratic./ 3.75 Autocratic.) differed significantly ($p < .05$, Scheffe).

The second set of additional analyses included ILS (Democratic, Autocratic) and Overall Causal Importance (coded 1=Leader more causally important, 2=Leader / Subord. equally important, 3=Subord. more important) as independent variables in a 2x3 between-subjects design. The results of these analyses showed no significant ILS by OCI interaction effects for any of the dependent measures. These analyses were conducted to determine if perceived causal importance had differing effects among each of the two ILS conditions -- possibly due to ego protective (e.g., attributional egotism) effects and/or the hypothesized metamorphic effects. The obtained results indicate that Democratic and Autocratic style leaders did not differ significantly on any of the dependent measures as a function of their OCI perceptions.

Gender Effects

Although the present study was not intended to investigate gender effects, only same-sex groups were employed to avoid any potentially confounding gender effects. This precaution was taken because the available research pertaining to gender effects in

leadership and influence has resulted in many conflicting and inconclusive findings. In addition, the vast majority of research conducted thus far regarding the Metamorphic Effects of Power has included only male participants. As a result, it is important that the issue of gender effects be addressed in the present study.

No significant main effects for gender were found on the one-item Leadership Style Manipulation Check variable [$F(1,127)=1.40$, n.s.], or on the measure of Actual Group Performance [$F(1,119)=1.96$, n.s.]. This information suggests that male and female leaders did not differ significantly in their ability to effectively portray the style of leadership which they assigned. It also provides evidence that male and female groups did not differ significantly in their performance on this task.

There was, however, a significant gender effect in regard to the perceived level of group performance, prior to receiving the (bogus) RGP feedback. It appears that female groups had less confidence in their performance than did the male groups. The mean number of teams that female groups believed they had correctly identified (prior to receiving feedback) was 4.08 ($N=71$), while the male group mean was 4.57 ($N=49$); $F(1,119) = 3.33$, $p < .10$.

This finding may have resulted from a possible lack of comfort with the subject of the task (baseball team statistics) on the part of the female participants. It may also be possible that the female group members' reduced level of confidence may have been more pervasive than merely baseball tasks. Evidence to support this contention could be found in the significantly different gender differences on all three Pre-TSSE sub-scales. Significant gender effects were found on the Word Problem [$F(1,117)=3.00, p<.10$], Group Leadership [$F(1,117)=3.00, p<.10$], and Mathematical Ability [$F(1,117)=18.17, p<.001$] TSSE Pre-task sub-scales. On all three sub-scales, the female leaders' TSSE group means were significantly lower than those of their male counterparts, prior to taking part in this exercise.

Despite these findings, it is important to note that no significant differences in true performance exist across the two groups. The mean number of teams correctly identified was 3.20 (N=71) for the female groups, and 3.71 (N=49) for the male groups (n.s.). Also, there was no significant difference in the Leadership Style manipulation check data obtained from the subordinates. Together, these results suggest that, although the female participants did not appear to possess as much confidence in their abilities and

performance, they did perform as well as their male counterparts.

In addition to the analyses reported above, other follow-up analyses (not reported in the present study) revealed no significant main effects for gender on the vast majority of the dependent measures employed in this study. These findings suggest that gender does not play a major role in the results of these experimental procedures. Although the present study found little evidence of a gender effect, there still exists no information regarding potential gender effects in studies of this type using mixed-sex groups.

Discussion

The present paper attempted to investigate three basic questions. First, would changes occur in leader perceptions of themselves, and of their subordinates, simply as a result of exerting control, or influence, over their subordinates through an autocratic style of leadership? This hypothesized effect has been referred to as the Metamorphic Effects of Autocratic Style. The second question is whether these effects would vary across RGP levels. That is, would the leader of a reportedly high performing group experience the same types of metamorphic effects that the leader of an

Average, or Low reported performance group might experience (should such effects exist)? Third, would leaders rely heavily upon RGP feedback (and their implicit theories of behavior), as opposed to observed behaviors, when evaluating their subordinates?

The following sections attempt to provide answers to the three questions outlined above, based on the results obtained in the present study. However, prior to discussing the results of this study, it is important to address the effectiveness of the leadership style manipulation.

Manipulation Checks

As noted earlier, it was necessary that a number of conditions exist in order for the results of this experiment to be clearly interpretable. First, it was important to find that the leaders had effectively portrayed the Imposed Leadership Style which they were assigned. Without a noticeable difference in exhibited leadership styles between the two conditions, interpretation of any observed group differences would have been difficult at best.

The results of the present study strongly suggest that the leaders were successful in portraying the style (i.e., the behaviors) which they were instructed to employ. The obtained data indicate that, not only

did the leaders believe that they had successfully carried out their assigned roles, but the subordinates also perceived these differences in leadership styles.

The above finding is important because, given the nature of the task (a 20 minute problem solving task), it could have been difficult for the leaders to effectively express an assigned style. It may have been especially difficult to accomplish this in instances where the leader's imposed leadership style was inconsistent with his/her preferred style. Also, given that more than one-half of the leaders (56%) had two or less years of full-time work experience, it was possible that many individuals could have experienced difficulty effectively expressing any consistent style of leadership.

Second, it was also important to find no significant difference in true performance between the two ILS conditions. In the presence of a true performance difference, it would have been difficult to determine the extent to which the ILS manipulation, as opposed to true differences in performance, contributed to any significant findings (see Figures 1 and 2).

Fortunately, it was found that there was no significant difference in true performance between the two ILS conditions. These findings allow for greater confidence that any significant differences between the

two ILS conditions are due to the leadership style manipulation. In addition, the .00 correlation between true performance and reported (bogus) group performance levels greatly increases the probability that any observed differences between the three RGP levels could be attributable only to the experimental manipulation (i.e., not to true performance).

METAMORPHIC EFFECTS OF AUTOCRATIC LEADERSHIP

The results of the present experiment provide little support for the existence of the hypothesized metamorphic effects of autocratic leadership. Although there is a great deal of evidence to suggest that the leaders did portray the leadership style behaviors which they were instructed to exhibit, there is little evidence to suggest that the autocratic leaders experienced any of the hypothesized metamorphic effects.

Preferred future style. Contrary to what had been hypothesized, the autocratic leaders did not become overly enamoured with power and control. There was no significant difference in the preferred style of behavior between the two groups of leaders (were they to "lead these same subordinates" again). However, there did exist a significant difference in future

style preferences in regard to leading "another group of subordinates" in the performance of this task.

Consistent with the metamorphic effects of power research, it was believed that, regardless of the RGP Level, autocratic leaders would prefer to employ a predominantly autocratic style of leadership in the future. It was hypothesized that, had the group achieved a Low or Average level of performance, the autocratic leaders would have exhibited more controlling (or autocratic) behavior in the future, in an attempt to push the group toward higher levels of performance (also see Yukl, 1981). In addition, it was expected that, had the group performed well, the behavior of the autocratic leaders would have been rewarded and, therefore, become the preferred style of use in the future.

The results obtained in this study reveal that both groups of leaders preferred to employ a style which was neither too democratic nor directive, if they were to lead their subordinates again in the performance of this task (see Table 7). One possible explanation for this finding is that the autocratic style leaders may not have been comfortable with their assigned style and, therefore, preferred to move closer toward a more hybrid (autocratic/democratic) style in the future. It is also possible that the leaders were inexperienced in

the role of leader and, as a result, preferred to take a "middle ground" approach which was neither very democratic nor directive. The data show that, on the question of leading the same subordinates, the mean rating indicated by both groups of leaders hovered around the mid-point of the scale; (4.33) democratic, (3.98) autocratic.

It was interesting, however, to find that, given the opportunity to lead other subordinates in the performance of this task, autocratic and democratic leaders differed significantly in their preferred styles of leadership (see Table 8). The democratic group mean rating was almost identical to that which was provided on the previous question (4.39: slightly democratic). At the same time, the autocratic leaders moved from a mean response of 3.98 (neither directive nor democratic) regarding leading the same pair of subordinates, to 3.76 for leading a different group of subordinates.

This slight movement toward a more directive style, in regard to leading other subordinates, resulted in a significant difference (as hypothesized) between the two ILS conditions. Despite the statistically significant difference between group means, the magnitude of the difference was not very meaningful. The mean rating of 3.76 provided by the autocratic

leaders indicates that they would still prefer to employ a style which is neither very directive nor democratic when leading other subordinates in the performance of this task.

While there is no empirical evidence to support this contention, one explanation of these results could be that the autocratic leaders may have preferred a more directive style in the future (as hypothesized), but were reluctant to move in that direction when working with individuals who were familiar to them. Due to the nature of the task (i.e., the leader was not under any "pressure" to perform well), there may not have been sufficient incentive for the leader to focus on task achievement, especially if it were at the expense of maintaining a cordial working relationship (i.e., by behaving autocratically). This may explain why the autocratic leaders were willing to be slightly more directive toward "another group of subordinates", who had not been identified.

Also, the question of leading the same subordinates should be a reflection of the leaders' perceptions of the subordinates and the task. However, the leaders' responses to the question of leading another group of subordinates should be an indication of their beliefs regarding the most appropriate style to use with this type of task (because they know nothing about the

quality of these new subordinates). As a result, these results do not appear to provide any support for the hypothesized metamorphic effects hypotheses.

Earlier it was noted that one potential problem with the present experiment is that the "laboratory setting" may not be conducive to creating a sense of task importance. It was for that reason that the participants were offered a potential reward for high performance (through the lottery drawing). Perhaps if the potential rewards had been greater, and more closely tied to the performance of each group, the leaders may have been more willing to consider utilizing a more directive style in the future, in an attempt to enhance group performance.

Causal importance. The leaders' perceptions of causal importance was one of the few areas in which significant differences were found between the two ILS conditions (see Table 9). It was found that, overall, the autocratic leaders believed the leader role to be slightly more causally important than did the democratic leaders . However, this finding does not directly address any of the hypotheses associated with the metamorphic effects of autocratic leadership.

Although this finding indicates a significant difference between leadership style conditions, it merely provides further evidence that the ILS

manipulation was successful. One would expect autocratic leaders to believe that they were more causally important than do democratic leaders due to the nature of the leadership style employed. The autocratic leadership role does, in fact, involve more direct contribution to the task. Accordingly, the observed difference between groups may be further evidence that the autocratic leaders did indeed control the behavior of their groups, while the democratic leaders allowed their subordinates greater opportunity to influence performance levels.

A MANOVA performed across the three Causal Importance subscales (Leader, Subordinate, and "External Factors") revealed a significant overall ILS main effect. Further investigation of each of the sub-scales showed that only the "External Factors" sub-scale had a significant difference in means between the two ILS conditions.

It appears that the democratic leaders believed that various external factors (such as luck, and the difficulty of the task) influenced their groups' performance to a much greater extent than did the autocratic leaders. This may be an indication that the democratic leaders utilized their own knowledge, skills, abilities, and ideas, as well as those of their subordinates, but still may not have performed as they

had expected (due to the random bogus feedback). In contrast, autocratic leaders relied almost exclusively on their own knowledge and ideas. This may explain why the democratic leaders perceived these external factors to be more causally important; they had no other plausible explanation for the reported level of performance.

Also, in light of the results obtained earlier, it was interesting to find no significant differences for either the leader or subordinate causal importance sub-scales. Although the autocratic leaders believed the leader role to be more causally important, and the subordinate role less causally important, than did the democratic leaders (as expected), these differences were not statistically significant.

Self/subordinate performance evaluations. Based on a combination of egocentricity, or self-serving, biases (see e.g., Greenwald, 1980; Huber et al., 1986; Johnston, 1967) and metamorphic effects (see e.g., Kipnis, 1972, Kipnis et al., 1976, 1981), it had been expected that autocratic leaders would report higher self-appraisals, and lower subordinate performance evaluations, than would democratic leaders. However, the difference between autocratic vs. democratic leader self-appraisals was not found to be significant on the six-item performance evaluation scale. On the other

hand, consistent with these hypotheses, a significant ILS effect was evidenced on the one-item "overall" self-appraisal rating obtained from the leaders. As predicted, the autocratic leaders' overall performance ratings were higher than those obtained from the democratic leaders.

Although the six-item self-appraisal scale and the one-item overall self-appraisal are closely related ($r=.81$, $p<.001$), the one-item Overall Rating was based on a subjective (as opposed to arithmetic) combination of the six behaviorally-based scale items (each item may not be weighted equally). As a result, there may have been more room for individual biases (or distortion) in the overall ratings. It may be for this reason that significance was obtained only on the one-item rating.

In addition, contrary to what had been hypothesized, the autocratic leaders evaluated their subordinates' performance significantly higher on the six-item subordinate performance evaluation scale. The magnitude of the observed difference in performance evaluations on the six-item scale, while significant, was rather small ($F=2.83$, $p=.09$; see Table 13). Also, the difference between the two ILS means (0.15, on a five-point scale) is of questionable practical significance.

The results obtained on the one-item leader Overall Self-rating (see Table 12), by itself, provides some support for the existence of the hypothesized metamorphic effects of autocratic leadership (i.e., an inflated sense of self-importance). However, the one-item Overall Rating of subordinate performance did not yield a significant difference between ILS conditions (see Table 14). A finding consistent with the hypotheses of this study would have shown that autocratic leaders rated their subordinates' performance significantly lower than the democratic leaders' ratings of their subordinates. Overall, the self- and subordinate performance evaluation results fail to provide any meaningful support for the metamorphic effects of autocratic leadership hypotheses.

