INCORPORATING IMPLICIT LEADERSHIP THEORIES INTO THE TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP FRAMEWORK

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(Abstract)

The role of implicit leadership theories within the framework of transformational and transactional leadership theory were examined. Two major issues were how implicit leadership theories (i.e., good, neutral, poor leader prototype) relate to specific leader behaviors (attributed charisma, idealized influence, individualized consideration, inspirational leadership, contingent reward, management-by-exception active/passive, laissez-faire leadership), and the combined influence of leader prototypes and behaviors on general job satisfaction, satisfaction with supervision, turnover intentions, and extra effort. Results were inconclusive with regard to the notion that leader prototypes and transformational, transactional, and laissez-faire leader behaviors are exemplified by a nonrecursive relation. Leader prototypes and specific behaviors combined to influence

work outcomes in either a full or partial mediation framework. Most often, the specific behaviors had a strong, direct influence on work outcomes. Leader prototypes indirectly influenced outcomes through the mediation of specific leader behaviors. The results are discussed in terms of the theoretical and practical benefits of actively incorporating implicit leadership theories into the transformational and transactional leadership framework, as well as the theoretical frameworks of other existing leadership models. It is argued that such an approach would result in a greater understanding of the leader-follower relationship and the overall leadership influence process.

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Introduction

A myriad of unprecedented organizational life changes are directly influencing the world of work (Casio, 1995), particularly the role of organizational leadership. In noting such changes, Hogan, Curphy, and Hogan (1994) called for a shift in leadership research and practice. They noted that leadership research and practice remains based on the historical concerns of the high school educated, white male working in manufacturing. However, projections for "workforce 2000" indicate an increase in women and minority representation, further shifts toward a service-based economy, and decreases in the overall skill and education levels of the workforce (Hogan et al., 1994). In addition, workforce projections foresee a greater emphasis on non-work activities (e.g., family and leisure), increased worker insecurity, and less organizational commitment and loyalty (Jamieson & O'Mara, 1991). Amid such change and uncertainty, employees often look to organizational leadership for guidance. In leadership, employees find the motivating impetus for continued organizational functioning and success (Katz and Kahn, 1978). It is sound leadership which will ultimately guide the workforce through tomorrow's changes. Yet, as Hogan et al. (1994) warn, leadership itself must change from its historical precedent to align with present day circumstances.

In addition to organizational life changes, external business pressures require leadership attention. In particular, increasing worldwide competition necessitates changes in traditional leadership policies and practices. For example, the current trend in organizational downsizing and restructuring has altered the role of many business leaders,

from first-line management through CEOs(Casio, 1995; Tichy & Devanna, 1986). Other external business pressures include compliance with governmental regulations (e.g., Americans with Disabilities Act) and ever expanding technological capabilities (e.g., computer advances, internet, etc.). In concert, these changing facets of the business environment, internal and external, pose a daunting challenge for all levels of organizational leadership: maintaining a productive, profitable business while simultaneously addressing the needs, concerns, and other factors of a changing workforce and work environment. As Casio (1995) notes,

> to survive, organizations have to be able to respond quickly to shifting market conditions. In this kind of an environment, a key job for all managers, especially top managers, is to articulate a vision of what the organizations stands for and what it is trying to accomplish. The next step is to translate that vision into everything that is done and to use the vision as a benchmark to assess progress over time (p. 930).

Leadership capable of addressing organizational challenges is necessary for success. Transformational leadership theory (Burns, 1978; Bass, 1985a) offers one intriguing perspective by which leaders might respond to present, and future, organizational changes. In brief, a transformational leader will "define the need for change, create new visions, mobilize commitment to the visions, and ultimately transform an organization" (p. 4; Tichy & Devanna, 1986). Bass (1990a) contends that "superior leadership performance" and organizational functioning results from utilization of a

transformational leadership style. This style encourages committed employees who view their jobs as satisfying and their leaders as effective. Furthermore, employees of transformational leaders report greater willingness to exert extra effort towards accomplishing work objectives (Bass, 1990a; 1990b). As presented, transformational leaders can simultaneously meet the organizational challenge of helping ensure competitiveness and profitability, while satisfying the needs and goals of employees.

Generally studied within the transformational leadership framework is transactional leadership (Bass, 1985a). According to Bass (1985a), transactional leaders engage subordinates in an exchange of rewards and benefits for successful work performance. This style of leadership represents the basic fulfillment of role requirements established under the condition of employment (Katz & Kahn, 1978). Hence, transactional leadership remains necessary for organizational functioning, although Bass (1985a) contends that strict adherence to this style suffices only to maintain the organizational status quo. However, in view of the impending organizational life and business changes highlighted above, organizations maintaining the status quo face the prospect of failure.

Given its broad theoretical appeal, researchers have begun to examine the predictions and implications of transformational and transactional leadership theory[1]. Recent empirical evidence supports the utility of transformational and transactional

[1] Recently, transformational and transactional leadership principles are studied within the same context. Although conceptually separate theories, they are labeled as an unified approach to leadership for convenience (e.g., transformational and transactional leadership theory) throughout the text. However, as the literature review shows, different predictions flow from transformational versus transactional leadership.

leadership styles across multiple leadership levels, such as among top-management (e.g., Niehoff, Enz, & Grover, 1990) and student project leaders (Avolio, Waldman, & Einstein, 1988), and among various populations, including military personnel (e.g., Yammarino, Spangler, & Bass, 1993), police officers (e.g., Deluga & Souza, 1991; Singer & Singer, 1990), students (e.g., Avolio et al., 1988; Bass & Avolio, 1989), business managers (e.g., Avolio & Yammarino, 1990; Seltzer & Bass, 1990), chief executive officers (e.g., Ehrlich, Meindl, & Viellieu, 1990), and secondary school educators (e.g., Kirby, King, & Paradise, 1992). Furthermore, Bass (1985a) argues that these leadership styles apply equally and effectively in crisis and non-crisis situations. Regardless of the specific organizational exigencies, a transactional leader maintains the overall level of organizational functioning, and a transformational leader elevates this level of functioning (Bass, 1985a).

Additionally, research has demonstrated that transformational and transactional leadership positively and substantially influences valued organizational and work outcomes. Thus far, research supports the positive influence of transformational and transactional leadership on such work outcomes as satisfaction with leaders (e.g., Bass & Avolio, 1989), rated effectiveness of work group and leaders/managers (e.g., Hater & Bass, 1988), commitment and reduction in role ambiguity (e.g., Niehoff et al., 1990), organizational citizen behaviors (e.g., Podsakoff, MacKenzie, Moorman, & Fetter, 1990), extra effort in accomplishing work objectives (e.g., Ehrlich et al., 1990), performance (e.g., Yammarino et al., 1993; Waldman, Bass, & Einstein, 1987), turnover intentions (Bycio, Hackett, & Allen, 1995), and employee upward influencing behaviors (Deluga,

1988; Deluga & Souza, 1991). However, the role of other leadership styles on similar outcomes is often equally regarded in the literature. Thus, to provide a viable, preferable alternative to current leadership styles, transformational and transactional leadership theory must be thoroughly assessed in terms of its overall utility.

Examining the relationship between transformational and transactional leadership theory and other leadership perspectives provides a means to assess the overall utility of transformational and transactional leadership theory. For example, Seltzer and Bass (1990) found that transformational leader behaviors add significantly to initiating structure and consideration behaviors in explaining variance in subordinate satisfaction with leaders and their ratings of leader effectiveness. Similarly, Bass (1985a; Hater & Bass, 1988) maintains that transformational leader behaviors augment the effects of transactional behaviors. Thus, the most effective leaders display both transactional and transformational behaviors for maximum effectiveness (Bass & Avolio, 1989).

An evaluation of transformational and transactional leadership theory should also consider the role afforded to followers/subordinates. Hollander (1992) advocated a more active role for followers in understanding the leadership process. Particularly, understanding leadership influence requires knowledge of how followers perceive and react to leaders. Furthermore, the entire leader-follower interaction occurs within a specific context that exerts influence over the quality and nature of leadership that is experienced. While Bass (1985a) notes that transformational leaders elicit strong affective responses from subordinates, little attention is given to the potential influence of follower's

general impressions of their leaders and how these impressions influence receptivity to leadership influence attempts. This represents a major limitation in an otherwise compelling theory.

Given this limitation, the proposed study investigates the relation between transformational and transactional leadership theory and implicit leadership theory (Eden & Leviatan, 1975; Gioia & Sims, 1985; Phillips & Lord, 1981). Implicit leadership theory maintains that individualized beliefs (often unconscious) about leaders directly influence perceptions of leader behaviors and attributes (Gioia & Sims, 1985). Furthermore, employees react to their implicit leader theories, as well as explicit leader behaviors. Several studies addressed the relation between these respective leadership theories (e.g., Atwater & Yammarino, 1993; Bass & Avolio, 1989; Kirby et al., 1992); however, the research lacks a comprehensive and direct test of the role of implicit leader theories within the transformational and transactional leadership paradigm. Examining this issue will provide a better understanding of the transformational and transactional leadership process, and thus the utility of this leadership perspective.

The importance of evaluating the role of implicit leadership theories in leadership research is well-documented (Gioia & Sims, 1985; Offermann, Kennedy, & Wirtz, 1994; Philips & Lord, 1986). Gioia and Sims (1985) noted the prevalence of evidence supporting the effect of implicit theories in perceptual-based investigations of leadership. Given that the assessment of transformational and transactional leadership relies on the perceptual processes of subordinates, ignoring the influence of implicit

leadership theories potentially confounds interpretations from this line of research (Phillips & Lord, 1986) and hinders the understanding of the leadership process (Offermann et al., 1994). For example, Lord and his colleagues (e.g., Lord, Binning, Rush, & Thomas, 1978; Phillips & Lord, 1981; Rush, Thomas, & Lord, 1977) found that implicit leader theories account for substantial variance (up to 40%) in initiating structure and consideration measures. Failure to account for such influence would constitute a major omission if leader behaviors were considered the sole influence on work outcomes. Due to the potential effects on the interpretations from empirical research, the role of implicit leadership theories in relation to transformational and transactional leadership theory represents an important avenue of investigation (Kirby et al., 1992). Once understood, the applicability of transformational and transactional leadership for guiding organizations into the 21st century can be evaluated more fully.

Regardless of the internal or external influences on the work environment, organizational leadership ultimately takes the lead role in facilitating business success. The changing work environment has increased the interest in leadership policies and practices consistent with transformational and transactional leadership theory. By meeting the needs of employees and organizations through the creation of common cause and commitment, transformational leaders can potentially provide the impetus to ensure business success from both organizational and employee perspectives. Yet, leadership influence is not unidirectional; follower influence on leadership must also be addressed.

When viewed in concert, the result is likely a better understanding of organizational leadership.

The following literature review (1) describes transformational and transactional leadership theory with particular emphasis on empirical tests of this theory; (2) provides an overview of empirical investigations of implicit leadership theories; (3) reviews research related to the role of implicit leadership theories within the framework of transformational and transactional leadership theory; and (4) presents the study overview and hypotheses.

Literature Review

Overview

Within a political science paradigm, Burns (1978) originally described transactional and transformational leadership. According to Burns, transactional leadership occurs when a leader and follower enter into an exchange process to maximize individually valued outcomes. Conversely, transformational leadership occurs when a leader induces a follower to transcend personally desired outcomes for the greater good of a defined group. Burns' conceptualization placed these approaches at opposite ends of a continuum with transactional leadership representing the least effective form of leadership. Pointedly, Burns (1978) argued that transactional leadership represents a "short-lived relationship because sellers [leaders] and buyers [followers] cannot repeat the identical exchange; both must move on to new types and levels of gratification" (p. 258). Thus, transactional leadership requires continuous negotiation of exchanges over time. On the other hand, transformational leadership operates independent of the negotiation process altogether.

Bass (1985a) adopted the basic tenets of transformational and transactional leadership outlined by Burns (1978) and applied them to organizational leadership. For transactional leadership, Bass similarly noted that the leader-follower relationship revolves around an exchange for desired outcomes. Specifically, Bass suggested transactional leaders motivate and influence followers via the (a) use of contingent rewards and incentives, as well as by (b) clarifying what work needs to be done in order to obtain

desired rewards and benefits (Yukl, 1989). For transformational leadership, Bass concentrated on affective reactions of followers. Accordingly, transformational leaders elicit better performance by evoking subordinate trust, respect, commitment, and extra effort towards articulated group/organizational goals or visions (Bass, 1985a).

The perspectives of both Burns (1978) and Bass (1985a) rely on the interplay between leader actions and follower reactions (Kuhnert & Lewis, 1987). Hence, in addition to leader behaviors, follower perceptions and reactions occupy an important role in understanding the leadership process (Bass, 1981; Dienesch & Liden, 1986). The distinguishing factor between the views of Burns and Bass is that Bass conceptualizes transformational and transactional leadership as often overlapping in operation.

Defining Transactional Leadership

Transactional leadership emphasizes the bargaining relationships between management and subordinates. As such, this view emanates from a social exchange perspective (Hollander, 1992); namely, in exchange for benefits (e.g., role clarification, pay), followers work towards accepted organizational and group objectives. This leadership perspective is aptly exemplified in the cliché "a fair day's pay for a fair day's work."

The effectiveness of transactional leaders depends on several factors. First, the transactional leader must be capable of delivering those outcomes desired by subordinates (Bass, 1985b; Dienesch & Liden, 1986). For example, leaders who lack sufficient power, resources, or credibility for producing desired rewards upon successful

subordinate performance lose their influencing potential in the exchange process. Second, subordinate perceptions and ensuing reactions influence leader effectiveness (Hollander, 1992). Hollander suggests that expectations, perceptions, and attributions about leaders shape the quality and nature of leader-follower interactions. For example, the leader-member exchange literature demonstrates that in-group and out-group members experience different relation with leaders (Dienesch & Liden, 1986; Liden & Graen, 1980; Scandura & Graen, 1984).

Bass (1985a) originally defined two dimensions of transactional leadership: contingent reward behavior and management-by-exception. Contingent reward entails the exchange of rewards for follower effort and successful performance. Management-by-exception (MBE) is when attempts to influence follower performance occurs only when subordinate performance standards are not met. In some subsequent studies, MBE has been divided into active and passive components (e.g., Yammarino et al., 1993), thus creating three dimensions defining transactional leadership. Active MBE occurs when leaders actively search for negative performance incidents and then issue reprimands or punishment as a means of affecting successful performance. Passive MBE is aptly defined by the cliché "if it ain't broke, don't fix it".

In some respects, transactional leadership operates similarly to the well-documented leadership perspectives of initiating structure and consideration (see Ehrlich et al., 1990); however, Bass' (1985a) conceptualization of transactional leadership explicitly allows for the followers role in the leadership process. Similarly, while aspects

of transactional leadership embody a necessary component of effective leadership, many researchers criticize strict adherence to this style (e.g., Avolio et al., 1988; Bass, 1985a). As generally stated, transactional leadership suffices to maintain the status quo (Bass, 1985a). Clearly, maintaining the status quo is a prescription for organizational mediocrity or failure in the face of increasing global competition and changing labor force exigencies (Tichy & Devanna, 1986). Furthermore, as noted above, factors extraneous to a leader or the organization may minimize a transactional leader's effectiveness.

Defining Transformational Leadership:

Both Burns (1978) and Bass (1985a) regard transformation leadership as necessary for superior organizational functioning. Similarly, Niehoff et al. (1990) described transformational leaders as capable of elevating subordinate performance beyond simple compliance with the employment contract. According to Yukl (1989),

> a leader can transform followers by: (1) making them more aware of the importance and value of task outcomes, (2) inducing them to transcend their own self-interest for the sake of the organization or team, and (3) activating their higher-order needs (p. 211).

Through such mechanisms, a transformational leader facilitates greater accomplishments from his/her subordinates than a strict transactional leader.

Bass (1985a) originally identified three dimensions of transformational leadership: charismatic/inspirational appeal, individualized consideration, and intellectual stimulation. The charismatic/inspirational appeal dimension entails leader characteristics

and behaviors which generate a strong, affective identification with a leader. Examples of follower responses to charismatic/inspirational leaders include: emulation of leader behaviors; belief in and identification with leaders; support and acceptance of leader's values and visions; and emotional commitment to the leader's articulated goals (Avolio et al., 1988).

The charismatic/inspirational appeal dimension closely aligns with the notion of charismatic leadership (Conger & Kanungo, 1987; House & Podsakoff, 1984; Katz & Kahn, 1978). For example, Conger and Kanungo (1987) note that the influence of a charismatic leader evolves from the interplay between leader attributes and follower needs, perceptions, and attributions. Modeling desired behaviors, articulating ideological goals, communicating high performance expectations, and nurturing subordinate confidence exemplify typical behaviors associated with transformational and charismatic leaders (Ehrlich et al., 1990).

Individualized consideration deals with a leader's focus on the unique needs and goals of subordinates (Bass, 1985a). This dimension originates from the vertical dyad linkage theory (Graen & Cashman, 1975) and, unlike the widely utilized consideration factor from the Ohio leadership studies (Stogdill, 1974), individualized consideration pertains to the dyadic leader-member exchange as opposed to group based, general consideration behaviors (Ehrlich et al., 1990). Seltzer and Bass (1990) provide support for the empirical and conceptual distinction between individualized consideration and the traditional leader consideration construct.

The intellectual stimulation dimension of transformational leadership refers to leader behaviors which enhance subordinate creativity and successful implementation of novel approaches to accomplishing work objectives (Seltzer & Bass, 1990). Intellectually stimulating leaders arouse confidence and the ability of subordinates to creatively address problems as a means of improving productivity and job performance (Bass, 1985a).