Subordinate attributes / Preferred social distance.
The main effect for ILS did not approach significance for either the Subordinate Attributes (see Table 15) or the Preferred Social Distance (see Table 16) rating scales. Based on the research of Kipnis and his colleagues (see e.g., Kipnis, 1972, 1984a, 1987), and others (e.g., Kruglanski, 1970; Strickland, 1958), it was expected that the autocratic style leaders would have devalued the overall worth of their subordinates.

This proposed devaluing of subordinates should have been evidenced through ratings of subordinate attributes (e.g., capable, confident, lazy), as well as the leaders' desired social distance from their subordinates. It was expected that, as a result of those beliefs, the autocratic leaders would have devalued the overall worth of their subordinates, and preferred to maintain a greater social distance from those individuals.

Once again, the obtained results fail to provide support for the metamorphic effects hypotheses. The results show that both autocratic and democratic leaders evaluated subordinate attributes favorably. In addition, neither leadership style condition appeared to prefer a high level of social distance from their subordinates. Non-significant findings in each of these areas suggest that, in the present study, the act of briefly behaving autocratically was not enough to influence the leaders' perceptions of their subordinates. It appears that the leaders' style of leadership did not influence their cognitive categorization processes.

However, further investigation of the data revealed a moderately low, but statistically significant, correlation of .18 ($p < .05$) between self-reported leadership behavior and the Subordinate Attribute scale

total (see Table 19). This self-report measure of leadership was obtained through an eight-item scale administered to the leaders at the conclusion of the task. The leaders were asked to indicate the types of behaviors which they had exhibited during the task (higher scores reflect more democratic behaviors). This finding provides some support for the contention that autocratic leaders would view their subordinates less favorably than would democratic leaders. However, the magnitude of this correlation, along with the relationship of the self-report measure of leadership behavior with the other dependent measures (see Table 19), provide little evidence to support the metamorphic effects hypotheses.

Again, it is possible that the ILS manipulation did not possess enough impact to influence the leaders' beliefs about their subordinates' overall worth. That is, the task may not have been of sufficient importance to the leaders, and as a result, they may not have looked negatively upon those subordinates who did not perform well. The autocratic leaders may also have been able to attribute their behavior to the fact that they were instructed to behave as they did, as part of a laboratory experiment. This explanation would be consistent with most theories of attribution, which indicate that individuals will attempt to identify and

evaluate alternative explanations of a given event when attempting to make an attribution (see e.g., Kelley, 1973, Ross, 1977).

In addition, the leaders had no reason to believe that they were chosen to lead the group as a result of any special skills or abilities on their part (although they WERE NOT aware that the assignment of roles was done randomly). Therefore, consistent with attribution theory (see e.g., Heider, 1944; Kelley, 1976), if the autocratic leaders had other factors which could explain their own behavior, they might not attribute that behavior to the belief that "the subordinates are incapable of performing well on their own, and therefore, it was necessary that I control their behavior".

Also, Kipnis (1976) noted that "[i]n terms of attribution theory (Kelley, 1967) the question is whether the powerholder locates the cause of [subordinate] compliance within himself or within the target person" (p. 184). This suggests that if the leader believed that his/her subordinates were complying with his/her demands because successful performance didn't mean much to them, the leader might not experience an increased level of power or importance (as evidenced through a number of factors, including self-esteem).

Perhaps if the task was more important to all of the participants (e.g., if they each received \$50 for achieving a high level of performance) the desire to perform well might have become a more salient attribution for the leader in explaining his/her controlling behavior. The leader would also have had more reason to believe that his/her controlling style had a powerful impact on the behavior of the subordinates. The results of the present study strongly suggest that the mere act of behaving autocratically, may not be enough to elicit the hypothesized metamorphic effects.

Task-specific self-esteem. Contrary to to the hypotheses of this study, none of the TSSE variables were significantly affected by the ILS manipulation (see Tables 17a-c) . It was expected that autocratic leaders would experience a greater increase in TSSE as a result of having controlled the behavior of their subordinates. It was hypothesized that the act of controlling others would lead to an increase in the self-esteem level of the autocratic leaders (i.e., the controlling "powerholders"). However, the obtained results did not support any of the TSSE hypotheses.

It is possible that the three TSSE measures employed in this study do not adequately evaluate TSSE. The factor analysis results cited earlier (in the Method

section) appear to indicate that these measures do evaluate three distinct constructs. Whether these three constructs address the issue of TSSE may be debatable. However, the significant findings related to the bogus Reported Group Performance feedback manipulation (see Tables 17a-b) suggest that these variables are indeed providing measures of the intended constructs.

Another possible reason for non-significant findings could again be due to a lack of task significance. It may be difficult to expect any experimental manipulation to influence TSSE if task performance is not very meaningful to the individuals. Snyder et al. (1978) hypothesized that threat to one's self-esteem is dependent upon that outcome being potentially attributable to the individual in question as well as being relevant to that individual's self-esteem (i.e., important to him/her).

As indicated earlier, the "impact" and realism of the present study may not have been of sufficient magnitude to affect TSSE levels. If the present task had been viewed by the leaders as a "meaningless exercise", it would be difficult to expect any meaningful changes in their beliefs or (reported) future actions. Although attempts were made to enhance the impact of the present study through the incentive of a lottery drawing, it is difficult to determine the

extent to which this incentive affected the impact of the task.

Finally, another possible explanation for the lack of impact on TSSE is that the use of an autocratic style does not have an effect on leader self-esteem. This is suggested by an earlier study conducted by Kipnis (1972), support was found for some aspects of the metamorphic effects of power such as an increase in future attempts to control and an expressed desire for greater social distance, although no support was found for the hypothesized effects regarding self-esteem.

IMPOSED LEADERSHIP STYLE BY REPORTED GROUP PERFORMANCE FEEDBACK INTERACTION.

A number of significant ILS by RPG interaction effects were hypothesized in the present study. It was expected that the proposed metamorphic effects of autocratic leadership would be evidenced as a result of leaders in the Autocratic Style/Low RPG condition exhibiting ego-defensive, and self-serving, biases. It was also expected that leaders in the Autocratic Style/High RPG condition would have realized a greater sense of self-worth, as a result of leading a High performing group.

However, the obtained results did not reveal significant interaction effects on any of the causal

importance, self-evaluation, subordinate evaluation, subordinate attribute, social distance, or TSSE variables, as had been hypothesized. The only variables to achieve significance were the two preferred future style variables.

The two significant Preferred Future Style interaction effects show that, as would be expected, "high performing" group leaders became more committed to the styles which they previously exhibited than did leaders in either the Low or Average performing groups. That is, autocratic leaders in the "high performing" groups preferred the use of a controlling style in the future, while democratic leaders in the "high performance" condition indicated the desire to employ a style which is clearly democratic in nature.

In regard to leading the same group of subordinates, the mean rating for democratic leaders was 3.86 between the combined Low and Average levels, while the "high performance" democratic leaders had a mean score of 5.29. These data reflect a significant preference for a democratic style of leadership. Conversely, "high performance" autocratic leaders showed movement toward a more controlling style of leadership, with a combined average rating of 4.02 between the Low/Average groups and a mean score of 3.91 among the High performance groups.

As in the previous section (ILS main effects), the ILS by RPG results also fail to provide support for the existence of the hypothesized metamorphic effects of autocratic leadership. Although previous research evidence did not exist to address these types of interaction effects, the philosophy underlying the metamorphic effects of power hypotheses suggests that the hypothesized results should have been magnified across the three RGP levels

(BOGUS) REPORTED GROUP PERFORMANCE.

Consistent with prior studies in the area of leadership (e.g., Downey et al., 1979; Mitchell et al., 1977; Staw, 1975), the results of the present study strongly suggest that leaders employed (naive) implicit theories to assist them in evaluating their subordinates' (as well as their own) behaviors and characteristics. The data strongly indicate that leaders relied heavily on their implicit theories of group performance to help identify and categorize group member characteristics. It appears that the leaders used the RGP information to assist them in evaluating individual performance, as well as group member attributes.

As had been found in studies of implicit leadership theories (e.g., Phillips & Lord, 1982), the present

results indicate that the leaders used "reverse-causality" in their (naive) implicit theory of group performance. For example, they seem to have believed that if positive behaviors and attributes can be associated with high performance, the members of high performing groups must have exhibited positive behaviors and attributes. These findings also suggest a reliance on cognitive categorization processes which serve to reconstruct the behaviors and attributes which were exhibited during the performance of the task.

Preferred future style. The results of the two Preferred Future Style questions indicated that there were no significant differences between the three RGP levels for either of these questions (see Tables 7 and 8). The non-significant finding related to "leading the same group of subordinates", is not consistent with the research findings reported by Yukl (1981) which suggest that leaders of low performing groups may tend to employ more controlling tactics when leading that group in the future. Perhaps leaders of "low" and "average" performing groups in the present study placed more emphasis on their own preferred style in the future, as opposed to employing a more controlling style in an attempt to push the group to perform better. Again, it is possible that the leaders may have been reluctant to indicate that they would choose to employ a more

controlling style when leading individuals who were familiar to them.

Causal Importance. The one-item Leader/Subordinate Causal Importance rating revealed an interesting effect. The leaders ratings exhibited what may be termed a "modesty effect" -- the subordinates were seen as being increasingly more causally important as the RGP levels moved from Low to Average to High.

The results of the Leader and Subordinate Causal Importance sub-scales each showed that the group in question (leader or subordinate) was believed to be more causally important in the High performance condition. It is not surprising to find that, after being informed that group performance was high, the leaders believed that they, and their subordinates, had a great deal to do with the reported outcome. It was also interesting to find no significant RGP effect for the "External factors" sub-scale. However, it may be possible that the results associated with the "External Factors" sub-scale may not have achieved significance as a result of attenuation, due to the relatively low internal consistency of the items in this scale ($\alpha = .48$).

Self/subordinate performance evaluations. The results in this section were consistent with prior research in this area (e.g., Downey et al., 1979;

Mitchell et al. 1977; Staw, 1975). Accordingly, all of the performance evaluation results were consistent with the hypotheses of this study (see Tables 11-14). As predicted, it was found that self- and subordinate evaluation ratings (on the six-item scale ratings, and overall ratings) were significantly greater for the members of "higher performing" groups. These results strongly suggest that the leaders relied on RGP information when attempting to recall the behaviors exhibited by the various group members during the performance of this task.

The performance evaluation evidence suggests that leaders used "reverse causality" in evaluating the group members' performance. That is, they appear to have relied on an implicit theory which suggests that if positive behaviors usually lead to high group performance, then high group performance must indicate that the members had exhibited positive behaviors. This type of thinking is suggested by the performance evaluation results which show a significant main effect for RGP (in the predicted direction). These findings are especially meaningful in light of the .00 correlation between true and reported group performance levels.

Subordinate attributes/preferred social distance. As was found with the performance evaluation ratings,

the results pertaining to subordinate attributes were consistent with what had been predicted. The results show that subordinates in the High RGP groups were viewed significantly more favorably in terms of their attributes (e.g., more reliable, self-motivated, capable, etc.) than were the subordinates in the Low or Average performing groups.

Again, it appears as if the leaders relied upon naive implicit theories in forming their impressions of subordinates' attributes. Not only did the leaders apparently utilize the RGP information in reconstructing the behaviors which were exhibited, but they may also have used these categorization processes to assist in forming their impressions of the subordinates. The Walter Lippman quote cited earlier, stating that "[w]e do not first see and then define, we define first and then see", may be truer than we would like to believe.

There were no significant differences in Preferred Social Distance between the three RGP levels (see Table 16). It is possible that the RGP manipulation was powerful enough to affect leader perceptions of subordinate behaviors and attributions, but it may not have been meaningful enough to affect Preferred Social Distance. It can be argued that it may require a substantially positive or negative set of beliefs about

a subordinate to affect the leaders' desired level of social distance from that individual.

Task-specific self-esteem. A significant main effect for RGP was found on the "Solving Word Problem", and "Group Leadership" TSSE sub-scales (as evaluated through Pre-Post difference scores). The results indicate that, as predicted, within each of these areas TSSE levels were affected most negatively for leaders in the Low RGP groups, and most positively for leaders in the High RGP groups (as indicated by the change in Pre-Post TSSE measures).

It was interesting to find that the "Mathematical Ability" TSSE sub-scale was not significantly affected by the RGP manipulation (see Table 17c). This may be a result of mathematical ability being easier to evaluate than the other TSSE sub-scales (Solving Word Problems, and Group Leadership). Perhaps it is easier for individuals to accurately assess their own mathematical ability than it is to evaluate their proficiency in solving word problems or leading a group (if they haven't had a great deal of experience in these areas). This may be especially true for those individuals who have had limited experience leading a group.

If the leaders were capable of more accurately assessing their mathematical ability, it may be possible that this sub-scale may have been less

amenable to manipulation. In an attempt to investigate this post-hoc explanation, an ANOVA was conducted on each of the three TSSE sub-scales, using actual performance (which were grouped in terms of Low, Average, High levels) as the independent variable. As with the RGP levels, Low performance included 0-1 teams correctly classified, Average 2-3 correctly classified, and the High condition included the correct identification of either 4 or all 6 of the teams. These analyses provided support for the above contention, because the Mathematical Ability sub-scale was the only TSSE sub-scale to reveal a significant main effect (at $p < .10$) between actual performance levels; $F(2,107) = 2.43$. As had been suggested, Mathematical Ability TSSE difference scores ranged from $-.65$ (Low) to $-.09$ (Average) to $.39$ (High). Therefore, it may be plausible to suggest that the Mathematical Ability TSSE sub-scale was the only sub-scale unaffected by the Reported Group manipulation because it is not difficult for the leaders to accurately evaluate their true levels of ability in this area.

Summary.

The overall results of the present study do not support the existence of the proposed metamorphic effects of autocratic leadership. A number of possible

explanations of these findings have been offered thus far. However, the most likely explanation is that the hypothesized metamorphic effects of autocratic leadership do not exist under the conditions created in the present study. The present findings are important because they may provide information regarding the robustness of the proposed metamorphic effects of autocratic leadership (should such effects exist).

The results of this study suggest that the leaders effectively exhibited the styles which they were assigned. These results also indicate that the participants apparently took the task seriously -- almost one-quarter of the groups (24.4%) correctly classified all six of the baseball teams. In addition, many of the obtained results regarding RGP show that the participants were susceptible to the effects of a potent manipulation. Despite the factors outlined above, the obtained results provide almost no support for the proposed metamorphic effects.

Although the findings of the present study provide little or no support for the existence of the Metamorphic Effects of Autocratic Style, prior research cited earlier in this paper suggests that such effects may exist under certain circumstances. In the Strickland (1958), Kruglanski (1970), and Kipnis (1972) studies, participants monitored the performance of

fictitious (or unseen) subordinates, with whom they had no direct contact. It may be in this type of situation that the hypothesized metamorphic effects may be most evident (no direct contact, impersonal).

It may be easier (less threatening) for a supervisor to be task-oriented and controlling when there is no need to be concerned about employee reactions to such tactics (i.e., no face to face interaction). It is possible that the metamorphic effects of autocratic leadership may be much more difficult (if not impossible) to elicit in situations which require the leader to autocratically control the behavior of real people, with whom they interact. This may be especially true when the task does not hold a very high level of importance to the leader. There is little incentive for the leader to behave autocratically with his/her subordinates (and then face the negative reactions) in a situation in which the task holds little importance to the leader. As a result, it is possible that when dealing with real people, the leader might not behave as autocratically as s/he might with unseen subordinates or "paper people".

It would also appear to be easier to manipulate leader perceptions of their subordinates in situations in which the leaders have no direct exposure to their subordinates. Without direct leader-subordinate

contact, the experimental manipulation(s) may become much more salient, because there would be fewer extraneous variables such as age, sex, personality factors, and other related factors to influence the cognitive categorization process. Again, the absence of personal contact may be more conducive to eliciting the hypothesized metamorphic effects, because the leader does not get to form judgements about the subordinate(s) through personal interaction. Therefore, the leader may have to rely heavily upon his/her own actions, as well as the experimental manipulations, in forming an impression of his/her subordinate(s) -- this is the only information s/he has to use when making attributions. While there is no evidence to directly support the above contentions, they are important factors to consider in future research of this type.

The Kipnis et al. (1981) study was the only prior experiment to investigate the metamorphic effects of power hypotheses within the context of leadership style differences (democratic/autocratic). These researchers found some support for a path model of leadership style and employee evaluations, which suggested the presence of a metamorphic-type effect (see Figure 6). Kipnis et al. (1981) concluded that, "the use of democratic forms of influence tactics, which provide employees with some freedom to decide for themselves, encourages the belief

among managers that employees are self-motivated. Given average or better levels of performance, this belief leads to favorable evaluations" (p. 327).

Kipnis et al. (1981) reached their conclusions on the basis of the fit of their data to the hypothesized Power-usage model (see Figures 2 and 6). Kipnis et al. (1981) found significant relationships between the use of controlling influence tactics (as evaluated by leaders and subordinates) and Assessment of Employee Motivation ($r = -.36$; $p < .01$) as well as Favorable Employee Evaluations ($r = -.31$, $p < .01$). These results indicate that higher levels of controlling behavior were significantly related with lower assessments of subordinate motivation, as well as lower evaluations of subordinate performance. However, the Kipnis et al. (1981) results also reveal non-significant correlations between Imposed Leadership Style (coded 0=democratic, 1=autocratic) and Assessment of Motivation ($-.16$), as well as ILS with Employee Evaluations ($-.14$).

These data suggest that the non-significant results obtained using the ILS variable may be due to leaders not effectively portraying their assigned style of leadership. However, it is also possible that the higher correlations obtained on the self-reported leadership style measure may have been the result of a "personality" variable. That is, an individual assigned

to the democratic style condition may have behaved autocratically (or vice versa), due to a personal preference for that style. This personal preference for a particular style may have brought other predispositions along with it (such as a set of beliefs regarding the skills, abilities and motivation of the subordinates).

In addition to the leader "personality" explanation, it is also conceivable that the true skill, motivation, etc. levels of the subordinates could have influenced the leadership style which was exhibited in the Kipnis et al. (1981) study. Perhaps the leaders who felt that their subordinates were more capable allowed their subordinates much more freedom and input in performing the task. Conversely, those leaders who believed that their subordinates were incapable of successful performance may have exerted more controlling leadership tactics. The correlational results, in the Kipnis et al. (1981) study, based on reported influence tactics still leave open the question of which came first -- the devaluing of the subordinates, or the controlling leadership tactics.

To date, the metamorphic effects of power hypotheses (as evidenced through autocratic leadership) have found support in laboratory studies employing non-existent (or unseen) subordinates or "paper people"

(e.g., Strickland 1958; Kruglanski 1970; Kipnis, 1972). In the only laboratory study conducted with real people (Kipnis et al., 1981), some support was found for the belief that increased use of controlling influence tactics is associated with lower evaluations of subordinates as well as lower assessments of subordinate motivation.

However, as in the present study, Kipnis et al. (1981) found little direct relationship between Imposed Leadership style (Democratic/Autocratic) and either Favorable Employee Evaluations (-.14, n.s.) or Assessment of Employee Motivation (-.16, n.s.). In addition, the proposed metamorphic effects have yet to be experimentally investigated in a real life setting. It is quite possible that these proposed effects may be non-existent in face-to-face situations. Despite finding that leaders did adequately express differences in leadership styles, which were consistent with their assigned roles (as measured by subordinate as well as leader measures of exhibited style), the present study failed to find much support for the hypothesized metamorphic effects of autocratic leadership.

At this time it is important for future research to focus on further attempts to identify the conditions in which the metamorphic effects of autocratic leadership would be most likely to exist (should they exist at

all). It is also important to begin investigating the effects of true, as opposed to experimentally manipulated, differences in leadership style. It is possible that the hypothesized metamorphic effects may be the result of the personality characteristics and preferences associated with individuals who behave autocratically, rather than the act of behaving in an autocratic manner. In addition, future studies of this type should attempt to investigate potential gender effects in mixed-gender groups.

In closing, I believe that it is also important to continue researching these proposed effects in various settings. The limited amount of research in this area has moved from "paper people" (e.g., Strickland, 1958; Kruglanski, 1970) to the laboratory setting (as in the present study, and Kipnis et al., 1981). The next step should be to continue investigating the existence of these hypothesized effects with real people, in a true organizational setting. The power and politics, rewards, and other competitive factors in a real organization may provide the type of situation in which the Metamorphic Effects of Autocratic Style are more likely to be elicited, should such effects do exist.

TABLE 1a

<u>Leader Participant Age</u>			
<u>Category</u>	<u>Number</u>	<u>Percent</u>	<u>Cum. Pct.</u>
Less than 18	4	3	3
18	20	16	19
19	24	19	38
20	14	11	49
21	18	14	63
22	12	9	72
23 to 30	20	16	88
Greater than 30	15	12	100

N = 127

TABLE 1b

Leader Participant Work Experience

<u>Category</u>	<u>Number</u>	<u>Percent</u>	<u>Cum. Pct.</u>
None	20	16	16
Less than 1 yr	28	22	38
1 to 2 years	23	18	56
2 to 3 years	16	13	69
3 to 4 years	13	10	88
5 or more yrs.	27	21	100

N = 127

TABLE 1cLeader Participant Ethnicity

<u>Category</u>	<u>Number</u>	<u>Percent</u>	<u>Cum. Pct.</u>
Native American	0	0	0
Asian	22	17	17
African American	26	21	38
Hispanic	31	25	63
Other Minority	6	5	68
White	41	32	100

N = 126

TABLE 2

Factor Pattern Matrix for Principle-component Factor Analysis of Causal Importance Scale Items.

Item #	FACTOR				
	I	II	III	IV	V
1	<u>.709</u>	.325	-.162	.071	.168
2	.071	.131	.046	.030	<u>.938</u>
3	<u>.807</u>	.242	-.007	.135	.161
4	.262	<u>.800</u>	.028	-.030	.155
5	.063	-.016	.023	<u>.860</u>	-.155
6	<u>.799</u>	.135	.034	.155	.009
7	.187	<u>.803</u>	-.044	.090	.117
8	.079	.140	.117	<u>.558</u>	.310
9	<u>.798</u>	.277	.148	-.055	.112
10	.414	<u>.666</u>	.069	.089	.029
11	.296	<u>.799</u>	.094	.133	-.006
12	.121	-.219	<u>.601</u>	.408	.276
13	.170	.485	<u>.701</u>	.104	-.021
14	.308	<u>.690</u>	.485	-.063	-.075
15	<u>.779</u>	.253	.283	-.071	.046
16	<u>.662</u>	.285	.097	.194	-.146
17	<u>.769</u>	.287	.242	.085	-.076
18	.456	<u>.604</u>	.256	-.234	.085
19	<u>.840</u>	.201	.203	-.123	.004
20	.412	<u>.576</u>	.480	-.202	-.092

Proposed Leader items = Items # 1,3,6,9,15,16,17,19.

Proposed Subordinate items = Items # 4,7,10,11,13,14,18,20.

Proposed External factor items = Items # 2,5,8,12.

N = 130

Highest loading across each item underscored.

Note: Results reflect rotated factor matrix after varimax rotation.

TABLE 3

Factor Pattern Matrix for Principle-component Factor
Analysis of Pre- and Post-TSSE Scale Items.

Item #	FACTOR					
	Pre-TSSE			Post-TSSE		
	I	II	III	I	II	III
1	.012	-.571	.668	.196	-.548	.627
2	.744	-.064	-.291	.813	.001	-.200
3	-.725	.514	-.020	-.770	.336	-.128
4	.009	.157	.807	.058	.254	.883
5	.013	.834	.251	-.033	.867	.248
6	.897	.162	.184	.897	.039	.195
7	.100	.225	.867	.205	.222	.873
8	.028	.901	.191	.048	.872	.178
9	.908	.042	.156	.918	.029	.195
10	.102	.237	.847	.071	.209	.897
11	.018	.906	.114	.023	.919	.154
12	.922	.078	.146	.840	.159	.217

Pre-TSSE (N = 118), Post-TSSE (N = 119)

Proposed Word Problem Self-esteem items = Items # 1,4,7,10.
 Proposed Math Aptitude Self-esteem items = Items # 3,5,8,11.
 Proposed Leadership Self-esteem items = Items # 2,6,9,12.

Highest positive loading across each item underscored

Note 1: Results reflect rotated factor matrix after varimax rotation

Note 2: Items 1, 2 and 3 are comparison items: Item # 1 compares Word prob.S.E. vs. Math. Aptitude S.E;
 Item # 2 compares Leadership vs. Word Problems;
 Item # 3 compares Math Aptitude vs. Leadership.

Note 3: Item # 3 was recoded such that a higher score indicates relatively higher mathematical aptitude self-esteem.

TABLE 4

Factor Pattern Matrix for Principle-component Factor
Analysis of Leadership Style Manipulation Check Scale Items.

Item #	FACTOR	
	I	II
1	<u>.771</u>	.017
2	.377	<u>.740</u>
3	<u>.861</u>	.203
4	<u>.773</u>	.358
5	<u>.881</u>	.125
6	<u>.808</u>	.184
7	.023	<u>.913</u>
8	<u>.803</u>	.268

Autocratic worded items = Items # 1, 3, 4, 5, 6, 8
Democratic worded items = Items # 2, 7

N = 131

Highest loading across each item underscored

Note: Results reflect rotated factor matrix after
varimax rotation

TABLE 5

Leadership Style Manipulation Check -- Percent
Indicating Adherence to Assigned Style, by Category

<u>Group</u>	LEADERSHIP MANIPULATION CHECK CATEGORIES (percentages)				
	Not at All	Very Little	Somewhat	Very Much	Always
Total (131)	1	6	56	51	16
<u>Lead Style</u>					
Democratic (64)	0	2	42	39	17
Autocratic (66)	2	8	44	39	8
<u>Sex</u>					
Male (49)	0	4	41	37	18
Female (81)	1	5	44	41	9
<u>Race</u>					
African Amer. (26)	0	0	46	42	12
Asian (22)	0	0	50	46	5
Hispanic (31)	3	3	42	39	13
White (40)	0	10	40	33	18
Other (6)	0	17	50	33	0
<u>Work Exper.</u>					
None (20)	0	0	65	25	10
LT 1 year (28)	4	4	39	46	7
1 to 2 years (23)	0	0	57	43	0
2 to 3 years (15)	0	7	27	47	20
3 to 4 years (13)	0	15	15	54	15
GT 5 years (27)	0	7	44	26	22

TABLE 6a Variable means and standard deviations across experimental conditions (Part I of II).