More recently, the transformational factors have been expanded to include five dimensions (Bass, 1990; Bass & Avolio, 1991). Namely, attributed charismatic and inspirational leadership are now distinct, though similar dimensions, with the former style involving more subordinate identification with a leader and the latter style inducing greater subordinate action through communication and appeal processes. Additionally, Bass and Avolio (1991) had added idealized influence, which pertains to a transformational leaders ability to mobilize subordinates toward ideology objectives and visions pursued by the organization.

Based on these dimensions, transformational leadership theoretically exceeds both charismatic leadership and transactional leadership in terms of the quality of the leader-member exchange, the attributes of the leader, and how subordinates positively respond to and are influenced by a leader.

Operationalization of the Transformational and Transactional Leadership Constructs

Bass (1985a; 1985b) describes the initial research aimed at operationalizing the transformational and transactional leadership constructs. In study one, Bass provided a description of transformational leadership to 70 executives who subsequently described a

transformational leader whom they had encountered in their careers. These descriptions revealed that transformational leaders were regarded as ideological "giants" capable of inducing extra hours of work, promoting higher awareness and quality of work performance, and instilling commitment to and belief in the goals of their respective organizations. Furthermore, these executives described transformational leaders using positive terms such as fair, supportive, stimulating, accessible, trustworthy, and willing to take risks.

In a follow-up study, Bass utilized the descriptions from study one to devise a questionnaire and subsequently administered it to 176 US Army officers. Factor analysis produced five conceptually distinct factors. As defined above, the transactional leadership factors (contingent reward and management-by-exception) and the transformational leadership factors (charismatic/inspirational appeal, individualized consideration, and intellectual stimulation) represented the initial operationalization of these leadership perspectives. This basic structure of transformational and transactional leadership, as measured by the Multifactor Leadership Questionnaire (MLQ), was replicated across various samples (see Bass, 1985a; 1985b).

Bass' original work also revealed that the transformational leadership factors had higher, positive correlations with outcomes such as perceived unit effectiveness, subordinate satisfaction, and effort than the transactional factors (Bass, 1985a; 1985b). For transactional leadership, contingent reward had a moderate, positive correlation with these outcomes, while management-by-exception had low or negative relations with them.

Bass (1985a; 1985b) reports similar findings obtained with samples of 256 business managers, 23 educational administrators, and 43 professionals. Based on such findings, management-by-exception is ineffective; conversely, charismatic/ inspirational appeal, individualized consideration, intellectual stimulation, and contingent reward positively relate to work outcomes. Charismatic/inspirational appeal had the strongest relation with these work outcomes.

Following the pioneering work of Bass, researchers have investigated many aspects of transformational and transactional leadership theory (e.g., Atwater & Yammarino, 1993; Avolio et al., 1988; Bass & Avolio, 1989; Bass, Avolio, & Goodheim, 1987; Deluga, 1988; Deluga & Souza, 1991; Ehrlich et al., 1990; Hater & Bass, 1988; Kirby et al., 1992; Podsakoff et al., 1990; Singer, 1985; Singer & Singer, 1990; Waldman & Bass, 1987; Yammarino & Bass, 1990; Yammarino et al., 1993). This research further defined the domain, operation, and utility of transformational and transactional leadership principles. This research is reviewed below.

Empirical Investigations of Transformational and Transactional Leadership

Singer (1985) investigated the relation between an actual and ideal supervisor's rated transformational and transactional leader behavior and perceived leader and work group effectiveness and job satisfaction. With managers from a New Zealand company, results demonstrated that transformational leadership factors correlated more than transactional leadership factors with effectiveness and job satisfaction, while the discrepancy between ideal and actual ratings negatively related to these outcomes. In

addition, respondents overwhelmingly preferred working with transformational as opposed to transactional leaders (cf., Singer & Singer, 1986; 1990). Management-by-exception had a weak relation with the measured outcomes (Singer, 1985).

In a similar study, Niehoff et al. (1990) evaluated the effects of five transformational behaviors (developing/sharing a vision, modeling that vision - i.e., management visibility, encouraging innovations, supporting employee efforts, and encouraging employee input into decisions) on employee commitment, job satisfaction, and role ambiguity in an insurance company. Results showed that employee perceptions of top-management transformational behaviors (particularly sharing a vision and supporting employee efforts) related to an increase in commitment and job satisfaction, as well as a reduction in role ambiguity.

Interestingly, Niehoff et al. (1990) found differences between the field and home-office employees. Among home-office employees, all five transformational behaviors related positively to the outcomes; however, for field employees, top management visibility and encouragement of innovation failed to influence either commitment, job satisfaction, or role ambiguity. Likewise, top management support did not influence job satisfaction for field agents. Niehoff et al. interpreted these differences in terms of differences between the home-office employee and field agent accessibility to top management and office technology. The finding of such differential impact of leader behaviors across jobs (cf., Singer & Singer, 1990) suggests the need to explore potential

mediators, moderators, or other boundary conditions affecting the influence of transformational and transactional leadership behaviors on work outcomes.

Podsakoff et al. (1990) explored the mediating potential of trust (Yukl, 1989) and satisfaction with a leader in the relations between transformational and transactional leader behaviors and the organizational citizenship behaviors (OCBs) of subordinates. Podsakoff et al. measured six transformational leader behaviors (articulating a vision, providing an appropriate model, fostering acceptance to group goals, maintaining high performance expectations, providing individualized support and intellectual stimulation), as well as contingent reward behavior. A total of 988 petrochemical company employees provided measures of leadership, trust in respective leader and satisfaction. In addition, employee supervisors rated their respective subordinates on the OCB measures of altruism, conscientiousness, courtesy, civic virtue, and sportsmanship.

Results from Podsakoff et al. (1990) showed that transformational behaviors influenced both employee trust and satisfaction, but had no direct influence on OCBs. In turn, employee trust, but not satisfaction, influenced OCBs. Conversely, contingent reward behavior did not influence employee trust or satisfaction, but directly influenced altruism and sportsmanship. Thus, aside from establishing marginal support for the proposed mediating effects of trust on transformational behaviors, these results indirectly support the distinctiveness of the transformational and transactional leadership. That is, given the differential relationships (mediated versus direct) between the influence of transformational and transactional behaviors on OCBs, Podsakoff et al. (1990) provided

additional empirical evidence supporting the distinction between these leadership constructs.

Hater and Bass (1988) examined another important hypothesis stemming from transformational and transactional leadership theory. Specifically, they investigated the augmentation effect of transformational leader behaviors over transactional leader behaviors (Bass, 1985a) in influencing multiple outcomes. In addition, Hater and Bass (1988) explored differences in the hypothesized relations among top performing versus average performing managers. Using regression analyses, they demonstrated that transformational leader behaviors were better predictors of subordinate ratings of effectiveness and satisfaction than transactional leader behaviors. Furthermore, transformational factors significantly increased prediction of these outcomes beyond that of transactional factors as suggested by the augmentation effect hypothesized by Bass (1985a).

The Hater and Bass (1988) study also revealed that top performing managers utilized more transformational leader behaviors (charismatic leadership and individualized consideration) when compared to ordinary managers. Top and ordinary performing managers did not differ significantly on ratings of transactional behaviors.

As with Podsakoff et al. (1990), Hater and Bass (1990) underscored the potential for differential effects of transformational and transactional leader behaviors on work outcomes according to different levels of a third variable (i.e., subordinate job and leader performance). These findings disclose possible moderated effects (see Baron &

Kenny, 1986 for discussion). Additionally, these studies expanded the range of outcomes investigated in relation to transformational and transactional leadership (e.g., performance and OCBs). Particularly important, Hater and Bass (1990) demonstrated a relation between transformational and transactional leader behaviors and work performance, a fundamental concern for all organizations.

A related issue is the relation of transformational (and transactional) leadership with other leadership perspectives. Seltzer and Bass (1990) explored the connection between transformational leadership, initiating structure, and consideration behaviors on work outcomes utilizing 55 target leaders and 138 subordinates. Hierarchical regressions demonstrated that transformational behaviors add significantly to explained variance in outcomes when added to regressions after initiation and consideration behaviors. The reverse, adding transformational factors first, failed to produce similar incremental explanation in outcome variance. Thus, transformational leader behaviors augment the effects of leader initiation and consideration behaviors. This augmentation effect has also been observed with the other dimensions measured by the LBDQ (Ehrlich et al., 1990).

As shown by the research described above, the basic propositions of transformational and transactional leadership have received vast empirical support. To summarize, transformational leader behaviors relate significantly to various outcome measures, including satisfaction, leader and work group effectiveness, extra effort, performance (subordinate and superior ratings), and OCBs. Additionally, research

demonstrates that transformational leader behaviors augment the effects of contingent reward behavior as postulated by Bass (1985a). Management-by-exception consistently had low to negligible relations with outcomes. Research findings also suggests the simplistic leader behavior-outcome relation may neglect possible mediators or moderators. Finally, transformational leader behaviors "go beyond" the effects of other leadership styles highly regarded in the leadership literature. The benefits of transformational and transactional leadership become more evident in comparison to leaders utilizing quite opposite styles, such as laissez-faire leadership.

Laissez-faire Leadership

Counter to transformational leadership is laissez-faire leadership. Actually, laissez-faire leadership is a misnomer in that it represents a perspective directly opposite from the active roles taken by transformational leaders (Bass, 1990a). Laissez-faire leaders abdicate responsibility for influencing subordinate actions and other leadership roles, as well as avoid decision making altogether (Bass, 1981). In this sense, laissez-faire leaders are even more inactive than management-by-exception leaders. Thus, a laissez-faire leader ignores even the most disruptive, problematic subordinate or situation.

Laissez-faire leadership correlates negatively with charismatic and inspirational leadership, individualized consideration, intellectual stimulation, and contingent reward factors (Bass, 1985a). Furthermore, research typically reports negative correlations between laissez-faire leadership and the work outcomes often studied in transformational and transactional leadership research (Bass, 1990a; House & Podsakoff,

1994; Yammarino et al., 1993). For example, laissez-faire leadership relates negatively to work performance (Yammarino et al., 1993), satisfaction with supervision (Kirby et al., 1992), and leader effectiveness (Avolio & Yammarino, 1990).

In the current study, assessment of laissez-faire leadership occurs primarily for two reasons. First, because earlier and current versions of the MLQ contain a measure of laissez-faire leadership, earlier studies using the MLQ report findings related to this construct. As shown below, the initial phase of this study seeks to replicate existing findings; hence, the laissez-faire leadership relations with work outcomes found in other studies will be replicated as well. Second and most importantly, laissez-faire leadership provides a base-line, or control perspective, against which to assess the beneficial effects on work outcomes of transformational and transactional leadership behaviors.

Methodological/Conceptual Concerns with Transformational and Transactional Leadership

As briefly noted above, some methodological and conceptual shortcomings exists with transformational and transactional leadership theory despite substantial empirical support. Primary concerns expressed by researchers include the lack of longitudinal designs (Yammarino et al., 1993), use of same source data (Hater & Bass, 1988), confusion over the applicable level of analysis (Yammarino & Bass; 1990), and the potential influence of implicit leadership theories (Bass & Avolio, 1989; Kirby et al., 1992). As shown below, only the concern over the role of implicit leadership theories has yet to receive satisfactory redress in empirical investigation.

Yammarino et al. (1993) addressed the lack of longitudinal designs and the use of a single data source in empirical investigations. This study had multiple raters complete different instruments (measuring the same constructs) at different points across time. Results revealed significant, positive relations between the transformational leader behaviors of military officers and their performance ratings as provided by subordinates and superiors. While transactional leader behaviors failed to relate to these performance measures, Yammarino et al. (1993) attributed this lack of relation to the sample of junior officers lacking control over rewards and benefits under military regulations. As previously noted, the effectiveness of contingent reward behavior partly depends on a leaders ability to provide valued rewards (Dienesch & Liden, 1986).

In response to the design and single data source concerns, Yammarino et al. (1993) demonstrates the resilience of transformational leadership predictions against these criticisms. Indeed, several of the previously described studies also utilized multisource data (e.g., Hater & Bass, 1988; Podsakoff et al., 1990). These results allow for greater confidence in the basic propositions of transformational and transactional leadership theory.

Yammarino and Bass (1990) investigated the level of analysis (i.e., individual, dyadic, group, or null) at which transformational and transactional leadership operates utilizing WABA procedures (see Markham, 1988; Yammarino & Markham, 1992). This procedure compares the stability of leader-follower relation across groups, within groups, and individually. High degrees of variability both between and within groups occurred in

evaluating the variable relations. Thus Yammarino and Bass (1990) concluded that leader-follower influence under the transformational and transactional leadership paradigm results primarily from an individual differences or an information-processing perspective. Therefore,

> the qualities or characteristics of a leader that generate admiration and respect in some subordinates can breed contempt and distrust in others. Likewise, an attempt to inspire subordinates may be viewed by some as spirited encouragement or support and by others as pure hokum (Yammarino & Bass, 1993; p. 991).

Similar findings are reported by (Avolio & Yammarino, 1990) and help guide the understanding and implementation of transformational and transactional leadership principles.

Finally, research suggests that transformational and transactional leadership evokes the influence of implicit leader theories (e.g., Atwater & Yammarino, 1993; Bass & Avolio, 1989; Kirby et al,. 1992). Specifically, some researchers concede the possible operation of implicit leadership theories in the context of the transformational and transactional leadership framework (Bass & Avolio, 1989; Puffer, 1990). However, most studies fail to provide a comprehensive assessment of this possibility. It remains essential to fully evaluate the potential influence of implicit leadership theories, particularly in questionnaire-based studies (Phillips & Lord, 1986). To the extent that such influence occurs, the interpretations offered from empirical investigations of transformational and transactional leadership may be misstated. Furthermore, an important factor (i.e., implicit

leadership theories) in understanding influence within the transformational leadership and transactional leadership paradigm may be overlooked. Before addressing these points in detail, a brief overview of implicit leadership theories is provided the next section.

Implicit Leadership Theories

Phillips and Lord (1981) observed that individuals interpret leader behaviors into personalized, subjective realities of leadership commonly referred to as implicit leadership theories. The development of individual implicit leadership theories results from stable beliefs about the attributes and behaviors of leaders, as well as outcomes of leadership (Phillips & Lord, 1981). Such beliefs operate under an information-processing paradigm (Lord, Foti, & DeVader, 1984) and help simplify the processing demands required in cognitively intense interactions. For example, in investigating the leadership categorization model, Lord et al. (1984) demonstrated that implicit leadership theories allow for the differentiation of leaders and non-leaders by matching leader attributes with a defining set of stable, salient attributes (called prototypes) typical of leaders or non-leaders. Once a leader is classified, followers often react on the basis of the prototype, and not necessarily the actual leader behavior.

Implicit leadership theories are regarded as particularly operative in questionnaire-based leadership investigations (Bryman, 1987; Gioia & Sims, 1985; Rush, Thomas, & Lord, 1977; Phillips & Lord, 1986), including investigations of transformational and transactional leadership (Kirby et al., 1992). Research demonstrates that implicit leadership theories influence the descriptions of leaders (Bryman, 1987; Gioia

& Sims, 1985; Rush & Russell, 1988). As Bryman (1987) states, "such evidence is damaging to research that relies on questionnaires because it implies that it is individual implicit theories that are being measured (and subsequently related to particular outcomes like subordinate satisfaction or group performance) rather than the behavior of leaders as such" (p. 130). This suggests that implicit leader theories influence work outcomes in a fashion similar to the leader behaviors being measured by leadership questionnaires.

Investigating implicit theories generally occurs through examining their structure and/or dynamics of operation (Guzzo, Wagner, Maguire, Herr, & Hawley, 1986). Guzzo et al. (1986) defined structure as the behavioral, trait, or other elements comprising implicit leadership theories and how these elements relate. The operation of implicit leadership theories concerns their consequences for work outcomes.

Eden and Leviatan (1975) provided an early investigation of the structure of implicit leadership theories. Under a limited information paradigm, students completed the "Survey of Organizations" questionnaire which measures leader support, interaction facilitation, goal emphasis, and work facilitation. The only instructions provided to student raters was to describe a manager of an unknown plant. Factor analytic results replicated the known structure of the questionnaire, accounting for 55% of the item variance. Eden and Leviatan obtained similar results when comparing various subsamples of these students.

The systematic ratings obtained by Eden and Leviatan (1975) are unlikely to occur without some previous conceptualization of leadership and leader behaviors, thereby

suggesting students relied on their implicit leadership theories in this task. As these authors note,

> if the same pattern of covariation obtained when members describe their own organizations can also be obtained when respondents complete the same questionnaire under instructions to rate a fictitious organization, the conclusion that the factor structures was brought "in their heads" to the data collection situation [is] unavoidable (p. 737).

Hence, Eden and Leviatan (1975) concluded that the impact of implicit leadership theories raises serious concerns for the validity of questionnaires purporting to measure actual leader behaviors. Leadership questionnaires possibly measure leader behaviors, implicit leadership theories, or a combination of both.

Weiss and Adler (1981) replicated the Eden and Leviatan (1975) results. Additionally, Weiss and Adler investigated the factor structure of the "Survey of Organizations" across groups differing in cognitive complexity. Lack of differences in factor structures across groups based on cognitive complexity levels supports the notion that individual implicit leadership theories reflect a "social reality" regarding perceived relations among leader behaviors and not differences in perceptual organization ability. Eden and Leviatan (1975) explicitly refuted the former interpretation, arguing that without a measure of social reality one can not assume a connection with implicit theories.