	<u>CONDITION</u>		
	Democratic Low Perf. (N=22)	Democratic Ave. Perf. (N=21)	Democratic High Perf. (N=21)
	Mean (sd)	Mean (sd)	Mean (sd)
<u>DEPENDENT VARS.</u>			
LSS	3.96 (1.8)	3.76 (1.6)	5.29 (1.5)
LDS	4.09 (1.7)	4.05 (1.3)	5.05 (1.6)
Causal importance			
L/S	4.18 (.73)	4.24 (1.2)	5.14 (1.2)
LCI	3.81 (1.2)	4.17 (1.3)	4.46 (1.1)
SCI	4.15 (1.4)	4.96 (1.0)	5.13 (1.3)
EFCI	3.93 (1.2)	3.64 (1.2)	3.54 (1.0)
LSA (6-items)	3.23 (.47)	3.39 (.44)	3.71 (.59)
LSA (OAR)	3.14 (.56)	3.33 (.48)	3.67 (.73)
(z)SPA (6-items)	3.32 (.70)	3.31 (.75)	3.86 (.74)
(z)SPA (OAR)	3.45 (.71)	3.40 (.75)	3.93 (.80)
(z)SAR	3.94 (.54)	3.93 (.46)	4.14 (.56)
(z)PSD	2.45 (.93)	2.55 (.74)	2.29 (.88)
TSSE			
Pre-Post WP	-1.06 (2.3)	0.06 (1.6)	0.25 (.91)
Pre-Post MA	-0.17 (1.2)	-0.17 (1.2)	0.60 (1.9)
Pre-Post GL	-0.17 (3.6)	-0.06 (1.4)	0.15 (2.7)

Note 1. Approximate sample sizes are N=131, except where where indicated by (z) these have an approximate N size of 262.

Note 2: LSS=preferred future style, leading the same subords.; LDS=preferred future style, leading different subords.; Causal Importance Scales -- L/S=leader vs. subordinate, LCI=leader, SCI=subordinate, EFCI=external factors; LSA(6 items)=leader self-assessment scale mean; LSA(OAR)=one-item leader self-assessment overall rating; SPA(6-items)=subordinate performance appraisal scale mean; SPA(OAR)=one-item subordinate assessment overall rating; SAR=subordinate attribute ratings; PSD=preferred social distance ratings; TSSEs=Task Specific Self-esteem Scales (Pre minus Post difference scores) for Word Problems (WP), Mathematical Aptitude (MA), and Group Leadership (GL).

TABLE 6b Variable means and standard deviations across experimental conditions (Part II of II).

	<u>CONDITION</u>		
	Autocratic Low Perf. (N=25)	Autocratic Ave. Perf. (N=20)	Autocratic High Perf. (N=22)
	Mean (sd)	Mean (sd)	Mean (sd)
<u>DEPENDENT VARS.</u>			
LSS	4.00 (1.9)	4.05 (1.5)	3.91 (1.4)
LDS	3.67 (2.0)	4.30 (1.5)	3.36 (1.5)
Causal importance			
L/S	3.68 (1.5)	3.95 (1.1)	3.86 (.71)
LCI	3.86 (2.0)	3.88 (1.6)	5.20 (.97)
SCI	3.96 (1.9)	4.33 (1.4)	5.45 (.86)
EFCI	3.46 (1.2)	3.28 (1.3)	3.15 (1.1)
LSA (6-items)	3.13 (.88)	3.56 (.64)	3.97 (.61)
LSA (OAR)	3.42 (.97)	3.47 (.91)	3.91 (.75)
(z)SPA (6-items)	3.39 (.75)	3.54 (.68)	4.02 (.71)
(z)SPA (OAR)	3.54 (.86)	3.58 (.82)	4.00 (.86)
(z)SAR	3.81 (.59)	3.74 (.53)	4.15 (.42)
(z)PSD	2.53 (.77)	2.36 (.65)	2.40 (.81)
TSSE			
Pre-Post WP	-0.76 (2.7)	0.15 (2.4)	0.95 (.74)
Pre-Post MA	0.43 (2.4)	-0.39 (1.3)	-0.63 (1.5)
Pre-Post GL	-1.29 (2.4)	-0.08 (2.9)	0.95 (1.5)

Note 1. Approximate sample sizes are N=131, except where where indicated by (z) these have an approximate N size of 262.

Note 2: LSS=preferred future style, leading the same subords.; LDS=preferred future style, leading different subords.; Causal Importance Scales -- L/S=leader vs. subordinate, LCI=leader, SCI=subordinate, EFCI=external factors; LSA(6 items)=leader self-assessment scale mean; LSA(OAR)=one-item leader self-assessment overall rating; SPA(6-items)=subordinate performance appraisal scale mean; SPA(OAR)=one-item subordinate assessment overall rating; SAR=subordinate attribute ratings; PSD=preferred social distance ratings; TSSEs=Task Specific Self-esteem Scales (Pre minus Post difference scores) for Word Problems (WP), Mathematical Aptitude (MA), and Group Leadership (GL).

TABLE 7

Analysis of Variance for Preferred Future Style (Leading the Same Subordinates) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	15.82	5.27	1.95	.126
ILS	1	3.95	3.95	1.46	.230
RGP	2	11.99	5.99	2.21	.114
2-way interaction					
ILS x RGP	2	17.29	8.65	3.19	.044
Explained	5	33.11	6.62	2.45	.038
Residual	124	335.82	2.71		
Total	129	368.92	2.86		

TABLE 8

Analysis of Variance for Preferred Future Style (Leading a Different Group) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	15.63	5.21	1.92	.130
ILS	1	12.79	12.79	4.72	.032
RGP	2	2.61	1.31	.48	.619
2-way interaction					
ILS x RGP	2	20.40	10.20	3.76	.026
Explained	5	36.03	7.21	2.66	.026
Residual	124	336.35	2.71		

Total	129	372.38	2.89		

TABLE 9

Analysis of Variance for Overall Causal Importance (Leader/Subordinate) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	23.35	7.78	6.09	.001
ILS	1	15.74	15.74	12.32	.001
RGP	2	7.54	3.77	2.95	.056
2-way interaction					
ILS x RGP	2	5.73	2.87	2.24	.110
Explained	5	29.08	5.81	4.55	.001
Residual	124	158.53	1.28		

Total	129	187.61	1.45		

TABLE 10a

Causal Importance Scale Item Intercorrelations
(Part 1 of 3).

		Leader Causal Importance Item Numbers							
		1	3	6	9	15	16	17	19
	1	-							
	3	71**	-						
L	6	53**	61**	-					
	9	56**	65**	64**	-				
C	15	53**	64**	66**	74**	-			
	16	52**	52**	54**	55**	48**	-		
I	17	51**	69**	59**	69**	69**	66**	-	
	19	55**	68**	66**	74**	72**	57**	69**	-
	4	42**	46**	31**	41**	42**	35**	41**	38**
	7	39**	34**	35**	38**	34**	39**	37**	29**
S	10	53**	44**	42**	52**	52**	43**	45**	47**
	11	46**	42**	38**	46**	47**	41**	51**	42**
C	13	21*	29**	28**	41**	44**	33**	43**	33**
	14	37**	39**	35**	51**	55**	43**	53**	46**
I	18	39**	46**	40**	54**	60**	38**	57**	61**
	20	41**	48**	30**	50**	54**	49**	56**	62**
E	2	21*	21*	07	18	11	01	02	08
F	5	12	20	16	01	06	13	12	00
C	8	01	19	13	20	12	19	25*	14
I	12	08	11	17	04	15	12	13	08

N = 128

Note 1: Column labels -- LCI=Leader Causal Importance items, SCI=Subordinate Causal Importance items, EFCI=External Factors Causal Importance items.

Note 2: * p<.01, ** p<.001; decimals omitted.

TABLE 10b

Causal Importance Scale Item Intercorrelations
(Part 2 of 3).

		Subordinate Causal Importance Item Numbers							
		4	7	10	11	13	14	18	20
	4	-							
	7	65**	-						
S	10	59**	51**	-					
	11	64**	63**	73**	-				
C	13	46**	39**	42**	47**	-			
	14	58**	58**	53**	67**	69**	-		
I	18	62**	51**	54**	60**	40**	65**	-	
	20	54**	46**	52**	54**	61**	76**	70**	-
E	2	22*	22*	07	12	11	08	15	05
F	5	01	04	01	09	12	03	-10	-06
C	8	11	11	21*	16	17	11	13	09
I	12	-06	-05	09	04	25*	08	-01	04

N = 128

Note 1: Column labels -- SCI=Subordinate Causal Importance items, EFCI=External Factors Causal Importance items.Note 2: * p<.01, ** p<.001; decimals omitted

TABLE 10c

Causal Importance Scale Item Intercorrelations
(Part 3 of 3).

	External Factors	Causal Importance	Item Numbers
	2	5	8
E	2	-	
F	5	-02	-
C	8	26*	27**
I	12	19	28**
			13

N = 128

Note 1: Column label -- EFCI=External Factors Causal Importance items.Note 2: * p<.01, ** p<.001; decimals omitted

TABLE 11

Analysis of Variance for Leader Self-appraisal (6-item scale) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	10.28	3.43	8.71	.000
ILS	1	.35	.35	.90	.345
RGP	2	9.95	4.97	12.65	.000
2-way interaction					
ILS x RGP	2	7.49	.38	.95	.389
Explained	5	11.03	2.21	5.61	.000
Residual	124	48.38	.39		

Total	129	59.41	.46		

TABLE 12

Analysis of Variance for Leader Self-appraisal (one-item Overall rating) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	7.81	2.60	4.55	.005
ILS	1	1.62	1.62	2.83	.095
RGP	2	6.19	3.09	5.40	.006
2-way interaction					
ILS x RGP	2	.11	.06	.10	.910
Explained	5	7.92	1.58	2.77	.021
Residual	124	70.31	.57		
Total	129	78.23	.61		

TABLE 13

Analysis of Variance for Subordinate Evaluation (6-item scale) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	19.25	6.41	12.35	.000
ILS	1	1.47	1.47	2.84	.093
RGP	2	17.63	8.82	16.96	.000
2-way interaction					
ILS x RGP	2	.28	.14	.27	.761
Explained	5	19.53	3.91	7.52	.000
Residual	252	130.96	.52		

Total	257	150.50	.59		

TABLE 14

Analysis of Variance for Subordinate Evaluation (one-item Overall rating) by Imposed Leadership Style and Reported Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	13.30	4.43	6.92	.000
ILS	1	.77	.77	1.21	.273
RGP	2	12.41	6.21	9.68	.000
2-way interaction					
RGP x RGP	2	.11	.06	.09	.916
Explained	5	13.41	2.68	4.19	.001
Residual	252	161.50	.64		

Total	257	174.90	.68		

TABLE 15

Analysis of Variance for Subordinate Attributes by
Imposed Leadership Style and Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	5.59	1.86	6.88	.000
ILS	1	.69	.69	2.53	.113
RGP	2	4.98	2.49	9.19	.000
2-way interaction					
ILS x RGP	2	.42	.21	.78	.460
Explained	5	6.02	1.20	4.44	.001
Residual	252	68.28	.27		
Total	257	74.30	.29		

TABLE 16

Analysis of Variance for Preferred Social Distance by
Imposed Leadership Style and Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	.96	.32	.50	.683
ILS	1	.00	.00	.00	.989
RGP	2	.96	.48	.75	.474
2-way interaction					
ILS x RGP	2	1.02	.51	.80	.450
Explained	5	1.98	.40	.62	.685
Residual	252	160.89	.64		

Total	257	162.87	.63		

TABLE 17a

Analysis of Variance for Word Problems TSSE sub-scale
by Imposed Leadership Style and Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	27.35	9.12	2.45	.067
ILS	1	.17	.17	.05	.831
RGP	2	27.35	13.67	3.68	.029
2-way interaction					
ILS x RGP	2	.94	.47	.13	.882
Explained	5	28.29	5.66	1.52	.189
Residual	102	378.92	3.72		

Total	107	407.21	3.81		

TABLE 17b

Analysis of Variance for Group Leadership TSSE sub-scale
by Imposed Leadership Style and Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	33.78	11.26	1.78	.156
ILS	1	.39	.39	.06	.806
RGP	2	33.00	16.50	2.60	.079
2-way interaction					
ILS x RGP	2	17.95	8.98	1.42	.247
Explained	5	51.73	10.35	1.63	.158
Residual	102	646.15	6.34		

Total	107	697.88	6.52		

TABLE 17c

Analysis of Variance for Mathematical Data TSSE sub-scale
by Imposed Leadership Style and Performance Feedback.

Source	df	SS	MS	F ratio	Signf.
Main Effects	3	5.92	1.98	.68	.566
ILS	1	5.46	5.46	1.88	.173
RGP	2	.66	.33	.11	.893
2-way interaction					
ILS x RGP	2	17.43	8.71	3.00	.054
Explained	5	23.35	4.67	1.61	.164
Residual	102	296.06	2.90		

Total	107	319.41	2.99		

Table 18TSSE Means Across Reported Group Performance Levels

TSSE	<u>REPORTED GROUP PERFORMANCE</u>			F	sig.
	Low (N=39)	Average (N=30)	High (N=39)		
Sub-scale					
Word Problems	-.90x	.10	.18y	3.68	.029
Group Leadership	-.77x	-.07	.54y	2.60	.079
Mathematical Data	.15	.07	.00	.11	.893

Note 1: Group means reflect Pre minus Post TSSE difference score means.

Note 2: Lower case x,y reflect significant ($p < .05$, Scheffe) differences in group means between the three RGP levels; no other group means differ significantly.

Table 19

Correlations between Reported Leadership Behavior
and Various Dependent Measures

<u>Reported Leadership Behavior</u>			
<u>DEPENDENT VARS.</u>		<u>DEPENDENT VARS.</u>	
LSS	.17	LSA (6-items)	.01
LDS	.20	LSA (OAR)	-.02
Causal importance		(z)SPA (6-items)	.09
L/S	.27**	(z)SPA (OAR)	.12
LCI	-.05	(z)SAR	.18*
SCI	.11	(z)PSD	-.10
EFCI	.19		
TSSE			
Pre-Post WP	.00		
Pre-Post MA	.14		
Pre-Post GL	.06		

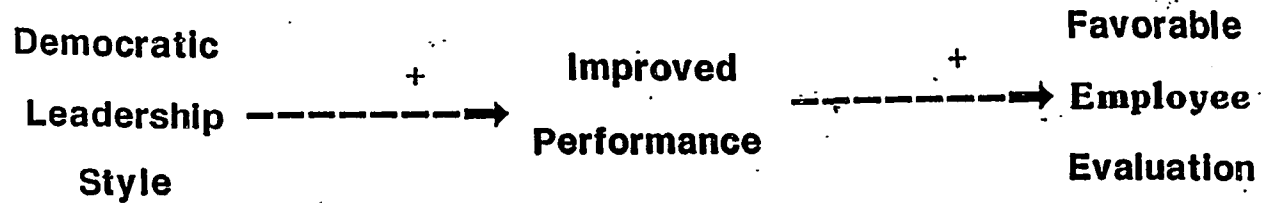
* $p < .01$, ** $p < .001$

Note 1. Reported Leadership Behavior is a self-report from each leader regarding the behaviors s/he exhibited during performance of the task (higher values reflect more democratic style behavior).

Note 2. Approximate group sizes are $N=131$, except where where indicated by (z) these have an approximate N size of 262.

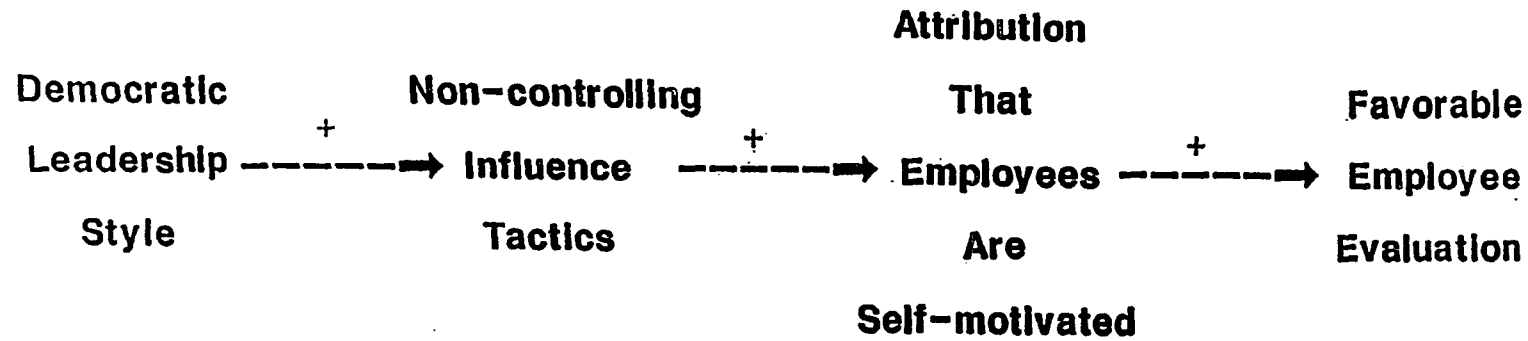
Note 3: LSS=preferred future style, leading the same subords.; LDG=preferred future style, leading different subords.; Causal Importance Scales -- L/S=leader vs. subordinate, LCI=leader, SCI=subordinate, EFCI=external factors; LSA(6 items)=leader self-assessment scale mean; LSA(OAR)=one-item leader self-assessment overall rating; SPA(6-items)=subordinate performance appraisal scale mean; SPA(OAR)=one-item subordinate assessment overall rating; SAR=subordinate attribute ratings; PSD=preferred social distance ratings; TSSEs=Task Specific Self-esteem Scales (Pre minus Post difference scores) for Word Problems (WP), Mathematical Aptitude (MA), and Group Leadership (GL).

Figure 1. Performance-evaluation model



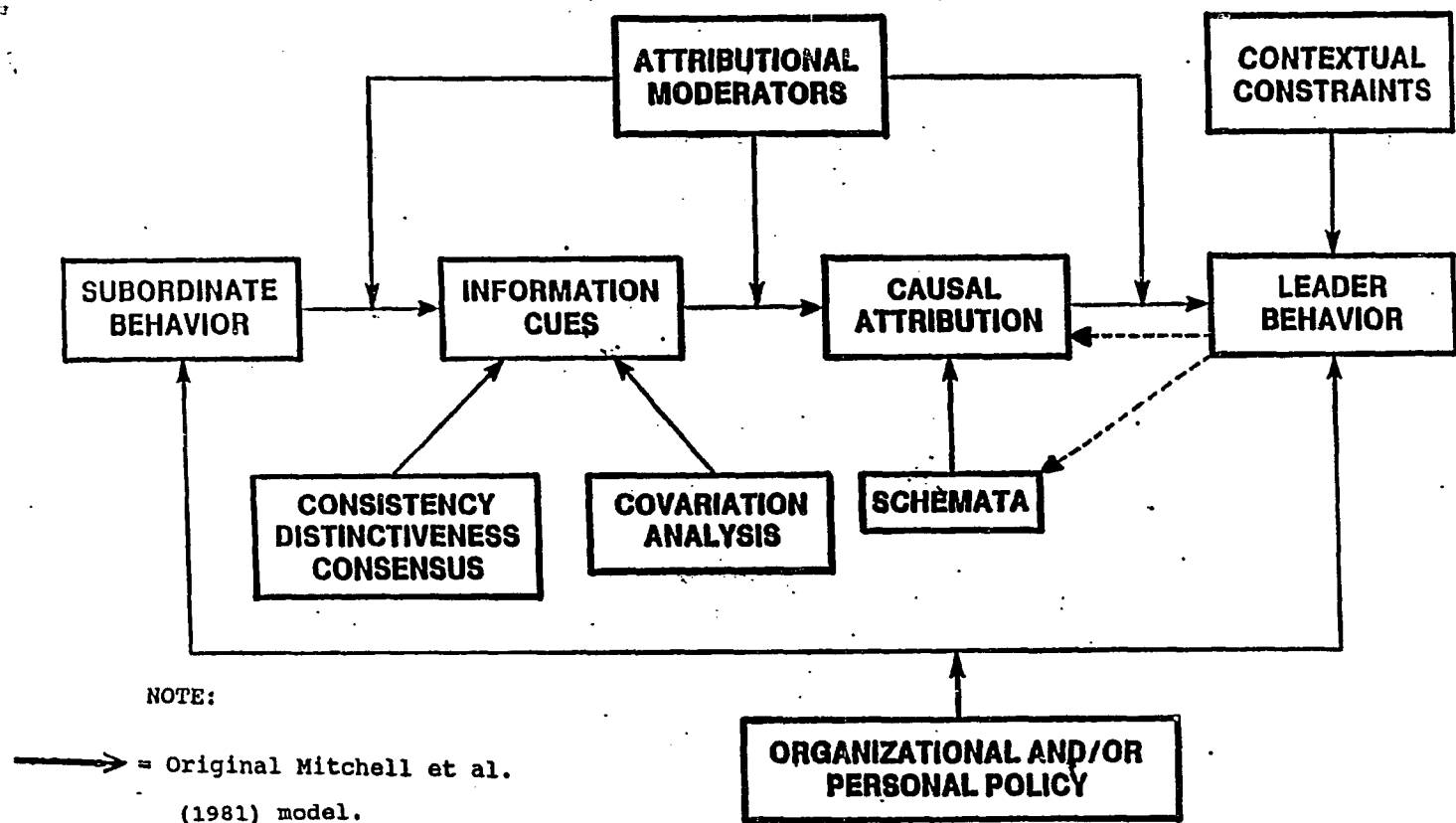
Source: Kipnis, D., Schmidt, S., Price, K., & Stitt, C. (1981) Why do I like thee: Is it your performance or my orders? Journal of Applied Psychology, 66, 324-328.

Figure 2. Power-usage model



Source: Kipnis, D., Schmidt, S., Price, K., & Stitt, C. (1981) Why do I like thee: Is it your performance or my orders? Journal of Applied Psychology, 66, 324-328.

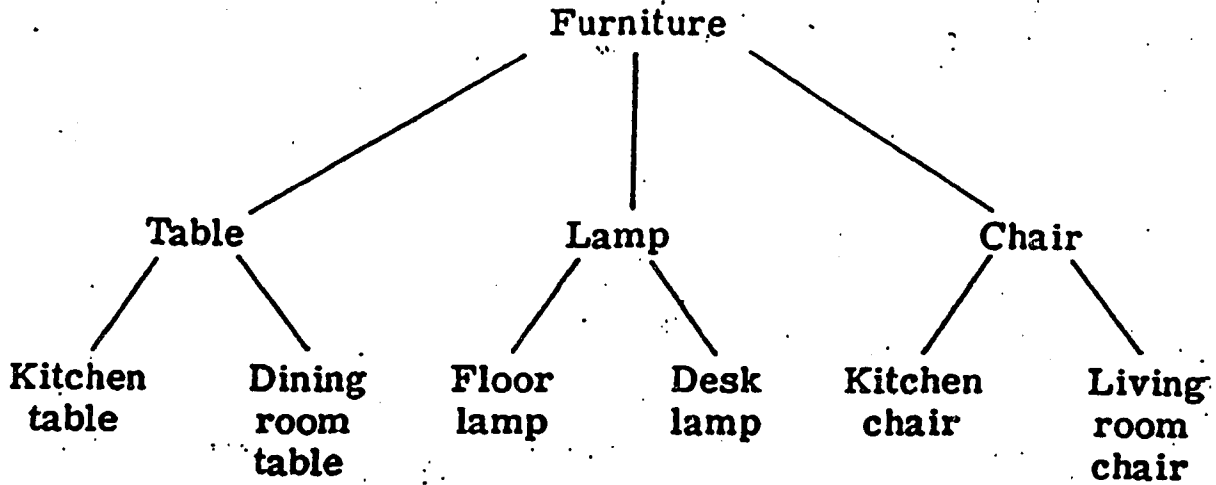
Figure 3. BASIC ATTRIBUTIONAL MODEL



Source: Mitchell, T.R., Green, S.G., & Wood, T.E. (1981). An attributional model of leadership and the poor-performing subordinate: Development and validation. In B.M. Staw & L.L. Cummings (Eds.), *Research in organizational behavior* (Vol. 3), Greenwich,

Figure 4.

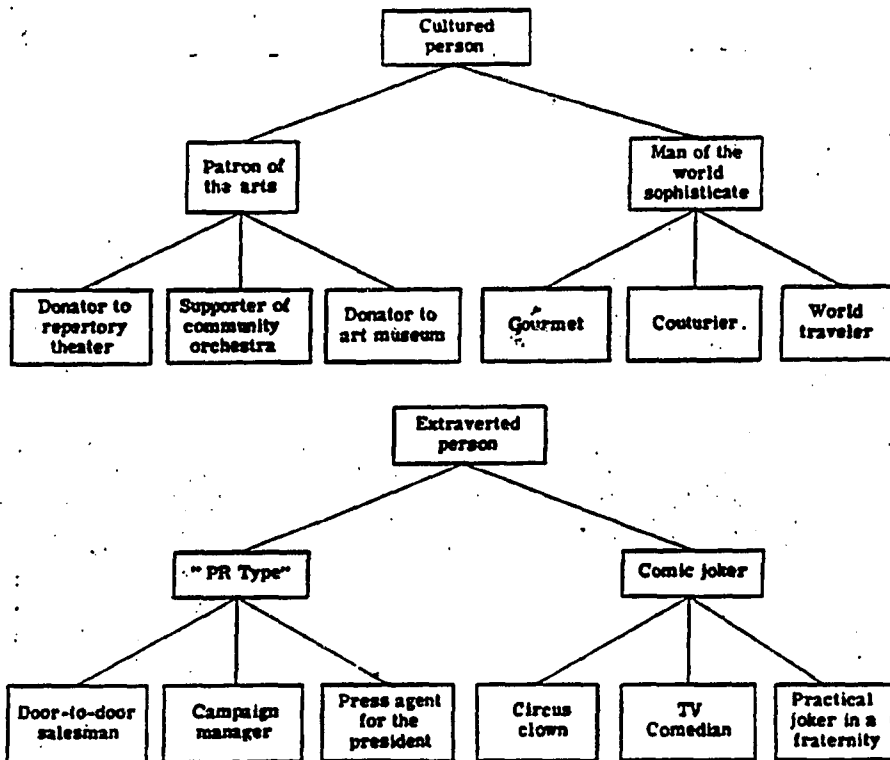
An Example of a Common Object Taxonomy



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

Figure 5.