Weiss and Adler (1981) found that the basic factor structure failed to vary across cognitive complexity groups determined by median split, or when comparing

individuals in the top and bottom 40%, or 33%, of the distribution on the cognitive complexity measure. Hence, Weiss and Adler (1981) provided a conservative interpretation, suggesting implicit leadership theories operate somewhere between reflecting "social reality" and individual cognitive constructs. They suggested the effects of implicit leadership theories depend on various circumstances, such as contextual cues, degree of contact between leader and follower, and the importance (for raters) of accurately describing a target's (i.e., focal leader) behavior.

In a related investigation, Rush et al. (1977) explored the role of implicit leadership theories on both the factor structure and level of the LBDQ-XII. Factor level refers to the actual ratings ascribed to a leader and addresses the operation of implicit leadership theories. In a limited information paradigm, Rush et al. (1977) manipulated contextual information depicting good, neutral, or poor leader performance. Student responses to the LBDQ-XII were factor analyzed, and then their subscale scores were used as dependent variables in an analysis of variance (ANOVA).

Rush et al. (1977) replicated the known factor structure of the LBDQ-XII. This factor structure paralleled those from other studies which varied from little/no to a substantial amount of familiarity between leader and follower(s). In terms of factor level, the performance cue (i.e., good, neutral, or poor) main effect for the ANOVA was significant for both the consideration and initiating structure subscales. "Good performance" target leaders received higher consideration and initiating structure ratings than "bad performance" targets. This finding also occurred for the other subscales of the

LBDQ-XII (e.g., representation, reconciliation, tolerance of uncertainty, persuasion, etc.). By showing that raters rely on implicit leader theories to reduce the processing requirements in perceiving leader behaviors, this study suggests that leader behavior questionnaire measures may reflect actual leader behaviors, as well as perceptual-memory processes (Fraser & Lord, 1988; Larson, Lingle, & Scerbo, 1984; Mitchell, Larson, & Green, 1977; Rush et al., 1977).

A natural question stemming from the above noted studies concerns the relative effect of actual behaviors versus implicit leadership theories on leader behavior descriptions. Lord et al. (1978) investigated this question by varying both target behavior (i.e., initiating structure) and performance cues. After observing videotaped leaders in action, subjects received performance information and subsequently completed LBDQ ratings of the target leader. ANOVA results revealed both a significant main effect for leader behavior and performance cue effects accounting for 53% and 7%, respectively, of the variance in initiating structure ratings (Lord et al., 1978). The high performance conditions (based on behavioral or performance cues) resulted in higher mean ratings on all subscales of the LBDQ when compared with the low performance conditions.

An important note from the Lord et al. (1978) study concerns interaction effects in multivariate analyses. A significant multivariate leader behavior by performance cue interaction only materialized in the representation subscale at the univariate level. Lord et al. (1978) concluded that

> more noteworthy is the nonsignificance of the interaction for all the other LBDQ scales, which indicates that the level of stimulus behavior generally had little impact on adjustments in ratings to accommodate contextual cues. This fact coupled with significant main effects for both the performance and behavioral factors indicates that reliance on performance cues [implicit leadership theories] was not merely a substitute for behavioral information (pp. 33-34).

Hence, although accounting for greater variance in outcome ratings, behavioral information fails to negate rater use of implicit leadership theories (Fraser & Lord, 1988). Lord et al. (1978) demonstrated that as the behaviors measured in the LBDQ subscales diverged in similarity from the behaviors manipulated in the actual stimulus (i.e., initiating structure), the variance explained by the behavior manipulation decreased. The variance accounted for by the performance cue manipulation remained consistently moderate across all subscales. That is, followers use implicit theories in reacting to leaders, regardless of whether explicit behavioral information exists.

Finally, Pfeffer (1977) argues that leadership is largely an attribution process whereby observers attempt to ascribed causality to individuals. From this perspective, individual need to control the environment induces attributions of leaders as causal agents for organizational outcomes (Kelley, 1971; cited in Pfeffer, 1977). This hypothesis argues against the existence of implicit leadership theories. For example, the findings presented above would be explained in terms of causal attribution processes and eliminate the need

to evoke implicit leadership theories. Only by disproving their existence can implicit theories be ignored in perceptual-based leadership research.

Phillips and Lord (1981) compared the causal attribution perspective against the implicit leadership perspective during an investigation of leadership perceptions. Both performance cues and available alternative causal explanations for performance were manipulated under the rational that the former manipulation would elicit use of implicit leadership theories, and the latter causal attributions. Observers viewed four-person problem solving groups which varied in performance (good versus poor), received the causal attribution manipulation, and then completed leader description measures.

Results supported the role of implicit leadership theories over the causal attribution perspective. Phillips and Lord (1981) found that performance feedback accounted for the most variance in leader behavior and general leadership impressions ratings. Furthermore, general leadership impressions, more than causal assessments, mediated the effects of leadership ratings. Although not discounting the role of causal attributions, Phillips and Lord (1981) interpreted their results as consistent with cognitive processes responsible for formulating leadership impressions (i.e., implicit leadership theories; Cronshaw & Lord, 1987; Lord et al., 1984).

This discussion of implicit leadership theories highlights their existence and capacity to influence leadership perceptions, and thus the leadership process. In addition, empirical evidence demonstrates that implicit leadership theories operate similarly in rating group-level processes and performance (Guzzo et al., 1986; Martell & Guzzo, 1991). For

example, Martell and Guzzo (1991) observed the performance cue effect in group evaluative ratings.

Given the above noted research, much of the approach towards implicit leadership theories have sought to control and/or eliminate their influence (Gioia & Sims, 1985; Phillips & Lord, 1986). For example, research demonstrates that reliance on implicit leadership theories increases with decreases in the level of behavioral specificity of leadership measures (Gioia & Sims, 1985; Lord et al., 1978). Gioia and Sims (1985) investigated implicit leadership theories in a managerial context by manipulating three managerial behaviors (positive reward behavior, punitive behavior, and goal-setting behavior) and performance level on videotaped interactions. Assessments of each managerial behavior displayed in the videotapes, plus initiating structure and consideration, were obtained after raters received the performance level manipulation. ANOVA results contrasting variance in outcome measures due to leader behaviors versus performance information found greater variance explained by performance information when assessing initiating structure. Conversely, variance in the other behavioral measures resulted largely from the leader behavior stimulus.

Gioia and Sims (1985) interpreted these results in terms of the behavioral specificity of the outcome measures. In this context, the initiating structure measure represented a behaviorally "ambiguous" measure, whereas the other measures represented behaviorally "specific" measures. Hence, Gioia and Sims (1985) surmised that behaviorally ambiguous measures increase rater reliance on implicit leadership theories.

Furthermore, Gioia and Sims (1985) speculated that general leadership measures fail to elicit a controlled, effortful memory search; instead, they evoke a less controlled, prototype-matching process during responding (Feldman, 1981). This latter situation represents the essence of implicit leadership theories. Accordingly, Gioia and Sims advocated the use of measures which evoke a more effortful memory search as a means of avoiding the impact of implicit leadership theories.

While it is necessary to recognize and under certain circumstances control the influence of implicit leadership theories (cf., Phillips & Lord, 1986), these approaches fail to fully utilizing the information available for understanding the leadership process. For example, Offermann et al. (1994) argue that a greater understanding of variations in the use of implicit leadership theories will help improve current leadership theories. As these researchers maintain, their study results confirm that implicit theories of leadership deserve extended consideration,

> rather than treating such theories merely as sources of rating error. The ultimate importance of ILTs [implicit leadership theories] may lie not only in how they can bias our questionnaire measures of leadership but also in the way in which they structure the leader follower interaction. ILTs are undoubtedly reflected in the expectations that followers bring to the leader follower relationship (Offermann et al., 1994; p. 56).

In a similar vein, the role and relative influence of implicit leadership theories within the transformational and transactional leadership framework deserves attention. Furthermore,

this relation will provide for greater theoretical understanding if approached from the perspective espoused by Offermann et al. (1994), as opposed to Gioia and Sims (1985).

Implicit Leadership Theories Within the Transformational and Transactional Leadership Framework

Within the transformational and transactional leadership framework, the influence of implicit leadership theories warrants attention (Bass & Avolio, 1989; Kirby et al., 1992) for several important reasons. First, several investigations have explicitly discussed the impact of implicit theories of leadership for results pertaining to transformational and transactional leadership (e.g., Atwater & Yammarino, 1993; Bass & Avolio, 1989; Puffer, 1990). Second, such an investigation will provide for better theoretical understanding of transformational and transactional leadership theory as suggested by Offermann et al (1994). Finally, a specific look at implicit leadership theories will highlight them as more than simple nuisance variables which surface during questionnaire studies of leadership. To do otherwise negates the research which clearly demonstrates the systematic and pervasive operation of implicit leadership theories.

These points reinforce the above discussions. Namely, the dyadic nature of transformational and transactional leadership explicitly recognizes the follower contribution to the leadership process. Implicit leadership theories, representing the follower input into the leadership process, therefore occupy a central role in the leadership process under transformational and transactional leaders. By extension, these leadership

perspectives need to be fully explored in concert. Indeed, some research has occurred in this matter.

In an investigation of educational leaders, Kirby et al. (1992) found results fully consistent with the predictions of transformational and transactional leadership theory. However, Kirby et al. (1992) criticized the lack of behavioral specificity in the operationalization of the charismatic subscale. They suggested that many of these items assess follower outcomes and not leader behaviors. As such, Kirby et al. made the questionnaire-bias criticism of implicit leadership theories--when questionnaires lack specific behavioral references within items, the results based on this questionnaire are arguable reflective of implicit leadership theories. Kirby et al. concluded that their results, particular with charisma, might partly reflect individual implicit theories of leadership.

Atwater and Yammarino (1993) also discussed the operation of implicit leadership theories within the transformational and transactional leadership framework. Their study focused on the identification of personal attributes predictive of transformational and transactional leadership as rated by both subordinates and superiors in a military sample. Results showed that intelligence and emotional coping style predicted subordinate transformational and transactional leadership ratings, while conformity and behavioral coping style predicted superior ratings of the same leader behaviors.

Atwater and Yammarino (1993) speculated that military superiors generally value leaders who are responsible, disciplined, and action-oriented (i.e., exhibit conformity

and a behavioral coping style) while subordinates would not. Thus, raters produced transformational and transactional leader ratings consistent with their leader prototypes. This finding is consistent with interpretations from the implicit leadership theory literature (e.g., Kraus & Gemmill, 1990; Nye & Forsyth, 1991; Rush & Russell, 1988). For example, Nye and Forsyth (1991) note that student raters provided leader effectiveness ratings consistent with their individual leader prototype. Similarly, Kraus and Gemmill (1990) found that students rated leaders exhibiting initiating structure or consideration behaviors as more effective proportionally to the importance placed on these respective leader behaviors.

Ehrlich et al. (1990) demonstrated that generalized beliefs about leadership associated weakly with charisma ratings. More importantly, generalized beliefs about leadership had a strong relationship with behaviors linked to charismatic attributions. Thus, Ehrlich et al. (1990) provide evidence that generalized beliefs affect outcomes by enhancing attributions of behaviors related to those outcomes. However, generalized beliefs about leadership is not synonymous with implicit leadership theories, although some conceptual overlap exists.[2] Thus, while the Ehrlich et al. (1990) study hints at implicit leadership theories, their failure to measure them directly obfuscates interpretations regarding their operation in this framework.

A few studies directly measured the rater's implicit leadership theories and subsequently assessed their effects in the transformational and transactional leadership

[2] In Ehrlich et al. (1990), the generalized beliefs measure assessed the importance attached to leadership without describing actual traits/behaviors of leaders or outcomes of leadership.

framework (e.g., Bass & Avolio, 1989; Puffer, 1990). For example, Bass and Avolio (1989) measured the respondents actual leadership prototype. Using a scale adopted from Lord et al. (1984), Bass and Avolio (1989) had employed MBA students rate their supervisor on twenty-three leader attributes known to differentiate leaders and nonleaders. Additionally, measures of leadership (using the MLQ, scored with either a graphic rating or forced ranking format), leniency, general satisfaction, satisfaction with leader, and leader effectiveness were obtained.

Although focusing on differences between MLQ formats, Bass and Avolio (1989) reported that "partialling" out variance due to prototype ratings sharply reduced the correlations between the leadership subscales (graphic ratings only) and outcome measures (satisfaction with leaders and leader effectiveness). These results clearly demonstrate the influence of implicit leadership theories on the leader behavior-outcome relation. The partial correlation analyses utilized by Bass and Avolio (1989) permit assessment of the degree to which leader behavior-outcome covariance is enhanced by leader prototypes. However, partial correlation analyses preclude the testing of explicit causal inferences (James & Singh, 1978) and thus the understanding of how implicit leadership theories and transformational/transactional leadership relate in this context remains unspecified.

Finally, Puffer (1990) investigated the impact of decision style, decision outcome, and organizational role of the observer on perceptions of charismatic leadership. All three independent variables influenced various dimensions of the charismatic leadership

construct. For decision style, leaders using an intuitive decision style received higher ratings of risk taking, charisma, and overall charismatic leadership. However, leaders also received greater ratings of expertise, charisma, and overall charismatic leadership qualities under successful outcome conditions. The latter result is congruent with the operation of implicit leadership theories and corresponds to the performance cue effects reported in the literature (e.g., Mitchell et al., 1977; Rush et al., 1977).

Summary

Organizational leaders must search for ways to increase employee productivity above industry norms to maintain a competitive edge. Bass (1985a) proffered transformational and transactional leadership to this end. Accordingly, transformational leaders elevate the level of organizational functioning beyond transactional leadership by inducing employees to transcend narrowly conceived, personal needs and goals for the greater good of the organization. Furthermore, by combining transformational leadership with the more typical, contingent-based transactional leadership styles, leaders can simultaneously address the needs and goals of subordinates and the organization. Research has demonstrated the overwhelming employee preference for and satisfaction with transformational leaders (e.g., Singer & Singer, 1986).

The major findings stemming from the research on transformational and transactional leadership include the following: First, transformational leader behaviors positively influence a wide variety of work outcomes including job satisfaction, satisfaction with leader, extra effort, performance, organizational citizenship behaviors,

and role ambiguity. Second, transformational leader behaviors augment the effects of transactional leader behaviors and all the behaviors tapped in the LBDQ-XII (i.e., initiating structure, consideration, persuasion, tolerance for uncertainty, etc.). Third, the transactional leader behavior of MBE (active) generally has a moderate to negligible relation with work outcomes. Finally, passive MBE and laissez-faire leadership generally relate negatively to work outcomes. This latter finding supports the importance of the active leadership styles.

Methodological and conceptual problems with the transformational and transactional leadership theory also received due attention in research. For example, basic theoretical propositions hold with multisource data and longitudinal designs, thereby negating arguments suggesting either a single-source or cross-sectional data bias may account for research findings. Research demonstrated that transformational and transactional leadership generally operates on the individual level as opposed to within groups or across groups. Also, research has shown that the relative importance of transformational and/or transactional leadership dimensions may vary according to the rater's job or organizational level and the focal leader's organizational role or performance level. Similarly, the leader behavior-outcome relation may be mediated by a third variable in some situations. Trust in leadership received partial support as a potential mediator. While these latter two findings help define the boundary conditions, they do not negate the basic propositions of transformational and transactional leadership theory.

Of particular concern for this study, however, is an inability in empirical investigations to confirm the exact role of implicit leadership theories within the transformational and transactional leadership framework. If implicit leadership theories influence transformational and transactional leadership behaviors (perceptions of), currently stated propositions, interpretations and understanding of transformational and transactional leadership principles may be misstated or specified incorrectly.

The review of the implicit leadership theory literature highlighted their stability and operation in practice. Respondents employed in limited information paradigms consistently reproduced known factor structures of leadership measures and/or produced outcome ratings consistent with performance information. Given the absence of observing actual leader behaviors, such results likely reflect individual implicit leadership theories. Furthermore, when leader behaviors were observed, implicit leadership theories still influenced outcomes, albeit to a lesser degree. Additionally, measures lacking behavioral specificity increased rater reliance on implicit leadership theories in describing leader behavior. Thus, implicit leadership theories remain operative and influential in the leadership process, even when specific behavioral information exists.

Finally, research supports the notion that implicit leadership theories operate in the transformational and transactional leadership framework. While several investigations of transformational and transactional leadership indirectly assessed the role of implicit leader theories, a direct test of this role is lacking. This void in the literature represents a vital concern needing attention before the utility of transformational and

transactional leadership can be more thoroughly evaluated. This study addressed this latter concern under the following premise: Transformational and transactional leadership research, although producing impressive findings and predictions to date, needs to incorporate the influence of implicit leadership theories into its framework. Furthermore, because implicit leadership theories remain pervasive across differing levels of behavioral specificity, their role is likely integral to understanding the leadership process and, thus, should not be construed as a nuisance factor to eliminate. The next section contains a overview of the study and the specific hypotheses advanced.