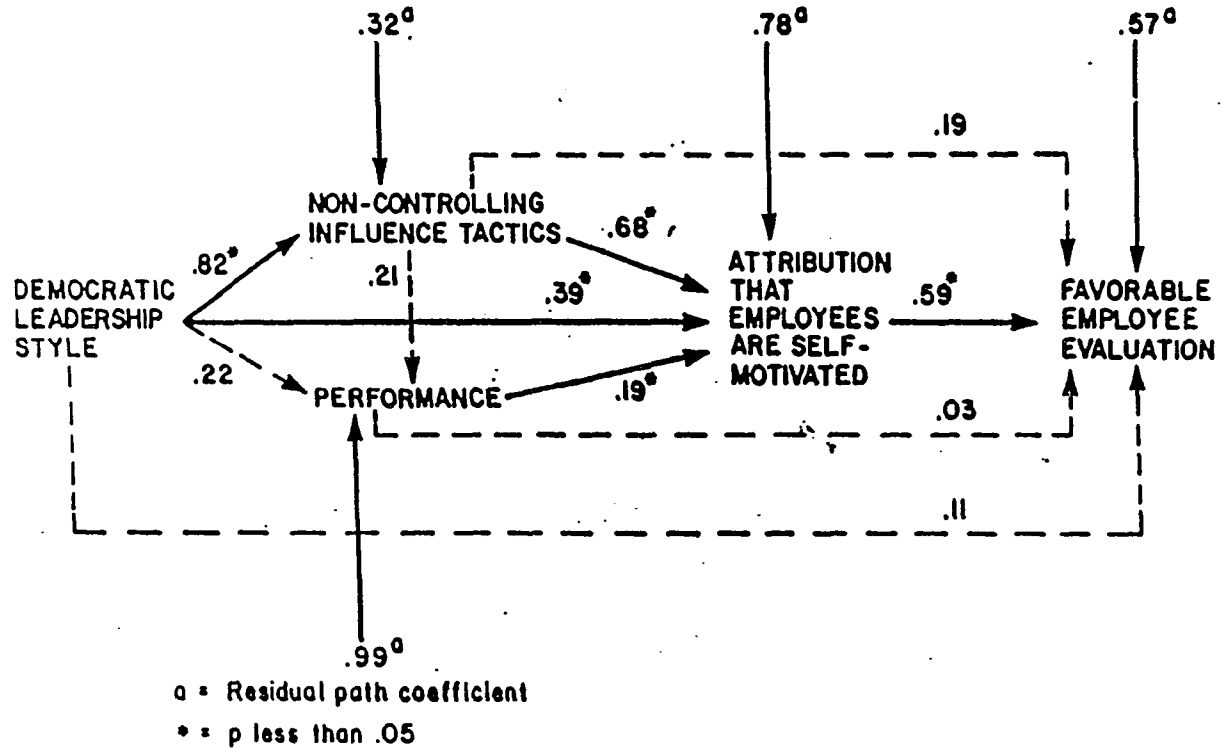
Some Tentative Taxonomies of Person Categorization



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

Figure 6.

Kipnis et al. (1981) Path Model of Leadership Style and Employee Evaluation



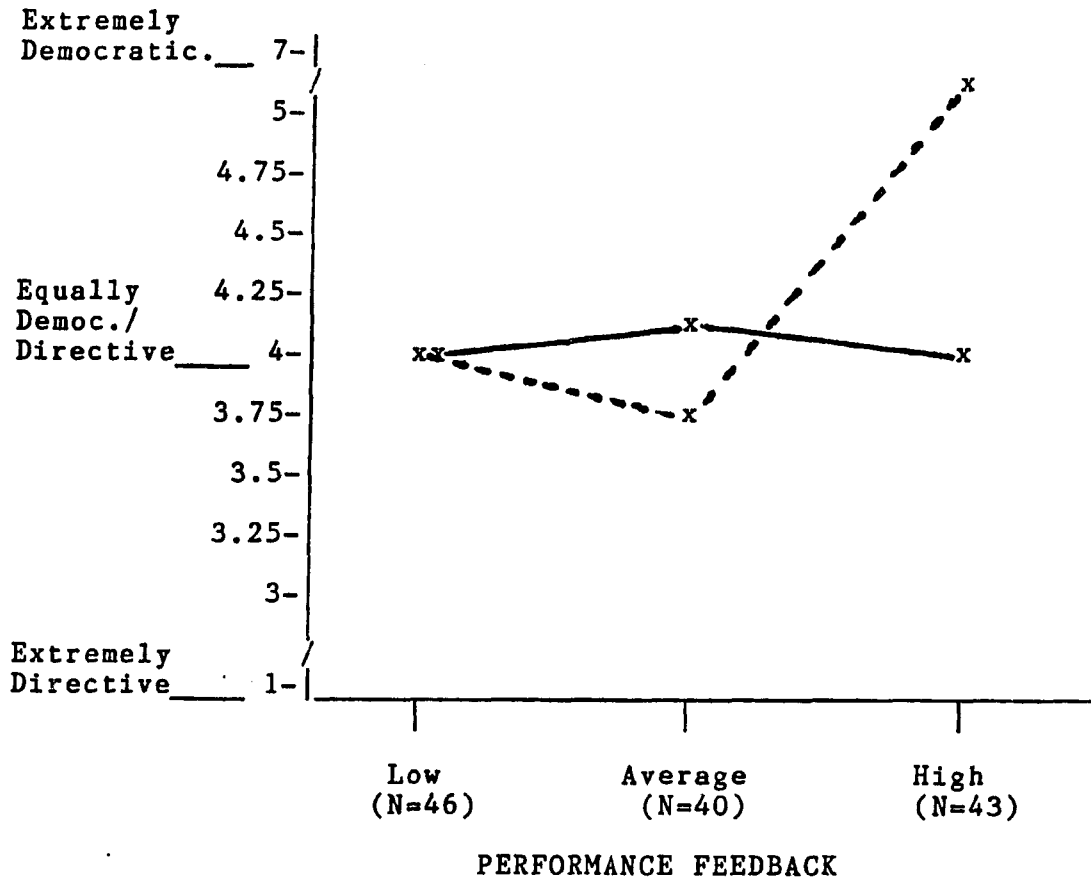
Source: Kipnis, D., Schmidt, S., Price, K., & Stitt, C. (1981) Why do I like thee: Is it your performance or my orders? Journal of Applied Psychology, 66, 324-328.

FIGURE 7 EXPERIMENTAL DESIGN

REPORTED GROUP PERFORMANCE

	LOW	AVERAGE	HIGH
<u>IMPOSED LEADERSHIP STYLE</u> AUTOCRATIC	CELL #1	CELL #2	CELL #3
DEMOCRATIC	CELL #4	CELL #5	CELL #6

PREFERRED FUTURE LEADERSHIP STYLE
(Leading the same subordinates)



--- Democratic Imposed Leadership Style (N=64)
 — Autocratic Imposed Leadership Style (N=66)

Figure 8. Imposed Leadership Style by Reported Group Performance interaction effect for Preferred Future Style (leading the same subordinates).

PREFERRED FUTURE LEADERSHIP STYLE
(Leading different subordinates)

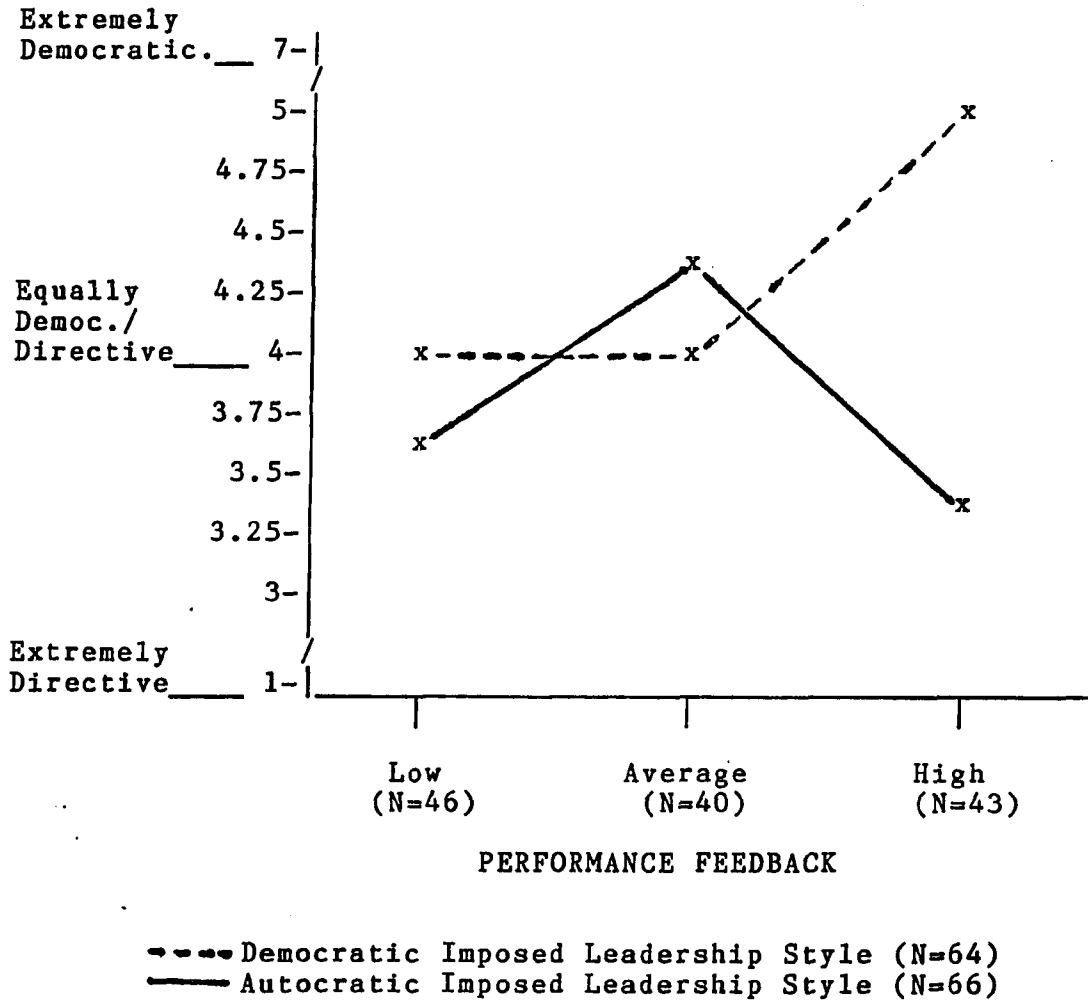


Figure 9. Imposed Leadership Style by Reported Group Performance interaction effect for Preferred Future Style (leading different subordinates).

Appendix A

PRE

Name: _____

Date: _____

Group Number: _____

Task Components Self-Assessment

Please circle one response for each of the following twelve items.

- 1) I am ____ at solving word problems than at working with mathematical data.
(A) Much Better; (B) Slightly Better; (C) About the Same;
(D) Slightly Worse; (E) Much Worse.
- 2) I am ____ at leading a group than at solving word problems.
(A) Much Better; (B) Slightly Better; (C) About the Same;
(D) Slightly Worse; (E) Much Worse.
- 3) I am ____ at leading a group than at working with mathematical data.
(A) Much Better; (B) Slightly Better; (C) About the Same;
(D) Slightly Worse; (E) Much Worse.
- 4) Do you think you have an aptitude for solving word problems?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 5) Do you think you have an aptitude for working with mathematical data?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.

- 6) Do you think you have the ability to effectively lead a group?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 7) Given a chance to work on word problems, how well do you think you would do?
(A) Very Well; (B) Fairly Well; (C) Not Sure;
(D) Not So Well; (E) Not Well At All.
- 8) Given a chance to work with mathematical data, how well do you think you would do?
(A) Very Well; (B) Fairly Well; (C) Not Sure;
(D) Not So Well; (E) Not Well At All.
- 9) Given a chance to lead a group, how well do you think you would do?
(A) Very Well; (B) Fairly Well; (C) Not Sure;
(D) Not So Well; (E) Not Well At All.
- 10) Do you feel capable of effectively solving word problems?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 11) Do you feel capable of effectively working with mathematical data?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 12) Do you feel capable of effectively leading a group?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.

Appendix B

Leader

The purpose of this study is to investigate how effectively individuals can adapt to an assigned leadership style. Research has shown that, in order to be effective, it is important that leaders have the ability to use different leadership styles in various situations. Therefore, an individual's ability to quickly adapt to an assigned style of leadership may be an indication of that individual's general leadership ability.

The attached page describes the leadership style you have been assigned to use during the upcoming exercise. Please read your Leader Instructions and follow them at all times during this exercise. Please note that as leader of the group you ARE NOT ALLOWED TO PERFORM ANY OF THE MATHEMATICAL CALCULATIONS YOURSELF. If your group performs well on this task, your name will be entered into a lottery drawing for a bonus prize. The bonus drawing (to be held approximately three months from now, at the conclusion of this study) will be for three prizes, which are as follows: first prize is \$100.00, second prize is \$75.00, and third prize is \$50.00.

As an additional incentive to take this task seriously, there will be other measures of performance which will allow you to have your name entered into this lottery drawing (e.g., the extent to which you approach the task seriously) -- these measures will be outlined for you at the conclusion of this exercise. Please approach this task as if you were performing it seriously in a real organization.

Thank You

* Please turn to the attached page and carefully read your instructions.

LEADER INSTRUCTIONS

During the following period, you are to lead your group in a democratic manner. This means that you should seek input from your group members when making decisions. You are to decide after consulting with your group members and considering their individual opinions. You are to allow your group members to have influence over the decisions which can affect the group's performance. You are also to focus on keeping everyone involved in the decisions which need to be made. You should not give orders; you are to seek the cooperation of your group members. As stated earlier, you are not to carry out any of the group's mathematical calculations yourself. You are not to make any decisions alone. You are to solicit the opinions of your group members before taking any action. When one of the members of your group begins to tell you what s/he thinks, you are to actively listen and be sure that the other group member considers this information. You should allow others in the group the opportunity to express their ideas. You should carefully consider opposing points of view and quickly discuss any disagreements before asking your group members to help make a decision. In addition, you are to focus on leading your team in accomplishing the objectives of the assigned task.

Note: Do not share the information on this page with any members of your group.

LEADER INSTRUCTIONS

During the following period, you are to lead your subordinates in a highly authoritative manner. This means that you are not to seek input from them when making decisions. You are to make all of the decisions for your subordinates. You are to decide without consultation or consideration of your subordinates' opinions. You are to be dominant and aggressive. You should also focus on maintaining control over the group, although, as stated earlier, you are not to carry out any of the group's mathematical calculations yourself. You are to give orders and to insure that these orders are carried out by your subordinates. No one but you is to make any decisions. You are not to solicit opinions. When your subordinates begin to tell you what they think, you are to interrupt them and continue to make your point, emphasizing that you have been designated the leader, so what you say goes. You should aggressively attack opposing points of view through interpretation and by forceful verbal measures. You should not let anyone else take control of the group. In addition, you are to focus on leading your team in accomplishing the objectives of the assigned task.

Note: Do not share the information on the page with any members of your group.

Appendix c

Subordinate

You will be taking part in a study designed to investigate performance on a group task. You will be working along with two other individuals on this task. Your group will include three different roles, one leader and two subordinates. You have been assigned to one of the two subordinate roles.

If your group performs well on this task, your name will be entered into a lottery drawing for a bonus prize. The bonus drawing (to be held approximately three months from now, at the conclusion of this study) will be for three prizes, which are as follows: first prize is \$100.00, second prize is \$75.00, and third prize is \$50.00.

As an additional incentive to take this task seriously, there will be other measures of performance which will allow you to have your name entered into this lottery drawing (e.g., the extent to which you approach the task seriously) -- these measures will be outlined for you at the conclusion of this exercise. Please approach this task as if you were performing it seriously in a real organization.

Thank You

Appendix D

TASK INSTRUCTIONS

In this exercise you will be provided year-end statistical information for players on six different baseball teams. The statistics for these teams (Teams A, B, C, D, E, and F) reflect actual batting statistics from six Major League Baseball Teams (in the same league) at the end of a previous season. Your group's task is to use the Team Statistics and the information provided on the Team Information page to correctly identify the year-end standings of these six Major League Baseball teams.

The Team Information page (see attached) will provide you with sufficient information to correctly identify the final year-end standings for each of the six teams. It will be necessary, however, to perform a number of analyses using the team statistics sheets prior to utilizing the Team Information. Your group will have fifteen (15) minutes in which to complete this task. The leader will be provided with one (1) calculator for the group members to use. However, the leader is not to perform any mathematical calculations him/herself. Once you have identified the standings of these six teams, the leader is to write the group's responses on the Answer Sheet which will be provided to you. If your group should begin to run out of time, you should take your best guess as to the standings of the teams (based on the information you have available at the time).

Please approach this exercise with the same motivation and determination that you would exhibit if you were working on a task in a real organization.

If you have any questions please ask them now.

GOOD LUCK!

BONUS: If your group should correctly identify the actual year-end standings of at least four of the six teams, each member of your group will have his name entered in a lottery drawing for three (3) prizes: one (1) first prize of \$100.00, one (1) second prize of \$75.00, and one (1) third prize of \$50.00. There are other performance measures which would also allow you to have your name entered into this lottery drawing (such as your seriousness toward the task) -- these will be outlined in detail at the conclusion of this exercise.

The Bonus drawing will be held at the conclusion of this study (approximately three months from now). A notice will be posted on the Psychology Department bulletin board at least two weeks prior to the drawing announcing the time, date, and place of the drawing. The winners of the prizes will be notified by the individual conducting this study, and the winner's name will also be posted on the bulletin board in the Psychology Department (you will not have to be present at the drawing to win).

Appendix E

TEAM INFORMATION

The team information (outlined below), along with the individual Team Statistic forms for Teams A, B, C, D, E, and F, provides you with sufficient information to correctly identify the standings of all six teams as they actually appeared at the end of the Major League Baseball season in question.

In order to successfully accomplish this task your group should do the following:

(1) Read the team information below to determine the information that you will need to obtain from the Team Statistics forms which are provided for each of the six teams.

(2) Calculate the information which you need to obtain from the Team Statistics forms.

(3) Use the information provided below, along with the information on the Team Statistics forms, to determine the final year-end standings of the six teams (Team A through Team F).

Runs Scored (RUNS): The first and second place teams each had more total runs scored than any of the other teams (3rd through 6th place).

Hits: The third and fifth place teams each had more total hits than any of the other teams.

Home Runs: The first, second, and fourth place teams each had more total home runs than any of the other three teams.

Runs Scored (RUNS): The fifth and sixth place teams each had fewer total Runs Scored (Runs) than any of the other teams.

Hits: The sixth place team had fewer total hits than any of the other teams.

Home Runs: The second place team had more total home runs than any of the other five teams.

Appendix F1

Team Statistics Form - Team A

TEAM A

BATTING STATISTICS - POSITION PLAYERS

<u>POSITION</u>	<u>RUNS</u>	<u>HITS</u>	<u>HR</u>
1B	57	114	25
2B	103	177	19
SS	27	63	0
3B	91	158	3
OF	59	114	23
OF	55	95	18
OF	93	164	19
C	39	92	10
STARTERS' TOTALS:	_____	_____	_____
RESERVES:	181	383	31
TEAM TOTALS:	_____	_____	_____

Note: Team Totals can be calculated by totaling each column.

TEAM B

BATTING STATISTICS - POSITION PLAYERS

<u>POSITION</u>	<u>RUNS</u>	<u>HITS</u>	<u>HR</u>
1B	34	70	14
2B	96	175	8
SS	97	179	45
3B	80	126	6
OF	43	91	8
OF	54	103	12
OF	55	97	11
C	41	95	13
STARTERS ³			
TOTALS:	_____	_____	_____
RESERVES:	173	385	46
TEAM TOTALS:	_____	_____	_____

Note: Team Totals can be calculated by totaling each column.

TEAM C

BATTING STATISTICS - POSITION PLAYERS

<u>POSITION</u>	<u>RUNS</u>	<u>HITS</u>	<u>HR</u>
1B	75	142	15
2B	42	104	0
SS	68	110	7
3B	60	107	23
OF	62	119	22
OF	86	150	1
OF	50	122	14
C	15	58	9
STARTERS' TOTALS	_____	_____	_____
RESERVES:	141	325	22
TEAM TOTALS:	_____	_____	_____

Note: Team Totals can be calculated by totaling each column.

TEAM D

BATTING STATISTICS - POSITION PLAYERS

<u>POSITION</u>	<u>RUNS</u>	<u>HITS</u>	<u>HR</u>
1B	37	87	14
2B	90	178	1
SS	43	99	3
3B	86	174	28
OF	65	158	7
OF	61	145	8
OF	77	156	12
C	35	122	13
STARTERS' TOTALS:	_____	_____	_____
RESERVES:	147	313	32
TEAM TOTALS:	_____	_____	_____

Note: Team Totals can be calculated by totaling each column.

TEAM E

BATTING STATISTICS - POSITION PLAYERS

<u>POSITION</u>	<u>RUNS</u>	<u>HITS</u>	<u>HR</u>
1B	64	118	27
2B	50	119	7
SS	74	183	5
3B	80	166	8
OF	80	128	4
OF	67	132	8
OF	78	153	13
C	41	112	11
STARTERS' TOTALS:	_____	_____	_____
RESERVES:	117	303	29
TEAM TOTALS:	_____	_____	_____

Note: Team Totals can be calculated by totaling each column.

TEAM F

BATTING STATISTICS - POSITION PLAYERS

<u>POSITION</u>	<u>RUNS</u>	<u>HITS</u>	<u>HR</u>
1B	92	192	27
2B	59	147	12
SS	36	79	9
3B	65	121	6
OF	64	128	22
OF	125	180	34
OF	63	116	12
C	30	71	3
STARTERS' TOTALS:	_____	_____	_____
RESERVES:	171	343	42
TEAM TOTALS:	_____	_____	_____

Note: Team Totals can be calculated by totaling each column.

Appendix G

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Group Number: _____

Leader's Name: _____

Date: ____/____/____

ANSWER SHEET FOR BASEBALL PROBLEM

Based on the Task Information and Player Statistics which you were provided, please indicate below the order in which you believe these six teams finished during the season in question (write one of the Team Letters A, B, C, D, E or F in each of the six spaces provided below):

FIRST PLACE	TEAM _____
SECOND PLACE	TEAM _____
THIRD PLACE	TEAM _____
FOURTH PLACE	TEAM _____
FIFTH PLACE	TEAM _____
SIXTH PLACE	TEAM _____

Note: Please be sure to use each of the six team letters A, B, C, D, E and F once.

How many of the six teams listed above (A through F) do you think you correctly placed in terms of the actual standings? (circle one)

0	1	2	3	4	6
out of 6	out of 6	out of 6	out of 6	out of 6	out of 6

Appendix H

Baseball Task Norms (1989)

<u>Number of Teams Correctly Classified</u>	<u>Percent in Category</u>	<u>Cumulative Percent</u>	<u>Performance Level</u>
6 out of 6	8%	100%	
4 out of 6	23%	92%	HIGH
3 out of 6	33%	69%	
2 out of 6	17%	36%	AVERAGE
1 out of 6	13%	19%	
0 out of 6	6%	6%	LOW
	<u>100%</u>		

Note: The Baseball Task norms are based on a total sample of 621 undergraduate students (207 groups). All data were obtained during the year 1989.

Appendix I

BASEBALL TASK EVALUATION FORMS

Leader's Form

Your name (the leader): _____

Group number: _____

Date: _____

CAUSAL IMPORTANCE SCALE

Please indicate, for each item below (by circling your response) the extent to which you feel each of the following caused the group to perform at the level at which it did. For example, the following response would indicate that the Time of day was NOT A CAUSE ("1") of the group's performance:

Time of day	1	2	3	4	5	6	7
The ability of the leader	1	2	3	4	5	6	7
The difficulty of the task	1	2	3	4	5	6	7
The effort of the leader	1	2	3	4	5	6	7
The effort of the other group members (excluding the leader)	1	2	3	4	5	6	7
Luck	1	2	3	4	5	6	7
The concentration of the leader	1	2	3	4	5	6	7
Other group members' problem solving skills (excluding the leader)	1	2	3	4	5	6	7
The number of baseball teams in the task	1	2	3	4	5	6	7
Encouragement provided by the leader	1	2	3	4	5	6	7
The concentration of the other group members (excluding the leader)	1	2	3	4	5	6	7
The other group members' ability (excluding the leader)	1	2	3	4	5	6	7
The "breaks" of the task	1	2	3	4	5	6	7
Encouragement provided by other group members (excluding the leader)	1	2	3	4	5	6	7
The other group members' motivation (excluding the leader)	1	2	3	4	5	6	7
The Leader's own motivation	1	2	3	4	5	6	7
The problem solving skills of the leader	1	2	3	4	5	6	7
How hard the leader tried	1	2	3	4	5	6	7
How hard the other group members tried (excluding the leader)	1	2	3	4	5	6	7
The support provided by the leader	1	2	3	4	5	6	7
The support provided by other group members (excluding the leader)	1	2	3	4	5	6	7

NOT A CAUSE (1)
 VERY MINOR CAUSE (2)
 MINOR CAUSE (3)
 MODERATELY IMPORTANT (4)
 IMPORTANT (5)
 VERY IMPORTANT (6)
 EXTREMELY IMPORTANT (7)

Based on your interaction with Subordinate #1 during this task, please indicate below, for each item (by circling the most appropriate number), the extent to which each adjective listed below accurately describes this individual.

For example, the value "5" (as shown on the scale below) would indicate that the adjective "Honest" is a "Very Accurate" description of this individual:

	Very Inaccurate	Inaccurate	Somewhat Accurate	Accurate	Very Accurate
Honest	1	2	3	4	5

To what extent do each of the following adjectives accurately describe Subordinate #1?

	Very Inaccurate	Inaccurate	Somewhat Accurate	Accurate	Very Accurate
Intelligent	1	2	3	4	5
Lazy	1	2	3	4	5
Competent	1	2	3	4	5
Motivated	1	2	3	4	5
Valuable	1	2	3	4	5
Unproductive	1	2	3	4	5
Careless	1	2	3	4	5
Confident	1	2	3	4	5
Unfriendly	1	2	3	4	5
Capable	1	2	3	4	5
Deceitful	1	2	3	4	5
Unreliable	1	2	3	4	5
Pessimistic	1	2	3	4	5
Modest	1	2	3	4	5
Self-reliant	1	2	3	4	5

Based on your interaction with Subordinate #2 during this task, please indicate below, for each item (by circling the most appropriate number), the extent to which each adjective listed below accurately describes this individual.

To what extent do each of the following adjectives accurately describe Subordinate #2 ?