Study Overview and Hypotheses

Participants provided (1) leader behavior descriptions on the MLQ-5X, (2) leader prototype ratings (good, neutral, and poor), (3) outcome ratings of job satisfaction, satisfaction with supervision, turnover intentions, and willingness to exert extra effort, (4) several supplementary measures necessary for assessing causal inferences, and (5) demographic information. The MLQ-5X measures five transformational leadership factors (attributed charisma, idealized influence, inspirational leadership, intellectual stimulation, individualized consideration), three transactional leadership factors (contingent reward, MBE active, MBE passive), and laissez-faire leadership. Also contained within the MLQ-5X are measures of leader effectiveness and the outcome, extra effort. Leader effectiveness, along with generalized leader perceptions, trust in leader, LMX quality, support for innovation, educational attainment, and job tenure comprised the supplemental measures. Finally, demographics included organizational tenure, tenure under one's immediate supervisor, and age, as well as education and job tenure.

This study contained three phases. Broadly speaking, these phases established the relation between leader behaviors and work outcomes, investigated the nature of the relation between leader behaviors and leader prototypes, and assessed the combined influence of leader behaviors and leader prototypes on the work outcomes. Each phase built upon the previous, with findings from a prior phase having direct implications for the exact test conducted in subsequent phases.

The first phase of this study sought to replicate the findings commonly noted with transformational and transactional leadership and reported in the literature review above. Phase 1 advanced the following hypotheses:

1. The leader behaviors of attributed charisma, inspirational leadership, idealized influence, individualized consideration, intellectual stimulation, and contingent reward are positively related to job satisfaction, satisfaction with supervision, and willingness to exert extra effort and negatively related to turnover intentions.
2. Laissez-faire leadership are negatively related to job satisfaction, satisfaction with supervision, and willingness to exert extra effort and positively related to turnover intentions.
3. MBE active and passive are not (or weakly) associated with job satisfaction, satisfaction with supervision, willingness to exert extra effort, and turnover intentions.
4. Of all the leader behavior-outcome relations (from hypotheses 1 through 3), attributed charisma has the greatest positive relations with job satisfaction, satisfaction with supervision, and extra effort and the greatest negative relation with turnover intentions; Conversely, laissez-faire leadership has the greatest negative relations with job satisfaction, satisfaction with supervision, and extra effort and the greatest positive relation with turnover intentions.

Hypotheses 1 through 4 represented logical expectations given the findings noted in the literature review regarding these leader behaviors. Establishing support for the basic propositions of transformation and transactional leadership theory was a necessary step in order to assess the effects of implicit leadership theories (i.e., leader prototypes) on the "typical" findings from the empirical research.

The second phase of this study explored the relation between leader prototypes and leader behaviors. Implicit leader theories were measured by assessing the degree to which subordinates rated their supervisors on traits commonly regarded as prototypical of good, neutral, or poor leadership (see Bass & Avolio, 1989; Lord et al., 1984; Pavitt & Sackaroff, 1990). The extent that leaders were perceived to fit a particular leader prototype likely influenced perceptions of leader behaviors and subordinate reactions to leader influence attempts. The nature of this relation represented the central concern in this phase of the study. Four possible patterns of relation existed; namely, individual implicit leadership theories could cause, result from, reciprocally interact with, or have no relation with transformational, transactional, and laissez-faire leader behaviors.

Of these possibilities, reciprocal interaction among implicit leadership theories and specific leader behaviors represents a comprehensive, realistic assumption. However, the other three possible relations between leader behaviors and leader prototypes remained tenable until adequately eliminated. As Asher (1984) points out, the assumption that two highly related variables in a model are not reciprocally related is often unreasonable. Particularly disturbing about disregarding possible nonrecursive models is the assumption

placed on the "all-inclusive" disturbance term. Is it reasonable to assume that error terms in a model are uncorrelated? If not, Asher (1984) suggests the implementation of nonrecursive multiequation models.

In a similar vein, James and Singh (1978) criticized research findings which suggest a causal connection among variables, yet fail to utilize techniques explicitly designed to test causal inferences. Techniques such as partial correlation and hierarchical regression (cf., Bass & Avolio, 1989) only provide for exploratory assessment of variable relations (James & Singh, 1978). These techniques represent the common approach for exploring the role of implicit leadership theories on leader behavior descriptions in the transformational leadership and transactional leadership theory framework. Thus, explicitly assuming a nonrecursive model was well supported in this study.

Two stage least squares (2SLS) was utilized to test the relation between leader prototypes and transformational, transactional, and laissez-faire leadership behaviors. Adopting a nonrecursive model provided a more complete exploration of the nature of the relations between implicit leadership theories and specific leader behaviors. This model encompassed all four possible patterns of relating noted above (James & Singh, 1978). The greatest expected influence was from implicit leader theories to leader behaviors as commonly suggested in the literature. In addition, leader behaviors were expected to influence the implicit leadership theories as well. For example, Gioia and Sims (1985) note that implicit leadership theories operate to a greater extent with less behavior specificity in the leader behavior stimulus or measures. Thus, actual leader

behaviors appear to influence the elicitation of individual implicit theories as well. Furthermore, Lord et al. (1978) demonstrated the continuous operation of implicit leadership theories even when explicit behavioral information exists.

Transformational leadership behaviors were regarded as superior to transactional leadership behaviors in both positively influencing work outcomes (Bass, 1985a) and being the preferred leadership styles among employees (Singer & Singer, 1990). On the other hand, laissez-faire leadership represented a detrimental leader behavior (Bass; 1981; Bass, 1990a). Hence, a good leader prototype was expected to reciprocally interact with transformational leader behaviors and a poor leader prototype with laissez-faire leadership. Representing the "middle ground", a neutral leader prototype was expected to reciprocally interact with transactional leader behaviors. Specifically, phase 2 advanced the following hypotheses:

5. Good leader prototype and transformational leadership are reciprocally related, with leader prototype having a greater influence on the leader behaviors of attributed charisma, inspirational leadership, idealized influence, individualized consideration, and intellectual stimulation.
6. Neutral leader prototype and transactional leadership are reciprocally related, with leader prototype having a greater influence on the leader behaviors of contingent reward, MBE active, and MBE passive.
7. Poor leader prototype and laissez-faire leadership are reciprocally related, with leader prototype having a greater influence on laissez-faire leadership.

Hypotheses 5, 6, and 7 established the protocol for examining the combined influence of implicit leadership theories and specific leader behaviors on work outcomes in phase 3 of this study.

An additional note on phase 2 of this study is warranted. The 2SLS statistical procedure required the use of exogenous variables (see Methods Section) necessary to specify the model and assess the nonrecursive relation. In brief, these exogenous variables represented predictors of the variables of primary interest, namely, leader prototype and leader behaviors. While no specific hypotheses were presented concerning these predictors, they must have had a significant relation with the variable they were hypothesized to predict in order to fully test the model. Thus, the zero-order correlations between corresponding exogenous and endogenous variables should significantly differ from zero.

Phase 3 of this study investigated the combined influence of implicit leadership theories and specific leader behaviors on the work outcomes of job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. Baron & Kenny (1983) suggests a sequence of three regression models for assessing mediation (see Methods Section). Here, the results from phase 2 helped determine the correct specification of this sequence of regression models. To the extent that one variable had a greater causal impact on another, the former variable was regarded as the antecedent and the latter the mediator (see Baron & Kenny, 1986; James & Brett, 1984 for discussion of mediation models) for assessing their combined contributions to explaining work outcomes.

Assuming support for hypotheses 5 through 7, the specific leader behavior (i.e., transformational, transactional, and laissez-faire leadership) mediated the relation between implicit leadership theories and work outcomes. Phase 3 advanced the following hypotheses:

8. Transformational leader behaviors mediate the relation between good leader prototype and work outcomes.
9. Transactional leader behaviors mediate the relation between neutral leader prototype and work outcomes.
10. Laissez-faire leadership mediate the relation between poor leader prototype and work outcomes.

Hypotheses 8 through 10, therefore, suggested that leader prototypes and leader behaviors combine to influence work outcomes. However, leader behaviors directly impact work outcomes, while leader prototypes impact work outcomes via their influence on leader behaviors.

Methods

Participants

There were 91 participants in this study, representing three organizations. While these organizations varied in overall function and purpose, they shared common characteristics. Namely, all had professional atmospheres and all participants worked under an immediate, identifiable supervisor. These organizations included a small professional video production company, a large health care and nursing provider, and a large survey research organization. Response rates were 54.5 percent, 29.5 percent, and 70.0 percent for each organization, respectively.

In both the health care and research organizations, only select departments (e.g., personnel) participated in the study. Due to confidentiality concerns across the different organizations, the same demographics were not collected from all participants. Overall, the median organizational tenure was 4 - 6 years; the median job tenure was 4 - 6 years; and the median tenure under one's respective supervisor was 1 - 3 years. Additionally, the median age range was 40 - 49 years, follow closely in frequency by 20 - 29 years, while the median education was that of college graduate (e.g., BA, BS, or equivalent). Based on these median estimates, participants in this study were largely middle-aged, college educated, and had been working steadily in their current jobs at the time of this study.

Procedure

The data collection procedure was the same at each site. Once the targeted participants were identified, they were issued an advance letter from a company representative explaining the purpose of the study. This letter also included a strong statement of confidentiality regarding participation. Several days later, a packet of information was sent to each prospective participant. This packet included: the leadership questionnaire, response form, and a cover letter describing the purpose and importance of the study, as well as reiterating the statement of confidentiality.

Both the leadership questionnaire and cover letter provided self-explanatory instructions on responding to the questions and returning the completed materials. Two methods were implemented for collecting completed questionnaires. Each organization either designated a drop-off place for the completed questionnaires or utilized their inter-office mailing system. In either case, participants did not have to disclose their identities when returning completed materials. For example, participants were instructed to omit a return address and their names from inter-office mailing envelopes.

After approximately one-and-a-half weeks, a second letter was sent to all participants as a reminder to complete their questionnaires. Those no longer having the original packet of materials were provided a means to secure them at their own discretion. To minimize disruption within each organization, only a single reminder occurred. Data collection in each organization continued until no more completed questionnaires were received. Data collection took approximately four weeks per site.

Appendix A contains examples of the questionnaire cover letter, reminder letter, and front page instructions of the questionnaire.

Measures

The questionnaire included all of the measures described below. It was divided into sections which roughly classified the measures into the following groupings: (a) MLQ-5X subscales (i.e., measures of transformational, transactional, and laissez-faire leadership); (b) leader prototype measures; (c) outcome measures; (d) supplemental measures; and (e) demographic characteristic measures. Categories a and b are collapsed for descriptive purposes below.

Leadership Measures. Participants completed two measures assessing the various leadership constructs under investigation. First, participants completed the Multifactor Leadership Questionnaire-Form 5X (MLQ-5X). Bass (1985a) provides a complete description of the development of the original MLQ questionnaire, along with reliability and validity information. The MLQ-5X represents a revised version of the original questionnaire and measures transformational leadership (attributed charisma, inspirational leadership, idealized influence, individualized consideration, intellectual stimulation), transactional leadership (contingent reward, MBE active, MBE passive), and laissez-faire leadership. Sample items from each of the subscales in the MLQ-5X are listed below:

1. Makes personal sacrifices for the benefit of others (attributed charisma).
2. Envisions exciting new possibilities (inspirational leadership).

3. Emphasizes the importance of being committed to our beliefs (idealized influence).
4. Listens attentively to my concerns (individualized consideration).
5. Seeks differing perspectives when solving problems (intellectual stimulation).
6. Makes clear what I can expect to receive, if my performance meets designated standards (contingent reward).
7. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards (MBE active).
8. It requires a failure to meet an objective for him/her to take action (MBE passive).
9. Takes no action when problems become chronic (laissez-faire leadership).

Bass et al. (1987) note that internal consistency reliability for the subscales of the MLQ have generally ranged from the high .70s to .80s.

Second, participants completed a 15-item questionnaire assessing the degree to which respondents perceived their immediate supervisor to possess certain traits commonly regarded as prototypical of good (e.g., goal-oriented), neutral (e.g., demanding), and poor (e.g., manipulative) leaders. These traits were consistent with traits identified by Lord and his colleagues (Lord, Foti, & DeVader, 1984; Foti & Lord, 1987) and independently generated by other researchers investigating leader prototypes (e.g., Offermann et al, 1994). Lord et al. (1984) described the methodology for generating

these traits and provided supporting data (e.g., prototypicality ratings) which illustrates the degree that each trait is perceived as characteristic of various levels of leadership. Unit weighting and summation across good, neutral, and poor leader prototype items, respectively, represented the three composite measures of leader prototypes.

Outcome Measures. The following work outcomes were assessed: General job satisfaction, satisfaction with supervision, extra effort, and turnover intentions.

Two subscales of the Job Diagnostic Survey (JDS: Hackman & Lawler, 1971; Hackman & Oldham; 1975) were used to measure satisfaction. One 3-item subscale was used to assess general job satisfaction. A sample item from the general job satisfaction measure is, "Generally speaking, I am very satisfied with this job". Hackman and Lawler (1971) reported an internal consistency reliability coefficient of .76 for this subscale. Satisfaction with supervision was assessed with a separate 3-item subscale. A sample item from the satisfaction with supervision measure is, "[Rate] The overall quality of supervision I receive in my work". Oldham, Hackman, and Stepina (1978) reported an internal consistency reliability coefficient of .87 for this subscale. Responses for all satisfaction items were made on a 7-point Likert scale ranging from strongly disagree to strongly agree. Composite measures were computed by unit weighting and summation.

A 3-item scale from Bass (1985a) was used to measure the willingness of subordinates to exert effort towards work objectives, or extra effort for short. (Note that this measure is actually a part of the MLQ-5X questionnaire.) Bass reported an estimated Spearman-Brown reliability of .84 for this measure. A sample item from this measure is,

"He/she gets me to do more than I expected to do". Each item was rated on a 7-point Likert scale ranging from frequently, if not always to not at all. The composite measure was computed by unit weighting and summation.

Respondents rated their intentions to leave their organizations in the near future, turnover intentions, on a 3-item measure from the Michigan Organizational Assessment Questionnaire (Seashore, Lawler, Mirvis, & Cammann, 1983). Each item was rated on a 5-point Likert scale with item specific anchors. A sample item from this measure is, "How often do you think about quitting"? Seashore et al. (1983) reported a coefficient alpha of .83 for this measure. A composite measure was computed using unit weighting and summation.

Supplemental Measures. Additional variables were utilized in testing the non-recursive relations between leadership constructs. These variables included: leader effectiveness, general leader perceptions, leader-member exchange (LMX) quality, trust in leader, support for innovation, and pay-for-performance expectations. Additionally, a measure was given to some participants to assess the extent to which participants tend to respond in a socially desirable manner.

A 4-item scale contained within the MLQ-5X (Bass, 1985a) was used to measure the perceived effectiveness of one's immediate superior. A sample item from this measure is, "How effective is the person [target leader] in representing his or her group to higher authority"? Seltzer and Bass (1990) reported a coefficient alpha of .79 for this scale. Each item was rated on a 5-point Likert scale ranging from not effective to

extremely effective. A composite measure was computed by unit weighting and summation.

Generalized leader perceptions was assessed with a 4-item scale measuring supervisor effectiveness, exhibited leadership, desirability as a supervisor, and influence on work outcomes (Lord et al., 1984). A sample item from this measure is, "How much leadership does your supervisor exhibit on the job"? These items were rated on 5-point Likert scales with item specific anchors. Lord et al. reported a coefficient alpha of .88 for this measure. Unit weighting and summation were used to create the composite measure.

LMX quality, the nature of the dyadic relationship between leaders and subordinates, was assessed with a 7-item negotiating latitude scale (Graen & Cashman, 1975; Liden & Graen, 1971). A sample item from this measure is, "Do you usually know where you stand with your immediate supervisor"? Items were rated on 4-point Likert scales with item specific anchors. Reported coefficient alphas ranged from .84 to .90 (Graen, Novak, & Sommerkamp, 1982; Scandura & Graen, 1984). Unit weighting and summation were used to create the composite measure.

Consistent with Podsakoff et al. (1990), trust was operationalized as faith in and loyalty to one's supervisor. A sample item from this measure is, "I have complete faith in the integrity of my manager/supervisor". This measure was assessed with six items, each rated on a 7-point Likert scale ranging from strongly disagree to strongly agree. Podsakoff et al. (1990) note that these items loaded on a single dimension in confirmatory factor analytic results and reported an internal consistency reliability

coefficient of .90 for this measure. Unit weighting and summation were used to create the composite measure.

Support for innovation was assessed with a 8-item measure assessing employee perceptions of their organization (as represented by leadership) as open to change, supportive of new ideas, and tolerant of member diversity (Scott & Bruce, 1994; Siegel & Kaemmerer, 1978). A sample item from this measure is, "The best way to get along in this organization is to think the way the rest of the group does". Scott and Bruce (1994) reported a coefficient alpha of .92 for this measure. The response format for these items was a 5-point Likert scale ranging from strongly disagree to strongly agree. Unit weighting and summation were utilized to create the composite measure.

A 5-item scale was constructed to measure employee perceptions of the extent to which pay is contingent on work performance. A sample item from this measure is, "The pay in this organization is based primarily on work performance". Respondents rated each item on a 7-point Likert scale ranging from strongly disagree to strongly agree. The composite measure for pay-for-performance expectations was created using unit weighting and summation.

A 10-item socially desirable scale assessed the extent to which participants intentionally distort their responses in an effort to create a favorable impression of themselves (Paulhus, 1984). A sample item from this measure is, "I always tell the truth". These items were rated on a 5-point Likert scale ranging from strongly disagree to

strongly agree. This scale has a reported internal consistency of .74 in pilot investigations (S. B. Gustafson, personal communication, April 28, 1995).