	Very Inaccurate	Inaccurate	Somewhat Accurate	Accurate	Very Accurate
Intelligent	1	2	3	4	5
Lazy	1	2	3	4	5
Competent	1	2	3	4	5
Motivated	1	2	3	4	5
Valuable	1	2	3	4	5
Unproductive	1	2	3	4	5
Careless	1	2	3	4	5
Confident	1	2	3	4	5
Unfriendly	1	2	3	4	5
Capable	1	2	3	4	5
Deceitful	1	2	3	4	5
Unreliable	1	2	3	4	5
Pessimistic	1	2	3	4	5
Modest	1	2	3	4	5
Self-reliant	1	2	3	4	5

Please respond to each of the following items (by circling your response) as it relates to the performance of Subordinate #1 on this task:

	Poor	Below Average	Average	Above Average	Outstanding
Quality of work	1	2	3	4	5
Quantity of work	1	2	3	4	5
Motivation	1	2	3	4	5
Problem solving ability	1	2	3	4	5
Interpersonal skills	1	2	3	4	5
Ability to work effectively on a group task	1	2	3	4	5
OVERALL PERFORMANCE	1	2	3	4	5

*** *** *** *** *** *** *** *** *** *** ***

Please respond to each of the following items (by circling your response) as it relates to the performance of Subordinate #2 on this task:

	Poor	Below Average	Average	Above Average	Outstanding
Quality of work	1	2	3	4	5
Quantity of work	1	2	3	4	5
Motivation	1	2	3	4	5
Problem solving ability	1	2	3	4	5
Interpersonal skills	1	2	3	4	5
Ability to work effectively on a group task	1	2	3	4	5
OVERALL PERFORMANCE	1	2	3	4	5

*** *** *** *** *** *** *** *** *** *** ***

Please respond to each of the following items (by circling your response) as it relates to your own performance on this task:

	Poor	Below Average	Average	Above Average	Outstanding
Quality of work	1	2	3	4	5
Quantity of work	1	2	3	4	5
Motivation	1	2	3	4	5
Problem solving ability	1	2	3	4	5
Interpersonal skills	1	2	3	4	5
Ability to effectively lead a group task	1	2	3	4	5
OVERALL PERFORMANCE	1	2	3	4	5

Appendix J

BASEBALL TASK EVALUATION FORMS

Subordinate's Form

Your name: _____

Group number: _____

Your role (check one):

Subordinate 1 _____ Subordinate 2 _____

Date: _____

CAUSAL IMPORTANCE SCALE

Please indicate, for each item below (by circling your response) the extent to which you feel each of the following caused the group to perform at the level at which it did. For example, the following response would indicate that the Time of day was NOT A CAUSE ("1") of the group's performance:

	1	2	3	4	5	6	7
Time of day	(1)						
The ability of the leader	1	2	3	4	5	6	7
The difficulty of the task	1	2	3	4	5	6	7
The effort of the leader	1	2	3	4	5	6	7
The effort of the other group members (excluding the leader)	1	2	3	4	5	6	7
Luck	1	2	3	4	5	6	7
The concentration of the leader	1	2	3	4	5	6	7
Other group members' problem solving skills (excluding the leader)	1	2	3	4	5	6	7
The number of baseball teams in the task	1	2	3	4	5	6	7
Encouragement provided by the leader	1	2	3	4	5	6	7
The concentration of the other group members (excluding the leader)	1	2	3	4	5	6	7
The other group members' ability (excluding the leader)	1	2	3	4	5	6	7
The "breaks" of the task	1	2	3	4	5	6	7
Encouragement provided by other group members (excluding the leader)	1	2	3	4	5	6	7
The other group members' motivation (excluding the leader)	1	2	3	4	5	6	7
The Leader's own motivation	1	2	3	4	5	6	7
The problem solving skills of the leader	1	2	3	4	5	6	7
How hard the leader tried	1	2	3	4	5	6	7
How hard the other group members tried (excluding the leader)	1	2	3	4	5	6	7
The support provided by the leader	1	2	3	4	5	6	7
The support provided by other group members (excluding the leader)	1	2	3	4	5	6	7

NOT A CAUSE (1)
 VERY MINOR CAUSE (2)
 MINOR CAUSE (3)
 MODERATELY IMPORTANT (4)
 IMPORTANT (5)
 VERY IMPORTANT (6)
 EXTREMELY IMPORTANT (7)

Overall, who do you feel caused the group to perform at the level at which it did? (circle one number)

Almost entirely the Leader			The leader and subordinates equally			Almost entirely the subordinates
1	2	3	4	5	6	7

*** *** *** *** *** *** *** *** *** ***

Use this scale when responding to the items below

DY = Definitely Yes
 Y = Yes
 NS = Not Sure
 N = No
 DN = Definitely Not

(circle your response to each item as it pertains to
 The leader) Based on your interaction with THE LEADER during
 this exercise, given the opportunity, would you like to...

Get to know him/her better	DY	Y	NS	N	DN
Socialize with him/her at school	DY	Y	NS	N	DN
Meet him/her for lunch	DY	Y	NS	N	DN
Work with him/her on a school project	DY	Y	NS	N	DN
Become his/her friend	DY	Y	NS	N	DN

(circle your response to each item as it pertains to
 The other subordinate) Based on your interaction with THE OTHER
 SUBORDINATE during this exercise, given the opportunity, would
 you like to...

Get to know him/her better	DY	Y	NS	N	DN
Socialize with him/her at school	DY	Y	NS	N	DN
Meet him/her for lunch	DY	Y	NS	N	DN
Work with him/her on a school project	DY	Y	NS	N	DN
Become his/her friend	DY	Y	NS	N	DN

Based on your interaction with The leader during this task, please indicate below, for each item (by circling the most appropriate number), the extent to which each adjective listed below accurately describes this individual.

For example, the value "5" (as shown on the scale below) would indicate that the adjective "Honest" is a "Very Accurate" description of this individual:

	Very Inaccurate	Inaccurate	Somewhat Accurate	Accurate	Very Accurate
Honest	1	2	3	4	5

To what extent do each of the following adjectives accurately describe The leader?

	Very Inaccurate	Inaccurate	Somewhat Accurate	Accurate	Very Accurate
Intelligent	1	2	3	4	5
Lazy	1	2	3	4	5
Competent	1	2	3	4	5
Motivated	1	2	3	4	5
Valuable	1	2	3	4	5
Unproductive	1	2	3	4	5
Careless	1	2	3	4	5
Confident	1	2	3	4	5
Unfriendly	1	2	3	4	5
Capable	1	2	3	4	5
Deceitful	1	2	3	4	5
Unreliable	1	2	3	4	5
Pessimistic	1	2	3	4	5
Modest	1	2	3	4	5
Self-reliant	1	2	3	4	5

Based on your interaction with The other subordinate during this task, please indicate below, for each item (by circling the most appropriate number), the extent to which each adjective listed below accurately describes this individual.

To what extent do each of the following adjectives accurately describe The other subordinate ?

	Very Inaccurate	Inaccurate	Somewhat Accurate	Accurate	Very Accurate
Intelligent	1	2	3	4	5
Lazy	1	2	3	4	5
Competent	1	2	3	4	5
Motivated	1	2	3	4	5
Valuable	1	2	3	4	5
Unproductive	1	2	3	4	5
Careless	1	2	3	4	5
Confident	1	2	3	4	5
Unfriendly	1	2	3	4	5
Capable	1	2	3	4	5
Deceitful	1	2	3	4	5
Unreliable	1	2	3	4	5
Pessimistic	1	2	3	4	5
Modest	1	2	3	4	5
Self-reliant	1	2	3	4	5

Please respond to each of the following items (by circling your response) as it relates to the performance of The other subordinate on this task:

	Poor	Below Average	Average	Above Average	Outstanding
Quality of work	1	2	3	4	5
Quantity of work	1	2	3	4	5
Motivation	1	2	3	4	5
Problem solving ability	1	2	3	4	5
Interpersonal skills	1	2	3	4	5
Ability to work effectively on a group task	1	2	3	4	5
<hr/>					
OVERALL PERFORMANCE	1	2	3	4	5
***	***	***	***	***	***

Please respond to each of the following items (by circling your response) as it relates to the performance of The Leader on this task:

	Poor	Below Average	Average	Above Average	Outstanding
Quality of work	1	2	3	4	5
Quantity of work	1	2	3	4	5
Motivation	1	2	3	4	5
Problem solving ability	1	2	3	4	5
Interpersonal skills	1	2	3	4	5
Ability to work effectively on a group task	1	2	3	4	5
<hr/>					
OVERALL PERFORMANCE	1	2	3	4	5

*** *** *** *** *** *** *** *** *** *** ***

Please respond to each of the following items (by circling your response) as it relates to your own performance on this task:

	Poor	Below Average	Average	Above Average	Outstanding
Quality of work	1	2	3	4	5
Quantity of work	1	2	3	4	5
Motivation	1	2	3	4	5
Problem solving ability	1	2	3	4	5
Interpersonal skills	1	2	3	4	5
Ability to effectively lead a group task	1	2	3	4	5
OVERALL PERFORMANCE	1	2	3	4	5

Appendix K

Post

Name: _____

Date: _____

Group Number: _____

Task Components Self-Assessment

Please circle one response for each of the following twelve items.

- 1) I am ____ at solving word problems than at working with mathematical data.
(A) Much Better; (B) Slightly Better; (C) About the Same;
(D) Slightly Worse; (E) Much Worse.
- 2) I am ____ at leading a group than at solving word problems.
(A) Much Better; (B) Slightly Better; (C) About the Same;
(D) Slightly Worse; (E) Much Worse.
- 3) I am ____ at leading a group than at working with mathematical data.
(A) Much Better; (B) Slightly Better; (C) About the Same;
(D) Slightly Worse; (E) Much Worse.
- 4) Do you think you have an aptitude for solving word problems?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 5) Do you think you have an aptitude for working with mathematical data?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.

- 6) Do you think you have the ability to effectively lead a group?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 7) Given a chance to work on word problems, how well do you think you would do?
(A) Very Well; (B) Fairly Well; (C) Not Sure;
(D) Not So Well; (E) Not Well At All.
- 8) Given a chance to work with mathematical data, how well do you think you would do?
(A) Very Well; (B) Fairly Well; (C) Not Sure;
(D) Not So Well; (E) Not Well At All.
- 9) Given a chance to lead a group, how well do you think you would do?
(A) Very Well; (B) Fairly Well; (C) Not Sure;
(D) Not So Well; (E) Not Well At All.
- 10) Do you feel capable of effectively solving word problems?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 11) Do you feel capable of effectively working with mathematical data?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.
- 12) Do you feel capable of effectively leading a group?
(A) Definitely Yes; (B) Probably Yes; (C) Not Sure;
(D) Probably Not; (E) No.

Leader

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Appendix L1

Your Name: _____

Group: _____

Date: _____

For each of the items below please indicate (by circling the appropriate response) the extent to which YOU (the leader) exhibited the following behaviors during this exercise:

Using this scale:

- (1) Not at all
- (2) Seldom
- (3) Occasionally
- (4) Often
- (5) Most of the time

	Not at all	Seldom	Occasionally	Often	Most of the time
Sought the input of your subordinates	1	2	3	4	5
Gave orders	1	2	3	4	5
Actively listened to your subordinates ideas	1	2	3	4	5
Allowed your subordinates to make decisions	1	2	3	4	5
Consulted with your subordinates	1	2	3	4	5
Carefully considered opposing points of view	1	2	3	4	5
Controlled the behavior of the group members	1	2	3	4	5
Kept everyone involved in decision making	1	2	3	4	5
***	***	***	***	***	***

TO WHAT EXTENT WERE YOU ABLE TO ACCURATELY EXHIBIT THE LEADERSHIP STYLE WHICH YOU WERE ASSIGNED?

Not at All Very Little Somewhat Very Much Always

1 2 3 4 5

Subordinate

Your Name: _____ p. 272 **L2**

Group: _____

Date: _____

For each of the items below please indicate (by circling the appropriate response) the extent to which the leader exhibited the following behaviors during this exercise:

Using this scale:

- (1) Not at all
- (2) Seldom
- (3) Occasionally
- (4) Often
- (5) Most of the time

	<i>Not at all</i>	<i>Seldom</i>	<i>Occasionally</i>	<i>Often</i>	<i>Most of the time</i>
Sought the input of subordinates	1	2	3	4	5
Gave orders	1	2	3	4	5
Actively listened to subordinates ideas	1	2	3	4	5
Allowed subordinates to make decisions	1	2	3	4	5
Consulted with subordinates on decisions	1	2	3	4	5
Carefully considered opposing points of view	1	2	3	4	5
Controlled the actions of the group members	1	2	3	4	5
Kept everyone involved in decision making	1	2	3	4	5

APPENDIX M

BACKGROUND INFORMATION

Name: _____ (please print)

Group number in this exercise: _____ Date: ____/____/____

Sex: _____ Male _____ Female

(OPTIONAL INFORMATION)

How Much Full-time Work Experience Have You Had:

- _____ None
- _____ Less than 1 year
- _____ 1 to 2 years
- _____ 2 to 3 years
- _____ 3 to 4 years
- _____ 5 or more years

Age:

- _____ Less than 18
- _____ 18
- _____ 19
- _____ 20
- _____ 21
- _____ 22
- _____ 23 - 30
- _____ Greater than 30

Race:

- _____ Asian
- _____ Black
- _____ Hispanic
- _____ Native American
- _____ White
- _____ Other

Please complete for Lottery Drawing (Please Print);

Name: _____

Address: _____

Phone #: () _____

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