Demographic Characteristics. In addition to the above measures, participants were asked to provide the following demographic information: tenure in their respective organization, tenure under current supervisor, job tenure, educational background, highest level of education, gender, age, position title, and organizational level of current job. Of these, organizational tenure, job tenure, tenure under one's supervisor, age, and educational level were the only demographics asked of all participants.

Appendix B contains examples of all the measures described above, except those contained in the MLQ-5X, which is a copyrighted instrument.

Pretest of the Leader Prototype Measures

The leader prototype measure consisted of 15 trait items consistently associated with different prototypicality levels of leadership. These levels included good (i.e., prototypical), neutral, or poor (i.e., antiprototypical) leadership, with five traits pertaining to each level. Hence, leader prototypes actually consisted of three trait-based measures: good leader prototype, neutral leader prototype, and poor leader prototype.

To develop this measure, a pretest was conducted to generate leader prototypicality ratings on a list of 20 traits (shown in Appendix C). Items of this original list were chosen from Lord et al. (1984) based on two criteria. First, item prototypicality ratings were examined. Prototypicality ratings assessed how characteristic of leaders and nonleaders each trait item was regarded on a 5-point Likert scale ranging from fit my

image very well (5) to does not fit my image at all (1). The author determined that good leader traits were those receiving a mean prototypicality rating of 4 or greater. In turn, neutral leader traits were those receiving mean ratings between 3 and 4, while poor leader traits were those receiving mean ratings less than 3. This decision was based on a examination of the natural breaks in the leadership prototypicality ratings.

Besides prototypicality ratings, other available indices included cue validity and diagnosticity scores. These latter indices represent additional ways of assessing the leader prototypicality of each trait and were provided by Lord et al. (1984). However, they failed to clearly differentiate among leadership prototypicality levels, particularly for the poor leader traits. They did provide supplemental information to consider in making final item choices.

The second criteria for initial item selection was face validity. The items were evaluated in terms of their intuitive relation to both leadership in general, and the specific level of leadership they purportedly measured. Those items satisfying the first criteria but lacking face validity as judged by the author were not considered for inclusion (e.g., well-dressed). These two criteria allowed the generation of the initial list of 20 traits shown in Appendix C. Six or seven trait items corresponded to each level of leadership being assessed.

Having generated a preliminary list of traits, the 20 items were subsequently administered to a pretest sample (N = 23) representing a small research group within a large social science research firm. This sample contained a mix of professional and

support staff who had been working in their current jobs for at least 1 year. The pretest participants provided no other demographic information. To assess the items, a 5-point Likert scale was used in which participants indicated the extent to which each trait was characteristic of a leader. These ratings were made on a 5-point Likert scale ranging from to a very great extent (5) to to no extent (1).

Table 1 presents the mean ratings for only those items comprising the final version of the prototype measures, according to the prototypicality level the items fit. Also provided are the mean prototypicality ratings generated by Lord et al. (1984). The mean ratings from the pretest parallel those from the Lord et al. study. The reliability coefficients were .69, .75, and .74 for the good, neutral, and poor leader prototype measures, respectively. Furthermore, paired t-tests comparing pretest means for good ($M = 4.40$), neutral ($M = 3.47$), and poor ($M = 2.42$) leader prototype found them all significantly different from each other ($p < .05$). Hence, the pretest results confirmed that the trait-based prototype measures adequately assess good, neutral, and poor leader prototypes.

A final comment concerns the trait "tough". The mean prototypicality rating for tough differed considerably between the pretest results and the Lord et al. (1984) study. This trait item was used because the other traits intended to measure neutral prototypicality were not confirmed in the pretest. Additionally, the pretest mean and low standard deviation for the neutral leader composite, as well as the substantial drop in the

Table 1

Pretest Results for the Leader Prototype Measures

Trait	M[a]	SD[a]	M[b]
Good Leader Traits			
informed	4.43	0.59	4.48
decisive	4.57	0.59	4.44
strong character	4.17	0.78	4.22
goal-oriented	4.57	0.59	4.52
believable	4.26	0.75	4.30
Neutral Leader Traits			
forceful	3.48	0.73	3.44
tough	3.57	0.66	2.39
courageous	3.95	0.77	3.35
demanding	3.35	0.78	3.22
outspoken	3.00	0.90	3.26
Poor Leader Traits			
unemotional	2.61	0.90	2.09
dishonest	1.78	0.80	1.35
manipulative	2.43	1.08	2.52
conservative	2.52	0.67	2.61
strict	2.78	0.67	2.70

Note. [a]based on pretest results; [b]ratings from Lord et al. (1984).

coefficient alpha when leaving tough out of the neutral scale, provided substantial justification to include tough as a trait in the neutral leader prototype scale.

Given these results, as well as those provided by Lord et al. (1984), the measures of good, neutral, and poor leader prototypes consisted of those items shown in Table 1. Study participants who rated their immediate supervisors high on any prototype level regarded their supervisor as possessing those traits commonly associated with good, neutral, or poor leadership.

Power Analyses

Overview. Typically, power analyses are performed post hoc, although the nature of significance testing suggests conducting then a priori (Cohen, 1977; Sawyer & Ball, 1981). That is, most statistical analyses proceed under the notion that rejecting the null hypothesis confirms the relation depicted in the alternative hypothesis. The power of a statistical test represents the probability of rejecting a false null hypothesis, thereby supporting (in theory) the alternative hypothesis. Thus, a priori power analyses help ensure that chosen research designs are capable of detecting significant relations if they exist. For this study, power analyses allowed the determination of an adequate sample size for sufficient statistical power[3].

[3] The post hoc use of power analysis allows the determination of statistical power under a given research design after the results of the statistical test are available. This usage often occurs when researchers fail to reject the null hypothesis. Post hoc power analyses help clarify whether or not nonsignificant results are reflective of the research design (e.g., small sample size). See Cohen (1977) for more on the role of power analyses in behavioral research.

Guidelines provided by Cohen (1977) for conducting power analyses were followed. Specifically, Cohen notes the requirement of the following four informational components to perform power analyses (also see Sawyer & Ball, 1981):

1. alpha level: the probability of rejecting the null hypothesis when it is true (type I error rate);
2. sample size: the number of participants needed for reliable and precise sample estimates;
3. power: the probability that a statistical test will lead to the rejection of the null hypothesis; and
4. effect size: the degree to which a phenomenon (e.g., variable relations) is present in the population.

Knowledge of any 3 of the 4 components above allows the determination of the fourth component. Thus, it is instructive to examine how each of these components are determined. While established guidelines exist for setting power and alpha levels, researchers must estimate effect sizes using past research and existing knowledge concerning the phenomenon under investigation (Cohen, 1977; Kraemer & Thiemann, 1987; Sawyer & Ball; 1981). Guidelines for setting each component of a power analysis are briefly reviewed below.

Alpha levels of 0.05 or 0.01 represent the standard in most social science research. Thus, researchers generally concede a 5% or 1% chance of committing a type I error. Note that the alpha level generally refers to each statistical test separately, or test-

wise. However, most often several statistical comparisons occur during a single investigation. Hence, researchers set the alpha level test-wise, while ignoring the experiment-wise chance for type I errors (i.e., across the entire investigation). This latter approach requires that the alpha level be adjusted so that the combined alpha level across all statistical test remains at a constant level (Cohen, 1990).

Type II error rate pertains to the rate of failing to reject a false null hypothesis and directly relates to the power of a test (i.e., type II error = 1 - power). For power, Cohen (1977) suggested using the .80 level, arguing that at this level the type II error rate remains reasonably low without imposing overly burdensome sample size requirements. Furthermore, this power level compliments the .05 alpha level typically used. A more stringent alpha level decreases the power of a test, thereby increasing the type II error rate.

While the determination of alpha and power levels follow established conventions, the determination of effect sizes and sample sizes do not. For effect size estimates, researchers must rely on the available evidence regarding the extent to which the phenomenon under investigation actually exists in a given population. Reviews of relevant research, personal experience, and the like, help in determining effect sizes. Once established, the quality or strength of the effect size becomes an issue. Cohen (1977) notes that, ceteris paribus, larger effect sizes give a statistical test more power with smaller sample size requirements. He presents guidelines for classifying effect sizes as small,

medium, and large. Such guidelines are clearly generalizations, because they necessarily disregard the peculiarities of a specific research domain.

Finally, although subject to practical constraints, the determination of sample sizes directly relates to the precision of sample estimates. The quality of sampling-based research depends larger on the quality of sample estimates. Most gauges of the quality of sample estimates (e.g., standard errors) are a function of the sample size. Intuitively, the larger the sample, the better the opportunity that sample estimates will approximate population parameters.

In sum, alpha level, power level, effect sizes, and sample size information represent the four components needed in power analyses. With this information, Cohen (1977) illustrates four circumstances under which this information can aid in the design of research studies:

1. Determine power as a function of alpha level, effect size, and sample size;
2. Determine sample size as a function of effect size, alpha level, and power;
3. Determine effect size as a function of alpha level, sample size, and power; and
4. Determine alpha level as a function sample size, power, and effect size.

Of these, the second approach was used in this investigation.

Determination of Sample Size

Published journal articles from the extant literature were examined for findings pertaining to the relations among those constructs under investigation. Many

similar, but not identical, constructs were also considered. For example, correlations between the transformational leadership factors and different measures of satisfaction were included in the power analyses even though the measures addressed multiple facets of satisfaction, such as satisfaction with job, supervisor, and performance appraisal. The use of different, though related, constructs introduced additional sources of variability into central tendency measures used to estimate effect sizes. To ensure that this variability could not accentuate effect size estimates, correlations with related constructs were not considered if these correlations were greater than those with like constructs[4].

Not all articles dealing with transformational and transactional leadership were represented in the power analyses. Mainly those articles used in the literature review, which is an extensive and representative sample of available articles, were used. Reasons for not utilizing the findings from some articles include: (a) lack of access to them; (b) they did not address the same or a related construct(s) as the current study; or (c) they used something other than correlation/regression based analyses.

Most relations were expressed as correlations, and these were the focus of the power analysis. To determine an appropriate effect size, correlations between leader behaviors and work outcomes or prototype measures were first listed by study. Of particular interests were leader behavior relations with the outcomes of satisfaction and extra effort, but leader effectiveness was also considered given its pervasive use in this

[4] The effect of an accentuated correlation is to increase effect size estimates. As noted, this leads to lower sample size estimates. It was decided to err on the conservative side, if at all. Therefore, this step was taken because the use of peripherally related measures can only decrease effect size measures (i.e., increase sample size requirements).

framework. Then, transformational, transactional, and laissez-faire leader behavior relations were classified by leadership dimensions. Correlation coefficients were converted to z-scores with Fisher's r-to-z transformations (Hays, 1987). The mean z-score across all transformational, transactional, or laissez-faire leadership relations were computed. Finally, the mean z-score was then converted to the mean correlation between each leadership dimension and outcome variable or prototype measure. This value represented the effect size estimate. Note, however, that this estimate applies to the average leadership relation and not the relations with specific behaviors. Tables 2, 3, and 4 show the results of this process for the transformational, transactional, and laissez-faire leadership dimensions, respectively.

With effect size estimates determined, an alpha at the standard .05 level, and power at the suggested .80 level, target sample size estimates were obtained from the tables provided in Cohen (1977). The power level was based on the recommendations outlined by Cohen; that is, a power level of .80 minimizes the risk of type II error without producing overly burdensome sample size requirements.

Tables 5 summarizes the sample size estimates across all leadership dimension relations. These values ranged from a suggested sample size of 13 to 508. The value of 508 occurred for the effect size estimate between laissez-faire leadership and extra effort from a single study and likely represents an anomalous finding. Trimming this extreme value, the suggested sample sizes ranged from 13 to 102, with a mean sample size estimate of 52 subjects. Looking at the marginal averages in Table 5, mean sample size

Table 2

Effect Size Calculation (Z- score Values) for Transformational Factors

		Outcome Measures			
Study	N	Satisfaction	Effectiveness	Extra Effort	Prototype
Kirby et al (1992)	103	1.12	0.89		
Erhlich et al. (1990)	34			0.53	0.08
Avolio & Yammarino (1990, #	151		0.91		
Avolio & Yammarino (1990, #	224		0.79		
Singer & Singer (1990, # 1)	60	0.61			
Singer & Singer (1990, # 2)	107	0.62			
Singer (1985)	38	0.97	0.93		
Niehoff, et al. (1990)	862	0.40			
Yammarino & Bass (1990)	793	0.63	0.72	0.72	
Seltzer & Bass (1990	138	0.76	0.56	0.70	
Bass & Avolio (1989)	87	1.05	0.95		1.08
Hackman, et al. (1992)	153			0.72	
Waldman, et al. (1987)	256	0.50			
Waldman, et al. (1987)	256	0.82			
Waldman, et al. (1987)	256	0.37			
Hater & Bass (1988, group 1)	171	1.00	1.00		
Hater & Bass (1988, group 2)	141	1.17	1.17		
Posakoff, et al. (1990)	n/p	0.76			
From Bass (1985)	45	0.60	0.28	0.45	
From Bass (1985)	23	0.68	0.33	0.87	
From Bass (1985)	256	0.80		1.18	
From Bass (1985)	104	1.05	0.88		
From Bass (1985)	198	0.63	0.48		
Totals		Satisfaction	Effectiveness	Extra Effort	Prototype
Total		14.53	9.90	5.16	1.16
No. of values represented		19	13	7	2
Mean Z		0.76	0.76	0.74	0.58
Mean r		0.64	0.64	0.63	0.52
Sample Size (power = .80)		12.57	12.67	13.36	20.35

Note. Outcome measures are not always identical to those used in the current study.
n/p = not presented.

Table 3

Effect Size Calculation (Z-score Values) for Transactional Factors

		Outcome Measures			
Study	N	Satisfaction	Effectiveness	Extra Effort	Prototype
Kirby et al (1992)	103	0.36	0.35		
Erhlich et al. (1990)	34			0.49	-0.03
Avolio & Yammarino (1990, # 1)	151				
Avolio & Yammarino (1990, # 2)	224				
Singer & Singer (1990, # 1)	60	0.06			
Singer & Singer (1990, # 2)	107	0.43			
Singer (1985)	38	0.40	0.48		
Niehoff, et al. (1990)	862				
Yammarino & Bass (1990)	793	0.28	0.30	0.44	
Seltzer & Bass (1990)	138				
Bass & Avolio (1989)	87	0.44	0.53		0.53
Hackman, et al. (1992)	153			0.25	
Waldman, et al. (1987)	256	0.11			
Waldman, et al. (1987)	256	0.28			
Waldman, et al. (1987)	256	0.10			
Hater & Bass (1988, group 1)	171	0.14	0.14		
Hater & Bass (1988, group 2)	141	0.18	0.18		
Posakoff, et al. (1990)	n/p	0.76			
From Bass (1985)	45	0.18	0.08	0.06	
From Bass (1985)	23	0.24	0.06	0.01	
From Bass (1985)	256	0.27		0.38	
From Bass (1985)	104	0.39	0.33		
From Bass (1985)	198	0.09	0.02		
Totals		Satisfaction	Effectiveness	Extra Effort	Prototype
Total		4.73	2.48	1.63	0.51
No. of values represented		17	10	6	2
Mean Z		0.28	0.25	0.27	0.25
Mean r		0.28	0.24	0.27	0.25
Sample Size (power = .80)		81.87	102.39	86.02	98.38

Note. Outcome measures are not always identical to those used in the current study.
n/p = not presented.

Table 4

Effect Size Calculation (Z-score Values) for Laissez-faire Leadership

		Outcome Measures		
Study	N	Satisfaction	Effectiveness	Extra Effort
Kirby et al (1992)	103	-0.76	-0.66	
Erhlich et al. (1990)	34			
Avolio & Yammarino (1990, # 1)	151		-0.52	
Avolio & Yammarino (1990, # 2)	224		-0.50	
Singer & Singer (1990, # 1)	60			
Singer & Singer (1990, # 2)	107			
Singer (1985)	38			
Niehoff, et al. (1990)	862			
Yammarino & Bass (1990)	793	0.11	-0.15	0.11
Seltzer & Bass (1990	138			
Bass & Avolio (1989)	87			
Hackman, et al. (1992)	153			
Waldman, et al. (1987)	256			
Waldman, et al. (1987)	256			
Waldman, et al. (1987)	256			
Hater & Bass (1988, group 1)	171			
Hater & Bass (1988, group 2)	141			
Posakoff, et al. (1990)	n/p			
Bass (1985)	45			
Bass (1985)	23			
Bass (1985)	256			
Bass (1985)	104			
Bass (1985)	198			
Totals		Satisfaction	Effectiveness	Extra Effort
Total		-0.647723	-1.83389	0.11047
No. of values represented		2	4	1
Mean Z		-0.32	-0.46	0.11
Mean r		-0.31	-0.43	0.11
Sample Size (power = .80)		60.92	31.40	508.41

Note. Outcome measures are not always identical to those used in the current study.
n/p = not presented.

estimates across outcomes/prototype ranged from 15 (transformational) to 92 (transactional). Conversely, mean sample size estimates across leadership dimensions ranged from 33 (extra effort) to 59 (prototype). Given the above information, a target sample size of 102 subjects would provide more than sufficient power to adequately test all hypotheses, although lower sample sizes could provide for adequate assessment. For example, a sample size of 75 still provides statistical power of .60 based on the lowest effect size estimate (transactional leadership/effectiveness).

Table 5

Summary of Sample Size Estimates

	Outcome measures				
Leadership dimension	Satisfaction	Effectiveness	Extra effort	Prototype	Mean
Transformational	13	13	13	20	15
Transactional	82	102	86	98	92
Laissez-faire	61	31	**508**	N/A	46
Mean	52	49	50	59	

Note. boldface value excluded from mean calculations.

Two points should be made in reference to the process of computing effect size estimates and determining sample size requirements. First, the prototype measure is not the same as that utilized in the current investigation. In fact, the prototype measures differ across all studies reported although their effects were aggregated. However, to the extent that prototypes relate to leader behaviors as expected, these prototype - outcome relations serve as proxies for determining sample size estimates. Second, the transactional dimension combines active and passive leader behaviors (e.g., contingent reward and

MBE). Thus, positive and negative relations were averaged. This attenuates the effect size estimates and produces higher than needed sample size estimates, because such averaging of positive and negative effects will not occur in the actual study.

Statistical Approach

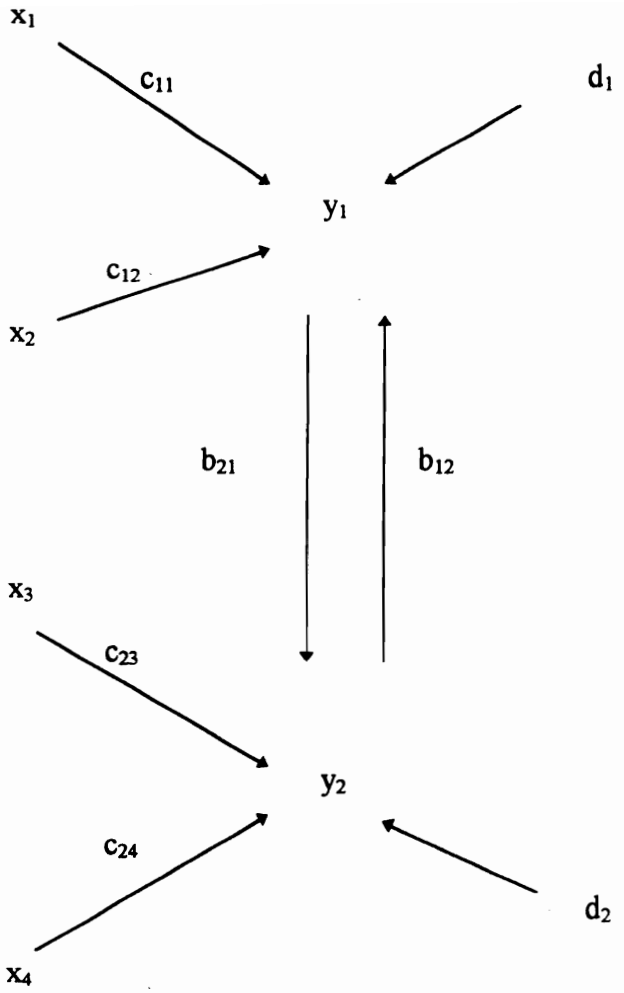
Phase 1: Correlation Analysis

Phase 1 of this study (hypotheses 1 through 4) was assessed using correlation analysis. Hypothesized correlations between the transformational, transactional, and laissez-faire leadership ratings and work outcomes were tested for significance (H_0: P_{xy} = 0) using the t statistic (Hays, 1988). This test is reported SAS computer procedures (SAS Institute, Inc., 1988). Note, however, that only the hypothesis that the true correlation equals 0 may be tested in this manner.

Differences between correlation coefficients were not assessed using Fisher's r-to-Z transformation procedures because these correlation coefficients did not satisfy the independence assumption (Hays, 1988). The data were not grouped in any relevant way (i.e., by organization) for such comparisons. Hence, correlations across constructs were compared, on a relative, not statistical sense. The variance explained, r^2, provides a means of assessing the strength of the relation using a meaningfulness criteria (Cohen, 1990).

Phase 2: Two Stage Least Squares

Phase 2 of this study (hypotheses 5 through 7) was assessed with two stage least squares (2SLS). In particular, 2SLS was appropriate in assessing the nonrecursive causal relations (Asher, 1983; Berry, 1984; James & Singh, 1978; Schmitt & Bedeian, 1982) hypothesized between the different levels of leader prototype and transformation, transactional, or laissez-faire leadership. The general model depicted in Figure 1 was tested successively by tailoring it to coincide with the nine specific models presented in



Structural equations:

$$y_1 = b_{12}\, y_2 + c_{11}\, x_1 + c_{12}\, x_2 + d_1$$

$$y_2 = b_{21}\, y_1 + c_{23}\, x_3 + c_{24}\, x_4 + d_2$$

Equation 1: **stage one** of 2SLS

(a) $\hat{y}_1 = \hat{\pi}_{11}\, x_1 + \hat{\pi}_{12}\, x_2 + \hat{\pi}_{13}\, x_3 + \hat{\pi}_{14}\, x_4$,

(b) $\hat{y}_2 = \hat{\pi}_{21}\, x_1 + \hat{\pi}_{22}\, x_2 + \hat{\pi}_{23}\, x_3 + \hat{\pi}_{24}\, x_4$,

where the $\hat{\pi}$s represent regression weights.

Equation 2: **stage two** of 2SLS

(a) $y_2 = b_{21}\, \hat{y}_1 + c_{23}^{t}\, x_3 + c_{24}^{t}\, x_4 + d'_2$,

(b) $y_1 = b_{12}\, \hat{y}_2 + c_{11}^{t}\, x_1 + c_{12}^{t}\, x_2 + d'_1$,

where the d's represent the second stage disturbance terms, and the superscript t is used to distinguish equation 2 parameters from those in the structural equations.

Figure 1. General form of the nine 2SLS models assessing the nonrecursive relations between leader prototypes and specific leader behaviors.

Table 6. As noted above, good leader prototype was expected to reciprocally relate to each of the transformational leadership factors; neutral leader prototype was expected to reciprocally relate to each of the transactional leadership factors; and poor leader prototype was expected to reciprocally relate to laissez-faire leadership.

In general, 2SLS evaluates nonrecursive relations among endogenous variables by examining their covariation within a larger system of relations. While assessing the logical consistency of predictions with observed data, this procedure does not preclude alternative causal interpretations. However, data from the 2SLS process will allow the assessment of the logical consistency of some alternative causal hypotheses (see James & Singh, 1978 for details). For example, to estimate parameters, the equation must be identified (see description below). Assuming certain parameters equal zero is the primary method for achieving identification. These "zero parameter" assumptions can be verified by estimating them and testing whether they actually equal zero. Additionally, results from a 2SLS assessment provide opportunities to assess the extent to which models suffered from estimation problems such as multicollinearity and misspecification.

Specifically, 2SLS tests a series of structural equations using ordinary least squares (OLS) regression (James & Singh, 1978; James & Tetrick, 1986; Schmitt & Bedeian, 1982). These structural equations reflect the hypothesized causal relations for each endogenous variable in the model. Each structural equation is solved such that variance not predicted by the model (i.e., due to unmeasured variables) is statistically controlled. To illustrate, consider the hypothetical model and resulting structural

Table 6

Exogenous and Endogenous Variables Comprising the Nine Nonrecursive Models

Model	y_1	y_2	x_i's for y_1	x_i's for y_2
1	Good leader prototype	Attributed Charisma	Leader Perceptions	LMX quality; Trust in leader
2	Good leader prototype	Inspirational leadership	Leader Perceptions	LMX quality; Trust in leader
3	Good leader prototype	Idealized influence	Leader Perceptions	LMX quality; Trust in leader
4	Good leader prototype	Individualized consideration	Leader Perceptions	LMX quality; Trust in leader; Support for innovation
5	Good leader prototype	Intellectual stimulation	Leader Perceptions	LMX quality; Trust in leader; Support for innovation
6	Neutral leader prototype	Contingent reward	Leader Perceptions	LMX quality; pay-for-performance
7	Neutral leader prototype	MBE active	Leader Perceptions	LMX quality; Tenure under supervisor
8	Neutral leader prototype	MBE passive	Leader Perceptions	LMX quality; Tenure under supervisor
9	Poor leader prototype	Laissez-faire leadership	Leader Perceptions	LMX quality; Tenure under supervisor

Note. indicators = exogenous predictors; MBE = management-by-exception; LMX = leader-member exchange.

equations for endogenous variables y_1 and y_2 depicted in Figure 1. In these equations, each b_{gh} ($g \neq h$) and c_{gk} represents an estimate between the structural parameters for the reciprocally interacting endogenous variables and between exogenous and endogenous variables, respectively. The d_gs indicate disturbance terms.

The first stage of 2SLS isolates the variance in y_1 that causes y_2 but is unrelated to the unmeasured causes of y_2. This is accomplished by regressing y_1 on all the exogenous variables (x_i's) in the model (Asher, 1983; Berry, 1984) and obtaining a predicted value for y_1, $y\hat{}_1$, called an instrument (see Equation 1a, Figure 1). Here, $y\hat{}_1$ "contains" variance unrelated to unmeasured causes of y_2, provided the assumptions in selecting exogenous variables are sufficiently satisfied. Then, y_2 is regressed on both $y\hat{}_1$ (the uncontaminated estimate or instrumental variable) and the exogenous variables hypothesized as direct causes of y_2, which include x_3 and x_4 in this example. This completes the second stage of 2SLS (see Equation 2a, Figure 1).

The structural coefficient for the endogenous predictor from the second stage (b_{21}), if significantly different from zero, supports the causal influence of y_1 on y_2. Given the tenability of the model assumptions, this coefficient represents the "uncontaminated" effects of y_1 on y_2. Such effects are further supported if the parameter estimates for the exogenous variables in the second stage regressions ($c_{23}{}^t$ for x_3 and $c_{24}{}^t$ for x_4, see Equation 2a, Figure 1) are nonsignificant, yet the zero-order correlations between the respective exogenous and endogenous variables are significant and modest (James &

Singh, 1978). Once the influence of y_1 on y_2 is assessed, the process is then repeated with respect to y_2 as the antecedent in the causal connection (Equations 1b and 2b, Figure 1).

Two stage least squares results rely on correct model specification and tenable model assumptions. In Figure 1, use of all the exogenous variables (i.e., x_i's) to create instrumental variables serves to ensure that the first stage of 2SLS identifies variance in one endogenous variable (e.g., y_1) that is unrelated to unmeasured causes of the other endogenous variables (e.g., y_2). Failure to accomplish this results in the condition of spuriousness (James, Mulaik, & Brett, 1982; James & Singh, 1978), meaning unmeasured causes have not been adequately controlled. In this situation, the model suffers from an omitted variable(s) problem and alternative models may exist which describe the observed data equally well. To guard against spuriousness, exogenous variables must meet the following conditions (Berry, 1984; James & Singh, 1978):

1. They should have a significant direct or indirect relation with their respective endogenous variable;
2. They must not directly cause the "other" (i.e., reciprocally related) endogenous variable(s) in the system;
3. They must be unrelated to unmeasured causes of the other endogenous variable(s) in the system; and
4. They can not be caused by any of the endogenous variables.

For choosing exogenous variables, the above conditions specify that endogenous variables should significantly (i.e., statistically) and conceptually relate to their exogenous predictors

and that error terms from the models should remain uncorrelated with exogenous variables (Berry, 1983).

As noted, implicit leadership theories were thought to causally influence perceived leader behaviors. However, the literature supports the influence of leader behaviors on the operation of implicit leadership theories (Gioia & Sims, 1985). Thus, a reasonable assumption was that a nonrecursive relation exists between general, trait-based beliefs about a leader (i.e., implicit leadership theories) and the specific, behaviors ascribed to a leader (i.e., transformational, transactional, and/or laissez-faire leader behaviors).

Each exogenous variable identified in Table 6 was chosen because it was conceptual congruent with the enumerated conditions of 2SLS. And as noted in the literature review, the endogenous variables represent leadership constructs with clear conceptual distinctions. Implicit leader theories, as represented by leader prototypes, measure generalized beliefs about leader traits without explicit reference to behaviors, subordinates, or leader-subordinate interaction. Conversely, transformational, transactional, and laissez-faire leadership make explicit reference to leader behaviors, subordinate reactions, and leader-follower interaction (or lack thereof). Hence, exogenous variables hypothesized as direct causes of these leadership constructs represented established or suggested causes of either general leader impressions or specific behaviors involving leader-follower interaction. For the transformational, transactional, and laissez-faire behaviors, the utilized causal agents were based on suggestions by Bass

(1985a). Implicit leadership theory research shows that general leadership perceptions predict the ascribed leader prototype.

A final note on 2SLS concerns the actual computation of parameter estimates. While the 2SLS process as outlined above implies two distinct steps, a single "step" procedure exists (Berry, 1984). Available with SAS (see SAS Institute, Inc., 1993), the single step procedure still involves the 2SLS mechanics but is computationally easier. For example, there is no need to save estimates from the first equation and then read them into the computation for the second stage regressions. More importantly, the single step approach produces correct standardized coefficient estimates and R^2 values in the second stage. The original distinct step process does not, although the unstandardized coefficient estimates are the same in either approach. Within multiequation systems, standardized estimates allow comparisons of the magnitude of variable relations by eliminating scaling differences across predictors.

Based on phase 2 results, mediation models were assessed in the phase 3 of this study. Before describing the analysis of phase 3, however, a brief review of model identification issues follow.

Identification. The crucial condition of identification occurs when sufficient information is available to obtain unique estimates of the parameters. This is a byproduct of the notion that correlations among variables do not equate to causation without explicit assumptions. Hence, the assumptions placed on 2SLS equations represent the information needed to ensure identification. If the assumptions are correct, the result should be a

system of variables under certain restrictions such that the resulting parameters are interpretable in causal terms.

Two stage least squares is applicable for identified or overidentified models only. When a model is not identified (underidentification), more than one set of parameter estimates exist which are consistent with the observed data and the model restrictions. Under this condition, any model remains open to alternative specifications or interpretations. Therefore, the ideal case occurs when only one set of parameters would be consistent with observations and model restrictions. This latter scenario is the state of identification. More precisely, Berry (1984) notes the following:

> Thus, when defining identification, it is useful to assume that we have complete observation, i.e., complete knowledge of the conditional distribution of the endogenous variables in a model for all values of the exogenous variables. Then we say that an equation in a multiequation model is identified if knowledge of this conditional probability distribution uniquely determines the parameters of the equation (p.24-25).

The above discussion highlights several points regarding identification. First, identification does not rely on the quality of the data in a sampling sense (Berry, 1984). For example, increasing sample sizes will not combat the problems of nonidentification. Second, identification occurs at the equation level such that a multiequation system is identified only if all equations within the system are also identified. Finally, nonidentified

equations achieve identification by placing additional restrictions on them. These restrictions, in effect, add information to the system.

There are two major processes for determining if an equation is identified: the order and rank condition. The order condition is a simple counting process that determines whether there is necessary, but not sufficient, evidence for identification. Hence, if the order condition fails, then the equation is underidentified; however, a successful test under the order condition does not guarantee that the equation is identified. Specifically, the order condition is satisfied if the following relation holds:

$$k_e \geq m_i - 1,$$

where k_e represents the number of exogenous variables in the model excluded from the structural equation under consideration, and m_i represents the number of endogenous variables from the model included in the equation being tested. The m_i value includes the endogenous variable being explained/predicted by the equation.

Table 7 presents the k_e and m_i for each of the equations used in the nonrecursive models show in Table 6. Each of the equations for this present investigation satisfy the order condition. All nine nonrecursive models satisfied the necessary condition for identification.

The definitive test for identification is the rank condition. This necessary and sufficient condition for identification involves taking linear combinations of each equation. If a different equation of the same form, using the same variables as the equation in question can be formulated, then that equation is underidentified. For identification, it

Table 7

Assessment of the Order Condition for Identification

Model	Endogenous Variable	k_e	m_i	$k_e \geq m_i - 1$?
1	attributed charisma	1	2	Yes
1	good leader prototype	2	2	Yes
2	inspirational leadership	1	2	Yes
2	good leader prototype	2	2	Yes
3	individualized influence	1	2	Yes
3	good leader prototype	2	2	Yes
4	individualized consideration	1	2	Yes
4	good leader prototype	1	2	Yes
5	intellectual stimulation	1	2	Yes
5	good leader prototype	3	2	Yes
6	contingent reward	1	2	Yes
6	neutral leader prototype	1	2	Yes
7	MBE active	1	2	Yes
7	neutral leader prototype	2	2	Yes
8	MBE passive	1	2	Yes
8	neutral leader prototype	2	2	Yes
9	laissez-faire leadership	1	2	Yes
9	poor leader prototype	2	2	Yes

Note. k_e = number of exogenous variables excluded from equation;
m_i = number of endogenous variables included in equation.

must be demonstrated that taking linear combinations of a equation can not produce another of the same form using the same variables (Berry, 1984).

Matrix algebra allows an assessment of the rank condition in most applications, but Berry (1984) presents a symbolic algorithm which simulates the matrix algebra approach. It represents the model in matrix format, substitutes symbols (i.e., 0 and *) for variable components, and follows a flowchart depicting the manipulation of the symbols. In essence, Berry's approach simulates taking linear combinations of each equation.

The algorithm is straightforward, but too lengthy to included here. Suffice it to say, however, that the preliminary indications of the order condition were confirmed with testing the rank condition[5]. Furthermore, in describing the 2SLS process, James & Singh (1978) note that generally at least one (1) instrument is needed for each endogenous variable to achieve identification. Each of the nonrecursive models satisfy this guideline as well. Hence, having satisfied three rules/guidelines for identification, the 2SLS models possess enough information to generate unique parameter estimates consistent with the model restrictions.

Phase 3: Regression Analysis

Phase 3 of this study (hypotheses 8 through 10) used regression to assess mediation models (Baron & Kenny, 1986; Judd & Kenny, 1981). Based on the 2SLS results, the leadership construct with the greater causal impact on the other (i.e., leader

[5] Handwritten tests of the rank conditions and copies of the algorithm and flowchart are available from the author.

prototype versus leader behavior) was regarded as the antecedent in assessing combined effects on the work outcomes. The other leader construct functioned as the mediator.

To illustrate Baron & Kenny's (1986) recommended procedure, it is assumed that leader prototype (A) affects work outcomes (C) via the mediation of leader behaviors (B) as shown in Figure 2. A test of mediation requires the following regression models (called steps for pedagogical purposes):

step 1: $B = A$;

step 2: $C = A$;

step 3 $C = A + B$.

Step 1 requires regressing the mediator on the independent variable; step 2 requires regressing the outcome or dependent variable on the independent variable; and step 3 requires regressing the outcome variable on both the mediator and the independent variables simultaneously (Baron & Kenny, 1986). A simple examination of the pattern of relations across the three steps provides an assessment of the proposed mediation model.

Specifically, successful support for the proposed mediation model will show that the independent variables significantly predict the mediator in step 1. In step 2, the outcome variable should be significantly predicted by the independent variables. Finally, the mediator should predict the outcome in step 3. A nonsignificant independent variable in the step 3 regression provides an indication of perfect mediation (Baron & Kenny, 1981). For partial mediation, the effect of the independent variable on the outcome must

be less in step 3 than step 2. This approach does not require the use of any partialling or hierarchical regression procedures (cf. Cohen & Cohen, 1983).

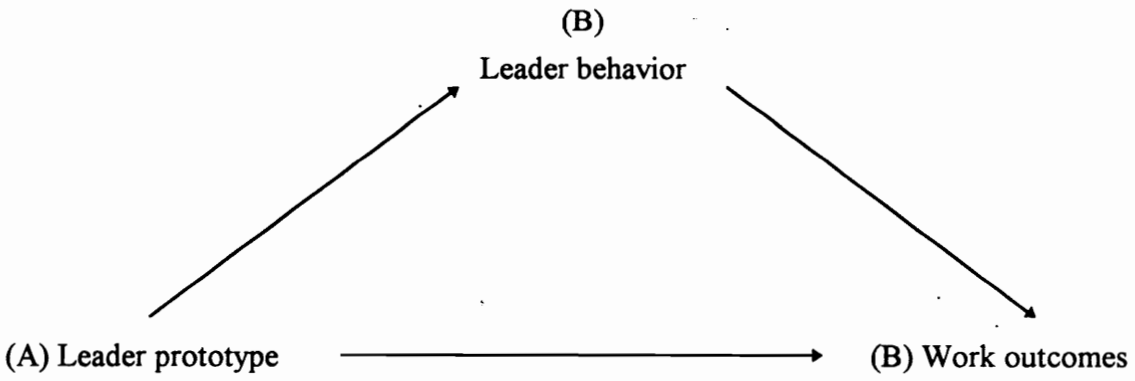


Figure 2. General form of the nine mediation models assessing the combined influence of leader prototypes and specific leader behaviors on work outcomes.

The analyses of phase 3 clarified the magnitude and nature in which implicit leader theories and transformational, transactional, and/or laissez-faire leadership combined to influence work outcomes.

Results[6]

Assessment of Variables

The substantive variables utilized in this study fall under the following categories: leader behaviors, leader prototypes, work outcomes, supplementary variables, and demographics. Leader behaviors reflect subordinate ratings of their immediate supervisors in terms of their transformational, transactional, and laissez-faire leadership behaviors. Transformational leadership included attributed charisma (AC), inspirational leadership (IL), idealized influence (II), individualized consideration (IC), and intellectual stimulation (IS). Transactional leadership included contingent reward (CR), management-by-exception active (MBEA), and management-by-exception passive (MBEP). Laissez-faire leadership (LL) was represented by a single composite measure. Leader prototypes reflect the extent to which subordinates perceived their supervisor as possessing traits consistent with a good leader prototype (GLP), neutral leader prototype (NLP), and a poor leader prototype (PLP).

The focal work outcomes of this study included job satisfaction (JS), satisfaction with supervision (SS), willingness to exert extra effort (EE), and turnover intentions (TI). Of these, job satisfaction and turnover intentions represent outcomes not commonly investigated in transformational and transactional leadership studies.

The supplementary variables measured additional, non-focal constructs used to specify the causal models during phase 2 of the study. These variables included leader-

[6] All significance test reported in this section are based on the .05 alpha level.

member-exchange quality (LMX), leader effectiveness (EFFECT), trust in leader (TR), generalized leadership perceptions (LP), support for innovation (SI), and pay-for-performance expectations (PP).

The final class of variables used in this study measured the following demographic characteristics: organizational tenure (OT), job tenure (JT), tenure under immediate supervisor (ST), age, and education (EDUCATE). Demographic variables provide both sample description information and additional specification variables in the causal models.

Table 8 displays the variable intercorrelations and reliability estimates (where applicable). With the exception of poor leader prototype, all composite measures had reliability estimates above .75, thereby exceeding the commonly utilized lower-bound standard of .70 (Nunnally, 1978). The reliability estimate for poor leader prototype, .50, failed to reach this conventional level. Therefore, the following three trait items were dropped from use in this measure: unemotional, conservative, and strict. With the remaining two items, "manipulative" and "dishonest", the poor leader prototype resulted in a coefficient alpha of .67. Thus, the final poor leader prototype measure contained only two items.

Examination of the intercorrelations between good, neutral, and poor leader prototypes revealed that good and neutral prototypes correlated positively at .70 ($p < .05$), good and poor prototypes correlated negatively at -.32 ($p < .05$), and neutral and poor prototypes correlated weakly at .19 ($p < .10$). In additional analyses, mean scores were

Table 8

Reliability Estimates and Intercorrelations Among Analysis Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. AC	88																										
2. II	83	88																									
3. IL	84	85	92																								
4. IS	77	81	83	90																							
5. IC	84	78	83	78	90																						
6. CR	74	73	77	73	78	88																					
7. MBEA	-10	9	5	10	-13	19	76																				
8. MBEP	-72	-60	-70	-56	-66	-48	29	87																			
9. LF	-66	-57	-68	-56	-63	-49	13	81	91																		
10. GLP	75	71	80	65	70	57	1	-67	-77	83																	
11. NLP	44	49	51	42	29	33	32	-32	-49	70	81																
12. PLP	-48	-27	-32	-32	-40	-28	30	39	25	-32	19	67															
13. JS	47	42	50	40	44	41	-21	-54	-48	41	15	-26	83														
14. TI	-47	-42	-42	-31	-37	-41	22	45	40	-35	-9	28	-86	92													
15. SS	79	73	73	65	76	66	-19	-73	-68	67	26	-50	54	-56	93												
16. EE	81	78	83	78	81	79	5	-62	-50	64	37	-30	41	-39	67	89											
17. EFFECT	78	66	73	64	70	61	-2	-70	-77	71	44	-32	54	-55	72	65	85										
18. TR	80	71	66	63	70	59	-20	-68	-65	67	29	-64	45	-48	87	60	69	93									
19. LP	60	70	68	62	58	64	21	-53	-50	50	35	-17	24	-23	57	68	53	51	84								
20. LMX	82	78	80	69	80	76	-15	-69	-71	71	39	-39	58	-57	88	72	76	78	60	89							
21. SI	57	51	62	60	65	55	-11	-56	-60	59	35	-28	50	-48	65	56	69	58	43	67	84						
22. PP	32	18	34	20	22	27	4	-20	-11	21	10	-17	44	-49	23	32	27	17	13	26	30	87					
23. OT	-5	-10	-23	-12	-25	-10	11	27	26	-24	-11	4	-3	-19	-22	-16	-9	-7	-14	-17	-16	10	NA				
24. JT	-12	-16	-29	-24	-40	-23	4	14	18	-30	-16	12	0	-19	-20	-30	-12	-14	-12	-23	-17	0	71	NA			
25. ST	3	-8	-18	-17	-18	-10	1	12	12	-15	-6	7	6	-25	-6	-12	0	5	-10	-2	-7	13	72	71	NA		
26. AGE	2	0	-13	-18	-21	-12	1	6	15	-9	-7	-7	31	-43	-4	-9	-7	3	-9	-6	-28	25	45	38	33	NA	
27. EDUCATE	2	5	5	13	11	-1	13	0	3	14	22	9	-14	21	-9	13	3	-5	-11	-8	-8	-4	-28	-36	-27	-11	NA

Note. Decimal points omitted; coefficient alphas on diagonal; variable codes as defined in text.

computed by taking the average rating across the traits for each leadership level. The means for good leader prototype (3.7) and neutral leader prototype (3.0) were significantly different ($t(90) = 8.58$, $p < .05$). Similarly, the means for good leader prototype and poor leader prototype (1.8) were significantly different ($t(90) = 12.04$, $p < .05$), as were the means for neutral leader prototype and poor leader prototype ($t(90) = 10.03$, $p < .05$). Hence, both the pattern of intercorrelations and mean differences demonstrated that the prototype measures reflected their intended level of leader prototypicality.

Assessment of Sample Characteristics

With data provided by individuals across three organizations, it was necessary to assess organizational differences in sample characteristics. Tables 9 through 12 contain the mean comparison of survey variables by organization, classified by leadership variables (including behaviors and prototypes), work outcomes, supplementary variables, and demographics, respectively.

In all, there were 27 substantive variables for comparison across the three organizations, resulting in 81 mean comparisons. Ten out of 81 (12.3%) of these comparisons resulted in significant differences at the $p < .05$ level using Duncan's multiple range test (Hays, 1981). However, three of these variables, organization tenure, job tenure, and tenure under supervisor, were highly similar and had intercorrelations above .71. Disregarding these variations in operationalizing tenure, the total number of significant mean differences dropped to 8 out of 81 (9.9%). This rate slightly exceeds the

Table 9

Means and Standard Deviations for Leadership Variables by Organization

Leadership Variables	Organization 1			Organization 2			Organization 3		
	M	SD	n	M	SD	n	M	SD	n
Transformational									
AC	29.00	5.39	11	29.53	8.86	17	26.57	7.60	58
II	34.27	6.63	11	32.61	10.40	18	29.38	8.46	58
IL	36.67[a]	6.17	12	36.65[a]	9.28	17	29.41[b]	9.87	59
IS	33.62[a]	4.23	13	31.82[a,b]	9.76	17	27.27[b]	8.87	55
IC	30.77	5.97	13	29.94	10.37	18	26.09	8.11	56
Transactional									
CR	24.25	7.12	12	25.33	9.99	15	21.71	8.12	55
MBEA	17.75	4.73	12	19.78	4.61	18	17.11	6.12	57
MBEP	15.77	4.49	13	14.59	6.82	17	18.18	7.39	55
Leader Prototype									
GLP	19.08[ab]	2.87	13	20.44[a]	3.13	18	17.40[b]	5.04	60
NLP	14.69[a]	3.15	13	18.00[b]	3.46	18	14.23[a]	4.80	60
PLP	3.23	1.09	13	3.83	2.01	18	3.65	1.78	60
Laissez-faire	16.00	6.51	11	13.82	4.00	17	16.98	8.61	57

Note. AC = attributed charisma; II = idealized influence; IL = individualized leadership; IS = intellectual stimulation; IC = individualized consideration; CR = contingent reward; MBEA = management-by-exception active; MBEP = management-by-exception passive GLP = good leader prototype; NLP = neutral leader prototype; PLP = poor leader prototype; Organization 1 = health care; organization 2 = video production; organization 3 = research; means in same row that do not share same superscript differ at $p < .05$.

Table 10

Means and Standard Deviations for Work Outcomes by Organization

Outcomes Variables	Organization 1			Organization 2			Organization 3		
	M	SD	n	M	SD	n	M	SD	n
Job Satisfaction	15.77	3.00	13	14.17	4.90	18	15.51	4.64	59
Satisfaction with Supervision	15.92	4.57	13	15.78	5.71	18	14.58	4.97	60
Extra Effort	9.58	3.32	12	9.06	4.11	18	7.52	3.35	56
Turnover Intentions	8.08^{ab}	3.04	13	9.22^{a}	4.35	18	6.62^{b}	3.45	60

Note. Organization 1 = health care; organization 2 = video production; organization 3 = research; means in same row that do not share same superscript differ at $p < .05$.

4 of 81 (5%) significant mean differences expected by chance alone. However, there were no variables in which all three organizations differed significantly from each other. Given these organizational differences, minor adjustments were initially made to those analyses involving inspirational leadership, intellectual stimulation, good leader prototype, neutral leader prototype, turnover intentions, or any demographic variable. These variables represent those in which organizational differences occurred as shown in tables 9 through 12. For regression-based analyses, organization membership (represented as a dummy variable; Hay, 1981; Lewis-Beck, 1980) was introduced as a regressor to statistically adjust for possible organizational level effects in the model, if present (Lewis-Beck, 1980).

Table 11

Means and Standard Deviations for 2SLS Model Specification Variables by Organization

Specification Variables	Organization 1			Organization 2			Organization 3		
	M	SD	n	M	SD	n	M	SD	n
Trust in Leader	34.77	7.08	13	33.39	9.17	18	32.53	8.66	59
LMX Quality	20.69	4.40	13	20.61	5.40	18	19.25	4.50	60
Leader Effectiveness	14.38	2.47	13	14.61	4.53	18	14.05	3.57	58
Leadership Perception	12.00	2.38	13	12.44	3.63	18	11.55	3.51	58
Support for Innovation	24.92	5.63	12	27.33	6.76	18	24.45	6.46	60
Pay for Performance	17.46	8.07	13	18.67	7.60	18	18.03	7.21	60

Note. Organization 1 = health care; organization 2 = video production; organization 3 = research; means in same row that do not share same superscript differ at $p < .05$.

The results from both of these additional analyses failed to change the original results as presented below. In fact, none of the actual estimates (e.g., beta weights, R^2 values, etc.) changed appreciably in either magnitude or statistical significance. Thus, while some aggregate organizational effects (i.e., mean differences) occurred, these effects disappeared in the assessment of the individual level relations. Given these findings, the results which follow did not incorporate the above noted adjustments for organizational membership.

Table 12

Means and Standard Deviations for Demographics by Organization

Demographic Variables	Organization 1			Organization 2			Organization 3		
	M	SD	n	M	SD	n	M	SD	n
Organization Tenure	2.54[a]	0.88	13	2.07[a]	1.03	15	3.62[b]	1.03	60
Job Tenure	1.92[a]	0.76	13	1.73[a]	0.59	15	3.07[b]	0.90	60
Tenure under Supervisor	2.00[a]	0.71	13	1.73[a]	0.46	15	2.93[b]	0.94	59
Age	2.85[a]	0.90	13	2.86[a]	1.03	14	3.59[b]	1.04	59
Education	4.38[a]	1.12	13	4.12[a]	0.78	17	3.31[b]	1.18	59

Note. Organization 1 = health care; organization 2 = video production; organization 3 = research; means in same row that do not share same superscript differ at $p < .05$.

A final sample characteristic of concern was the possibility that participants would distort their responses to be more socially desirable. This was of concern given that the data was perceptual in nature and explicitly asked participants to rate their immediate supervisors. For the first 30 participants in the study, responses to the social desirability measure (Paulhus, 1984) were gathered and used in preliminary correlational analyses. Specifically, none of the other variables (leadership, outcomes, or supplementary) correlated significantly with social desirability. Hence, socially desirability in responses did not pose a problem for these participants[7].

[7] After this preliminary analyses, it was decided to drop the social desirability scale from the questionnaire in order to reduce overall questionnaire length.

Replicating Findings from the Transformational/Transactional Leadership Literature

Phase 1 of this study sought to replicate those findings typically reported in the transformational and transactional leadership literature. Hypothesis 1 states that the transformational leadership behaviors and contingent reward behavior of the transactional leadership factor positively relate to job satisfaction, satisfaction with supervision, and extra effort, but negatively relate to turnover intentions. Table 13 addresses these relations. As shown, the correlations with job satisfaction ranged from .50 with inspirational leadership to .40 with intellectual stimulation. For satisfaction with supervision, correlations ranged from .79 with attributed charisma to .65 with intellectual stimulation. For extra effort, correlations ranged from .83 with inspirational leadership to .78 with both idealized influence and intellectual stimulation. Finally, for turnover intentions, correlations ranged from -.47 with attributed charisma to -.31 with intellectual stimulation.

These relations (Table 13) demonstrate that the transformational leader behaviors of attributed charisma, inspirational leadership, idealized influence, intellectual stimulation, and individualized consideration, as well as the transactional leader behavior of contingent reward, relate with job satisfaction, satisfaction with supervision, extra effort, and turnover intentions as expected. Hence, hypothesis 1 was empirically supported.

Hypothesis 2 states that laissez-faire leadership negatively relates to job satisfaction, satisfaction with supervision, and extra effort, but positively relates to

Table 13

Bivariate Relations Between Leader Behaviors and Work Outcomes

Leader Behaviors		Job Satisfaction	Satisfaction with Supervision	Extra Effort	Turnover Intention
Transformational					
AC	r	0.47*	0.79*	0.81*	-0.47*
	N	85	86	82	86
II	r	0.42*	0.73*	0.78*	-0.42*
	N	86	87	83	87
IL	r	0.50*	0.73*	0.83*	-0.42*
	N	87	88	83	88
IS	r	0.40*	0.65*	0.78*	-0.31*
	N	84	85	80	85
IC	r	0.44*	0.76*	0.81*	-0.37*
	N	86	87	84	87
Non-Leadership					
LF	r	-0.48*	-0.68*	-0.50*	0.40*
	N	84	85	80	85
Transactional					
CR	r	0.41*	0.66*	0.79*	-0.41*
	N	81	82	77	82
MBEA	r	-0.21*	-0.19	0.05	0.22*
	N	86	87	82	87
MBEP	r	-0.54*	-0.76*	-0.62*	0.45*
	N	84	85	82	85

Note. AC = attributed charisma; II = idealized influence; IL = inspirational leadership; IS = intellectual stimulation; IC = individualized consideration; CR = contingent reward; MBEA = management-by-exception active; MBEP = management-by-exception passive; LF = laissez-faire leadership; *p < .05.

turnover intentions. Table 13 shows that laissez-faire leadership negatively correlates with job satisfaction, satisfaction with supervision, and extra effort, and positively correlates with turnover intentions. Each of these correlations are statistically significant, thereby supporting hypothesis 2 as well. Laissez-faire leadership had effects opposite of those observed for transformational leadership or contingent reward behavior.

The remaining behaviors measured in the MLQ-5X include two transactional leadership behaviors: management-by-exception active (MBEA) and passive (MBEP). For these leadership behaviors, hypothesis 3 states that each will not (or very weakly) relate to the work outcomes. Table 13 shows a significant, negative correlation between MBEA and job satisfaction, and a significant, positive correlation between MBEA and turnover intention. MBEA did not significantly correlate with either satisfaction with supervision or extra effort. Each of these relations were quite small as judged by the correlation coefficients ($rs < |.22|$). That is, MBEA does not affect work outcomes strongly in either a positive or negative fashion.

However, MBEP significantly correlated with all work outcomes. Negative relations occurred with job satisfaction, satisfaction with supervision, and extra effort, whereas a positive relation occurred with turnover intentions. These findings contradict hypothesis 3. Inspecting Table 13 reveals that the pattern of relations for MBEP and laissez-faire leadership match. Hence, unlike the MBEA approach with seemingly innocuous results, MBEP represents a potentially detrimental leadership style.

Considering the findings for MBEA and MBEP, hypothesis 3 received only partial confirmation. No or weak relations among MBEA and MBEP with work outcomes were hypothesized. The findings for MBEA hold in that the correlations were either non-significant or lower in magnitude (relative not statistical) when compared to the other leader behavior-work outcome relations. However, for MBEP, the magnitude of effects paralleled those noted with laissez-faire leadership. This latter finding is not surprising, because the MLQ-5X represents a refined version of the measure previously used to assess transformational and transactional leader behaviors. Indeed, confusion with management-by-exception in past research centered on the lack of differentiation between the active and passive components (Bass, 1985a). It appears now that these two approaches to management-by-exception exist and have dramatically different implications for influencing work outcomes. Particularly, MBEP represents a passive form of managing-by-exception and relates to work outcomes in a manner consistent with laissez-faire leadership, a non-leadership perspective (Bass, 1981).

Finally, hypothesis 4 states that attributed charisma and laissez-faire leadership have the greatest, albeit opposite, relations with work outcomes as compared to the other leader behavior-work outcome relations. These expected relations conform to prior research which supports attributed charisma as the major positive influence on work outcomes (e.g., House & Podsakoff, 1994). Similarly, prior research demonstrates that laissez-faire has strong, negative effects on work outcomes (Bass, 1981).

As shown in Table 13, attributed charisma correlates highest with satisfaction with supervision and turnover intentions, compared to any other leader behavior correlation with these outcomes. Additionally, attributed charisma correlates second highest with both job satisfaction and extra effort. With these latter work outcomes, inspirational leadership has the highest positive correlation. These results likely reflect recent changes to the charismatic subscale in the MLQ-5X. In fact, inspirational leadership represents a factor which until recently was subsumed within the attributed charisma scale of earlier versions of the MLQ. Hence, it is expected that these two transformational factors correlate similarly with the work outcomes.

For laissez-faire leadership, Table 13 shows that the relations with job satisfaction, satisfaction with supervision, extra effort, and turnover intentions are slightly smaller than those same relations with MBEP. Based on the bivariate relations between leader behaviors and work outcomes, attributed charismatic and inspirational leadership have the most positive relations with work outcomes, while MBEP and laissez-faire leadership have the most negative relations with work outcomes.

To summarize, the first phase of this study demonstrates that the basic propositions of transformational and transactional leadership hold with this particular sample. Each of the transformational leader behaviors, as well as contingent reward behavior, correlated positively with job satisfaction, satisfaction with supervision, and extra effort, and negatively with turnover intentions. Conversely, laissez-faire and MBEP had opposite patterns of effect; they correlated negatively with job satisfaction,

satisfaction with supervision, and extra effort, and positively with turnover intentions. All of these variable relations were significant at the $p < .05$ level. MBEA correlated weakly or not at all with the work outcomes. Finally, attributed charisma and inspirational leadership positively influenced work outcomes the most, whereas laissez-faire leadership and MBEP negatively influenced work outcomes the most.

Aside from supporting the basic tenets of transformational and transactional leadership, these results show that transformational leader behaviors have the most positive relations with work outcomes, whereas laissez-faire leadership has an extremely negative relation with work outcomes. The transactional leader behaviors diverge in their effects on work outcomes. Consistent with theory, contingent reward represents a necessary component of effective leadership and as such exhibits relations to outcomes that mirror those of transformational leadership. Active management-by-exception has little or no impact on work outcomes; MBE passive results in effects comparable to those produced by laissez-faire leadership. Based on these relations, it follows that the extent to which supervisors fit a good, neutral, or poor leader prototype relates to their transformational, transactional, or laissez-faire leadership behaviors, respectively. The next phase of this study explored this contention.

Assessment of the Relation between Leader Behaviors and Leader Prototypes

In the Statistical Approach section, nine nonrecursive models are described. These models depict the reciprocal relations between good leader prototype and each of the transformational leader behaviors (hypothesis 5), between neutral leader prototype and

each of the transactional leader behaviors (hypothesis 6), and between poor leader prototype and laissez-faire leadership (hypothesis 7). Zero-order correlations (see Table 8) show that the good leader prototype positively related with each transformational leadership factor (rs from .65 to .75, all $p < .05$). Neutral leader prototype related positively with contingent reward ($r = .33$, $p < .05$) and MBEA ($r = .33$, $p < .05$), but negatively with MBEP ($r = -.32$, $p < .05$). Finally, poor leader prototype and laissez-faire leadership were positively related ($r = .25$, $p < .05$). These bivariate relations initially support testing the nonrecursive relations. Each of the leader behaviors related with the level of leader prototype they were hypothesized to reciprocally interact.

The 2SLS results corresponding to each of the nine models are presented in Tables 14 through 22. These tables show both standardized (beta weights) and unstandardized structural coefficients, standard errors, and resulting R^2 values. Inspection of the significant coefficients across all nine models suggests that in all cases, except with MBEP (Table 21), the direction of causal influence was from leader behavior to prototype. That is, prototypes failed to significantly influence leader behaviors in a reciprocal manner.

However, closer inspection of each of these 2SLS tables reveals that the initial models had erroneous estimates for the structural coefficients. Particularly, regressing each endogenous variable on their respective exogenous predictor(s) resulted in parameter estimates with signs opposite to expectation, as well as large standard error estimates. For example, Table 14 shows that the final 2SLS unstandardized parameter

Table 14

Two Stage Least Squares Results for Attributed Charisma (AC) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Attributed charisma	0.52	0.07	0.86*
Leadership perception	-0.02	0.15	-0.02
Charismatic leadership			
Good leader prototype	2.14	1.81	1.31
LMX quality	-0.02	0.85	-0.01
Trust in leader	-0.08	0.36	-0.09

Note. R^2 for predicting GLP = .55; R^2 for predicting AC = .51; *p < .05.

Table 15

Two Stage Least Squares Results for Inspirational Leadership (IL) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Inspirational Leadership	0.51	0.07	1.08*
Leadership perception	-0.29	0.16	-0.21
Inspirational leadership			
Good leader prototype	5.52	3.69	2.59
LMX quality	-1.37	2.06	-0.65
Trust in leader	-0.62	0.57	-0.54

Note. R^2 for predicting GLP = .58; R^2 for predicting IL = .24; *p < .05.

Table 16

Two Stage Least Squares Results for Idealized Influence (II) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Idealized Influence	0.57	0.09	1.07*
Leadership perception	-0.31	0.20	-0.23
Idealized Influence			
Good leader prototype	5.41	4.48	2.87
LMX quality	-1.22	2.12	-0.65
Trust in leader	-0.77	0.88	-0.75

Note. R^2 for predicting GLP = .50; R^2 for predicting II = .18; *p < .05.

Table 17

Two Stage Least Squares Results for Individualized Consideration (IC) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Individualized consideration	0.48	0.07	0.90*
Leadership perception	-0.03	0.16	-0.02
Individualized Consideration			
Good leader prototype	2.27	2.00	1.24
LMX quality	-0.05	1.15	-0.03
Trust in leader	-0.09	0.36	-0.07

Note. R^2 for predicting GLP = .50; R^2 for predicting IC = .47; *p < .05.

Table 18

Two Stage Least Squares Results for Intellectual Stimulation (IS) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Intellectual Stimulation	0.60	0.11	1.17*
Leadership perception	-0.32	0.23	-0.23
Intellectual Stimulation			
Good leader prototype	5.14	3.83	2.65
LMX quality	-1.97	2.28	-1.03
Support for Innovation	-0.38	0.69	-0.26
Education	-2.55	3.22	-0.34

Note. R^2 for predicting GLP = .42; R^2 for predicting IS = .17; *p < .05.

Table 19

Two Stage Least Squares Results for Contingent Reward (CR) and Neutral Leader Prototype (NLP)

Outcome/predictors	B	SE B	β
Neutral leader prototype			
Contingent Reward	0.32	0.13	0.58*
Leadership perception	-0.01	0.26	-0.01
Contingent Reward			
Neutral leader prototype	3.31	2.97	1.86
LMX quality	-0.11	1.33	-0.06
Pay for Performance	0.03	0.24	0.03

Note. R^2 for predicting NLP = .18; R^2 for predicting CR = .16; *p < .05.

Table 20

Two Stage Least Squares Results for Management-by-Exception Active (MBEA) and Neutral Leader Prototype (NLP)

Outcome/predictors	B	SE B	β
Neutral leader prototype			
MBE active	-0.55	0.32	-0.72
Leadership perception	0.59	0.23	0.44*
MBE active			
Neutral leader prototype	7.31	10.34	5.59
LMX quality	-2.87	3.85	-2.29
Tenure under Supervisor	1.29	3.60	0.22

Note. R^2 for predicting NLP = .08; R^2 for predicting MBEA = .01; *p < .05.

Table 21

Two Stage Least Squares Results for Management-by-Exception Passive (MBEP) and Neutral Leader Prototype (NLP)

Outcome/predictors	B	SE B	β
Neutral leader prototype			
MBE passive	-0.35	0.15	-0.54*
Leadership perception	0.03	0.22	0.02
MBE passive			
Neutral leader prototype	-2.32	3.40	-1.50
LMX quality	-0.17	1.34	-0.11
Tenure under Supervisor	0.25	1.71	0.04

Note. R^2 for predicting NLP = .14; R^2 for predicting MBEP = .17; *p < .05.

Table 22

Two Stage Least Squares Results for Laissez-faire Leadership (LL) and Poor Leader Prototype (PLP)

Outcome/predictors	B	SE B	β
Poor leader prototype			
Laissez-faire leadership	0.15	0.05	0.67*
Leadership perception	0.07	0.09	0.14
Laissez-faire leadership			
Poor leader prototype	-8.28	18.66	-1.92
LMX quality	-2.42	2.82	-1.45
Tenure under Supervisor	2.36	3.36	0.29

Note. R^2 for predicting PLP = .12; R^2 for predicting LL = .13; *p < .05.

estimate for leader perception was -.02 when used as an predictor for good leader prototype. However, good leader prototype and leadership perception had a strong positive relation. This pattern of nonsensical coefficient estimates and large standard errors pervaded each of the nine models. Furthermore, the R^2 values for predicting leader behaviors were fairly modest in most instances, although none of the individual predictors reached significance. Each of these anomalies indicate multicollinearity problems (Cohen & Cohen, 1983; Hays, 1981; Lewis-Beck, 1980; Stevens, 1992). Thus, the 2SLS structural parameter estimates suffered from multicollinearity, a common problem with 2SLS models (Asher, 1983; Duncan, 1975; Huang, 1970).

The explicit tests to confirm the existence of multicollinearity in the original 2SLS models are described in Appendix D. Based on these tests, the 2SLS models were respecified. This model respecification process is described in the next section.

Respecification of the 2SLS models. Inspection of Tables 14 through 21 reveals that the multicollinearity problems adversely affected the estimates of leadership perceptions, LMX quality, and trust in leader. These variables resulted in negative parameter estimates although positive estimates should have resulted. High standard errors also occurred for these variables. A reasonable replacement for leadership perception was leader effectiveness. These two variables were significantly related (r = .53, $p < .05$). Furthermore, effectiveness had the same pattern of relations with the leader prototype measures as leadership perception (viz., r = .71 with good leader prototype, r = .44 with neutral leader prototype, and r = -.32 with poor leader prototype, all significant at $p < .05$). Thus, leader effectiveness was substituted for leader perception as the exogenous predictor of leader prototype in the revised 2SLS models.

Using leader effectiveness in this domain has abundant support in the literature as research shows that leader or group effectiveness (i.e., knowledge thereof) is often used as the precursor to eliciting prototypes. For example, Mitchell et al. (1977) demonstrated that group performance manipulations significantly influenced leader perceptions. Similarly, Phillips and Lord (1981) found that the majority of explained variance in a generalized leadership impression measure was accounted for by the effect of performance feedback information. A close inspection of the leader effectiveness items

(see Methods section) reveals that they assess leader effectiveness in terms of both representing individuals and the group. Hence, the leader effectiveness measure likely acts to causally influence generalized leader impressions as represented by the leader prototype measures.

The second manner in which the 2SLS models were respecified involved the elimination of LMX quality from all the models. LMX quality and trust in leader correlated significantly ($r = .78$, $p < .05$), thus accounting for a great deal of the multicollinearity problems. Retention of trust in leader conforms to research findings dealing mostly with transformational leader behaviors, particularly attributed charisma (Avolio & Yammarino, 1990; Kirby et al, 1992). Specifically, the nature of transformational leadership is to induce strong feelings of commitment, identification, and regard for organizational objectives and leaders. Furthermore, because transformational and transactional leadership operates at the individual level, individual difference factors shape the evaluation of leader behaviors. Avolio and Yammarino (1993) note the leader-follower interaction and how such interaction is regarded represents an individual difference factor which influences attributed charisma. Hence, differences in trust and loyalty to a leader influences regard for one's supervisor in transformational leadership terms.

Furthermore, Bass (1985a) speculated that trust in leader acts as a direct precursor to receptiveness to transformational leader behaviors. Arguably, a distrustful subordinate will remain unreceptive to transformational or transactional leadership

attempts. As for transactional behaviors, it is well know that contingency approaches to leadership are highly dependent on the leaders ability to deliver promised rewards for expended effort (Liden & Graen, 1980). It follows that trust in a leader constitutes a key variable in determining the nature of the contingency, where trusted leaders garner more bargaining and influence power.

Regarding the relations with each of the leader behaviors, trust in leader had a significant ($p < .05$), positive relation with all the transformational behaviors, as well as contingent reward behavior (rs ranged from .59 with contingent reward to .80 with attributed charisma). Trust in leader had negative relations with MBEA ($r = -.20$, $p < .05$), MBEP ($r = -.67$, $p < .05$), and laissez-faire leadership ($r = -.65$, $p < .05$). Hence, the pattern of correlations between trust in leader and transformational, transactional, and laissez-faire leadership supported the role of trust as the antecedent in the revised 2SLS models.

The revised 2SLS models thus had leader prototypes (good, neutral, or poor) reciprocally influencing leader behaviors (transformational, transactional, or laissez-faire leadership). Additionally, leader effectiveness ratings were posited to directly influence leader prototype, while trust in leader were posited to directly influence leader behaviors. Where applicable, the other variables used to specify the original 2SLS models remained unchanged in the respecified models. Finally, as shown in Table 7 (in Statistical Approach section) pertaining to the identification of the original 2SLS models, equations with only a

single exogenous predictor are identified and thus 2SLS estimation was appropriate for all the respecified models.

Results from Respecified Models. Hypothesis 5 states that good leader prototype and transformational leadership behaviors (attributed charisma, inspirational leadership, idealized influence, individualized consideration and intellectual stimulation) reciprocally interact. As shown in Tables 23 through 27, these relations held, except with intellectual stimulation; namely, the larger beta weights in 4 of the 5 relations (Tables 23-26) indicated the greater causal impact (i.e., the larger beta weight) occurred for the effect of good leader prototype on the transformational leader behaviors.

Hypothesis 6 posits a reciprocal relation between neutral leader prototype and transactional leader behaviors (contingent reward, MBEA, and MBEP). Here, results provided only partial support for the hypothesized nonrecursive relations. In particular, Tables 28 through 30 show that transactional leader behaviors did not influence neutral leader prototype as indicated by the nonsignificant beta weight for this relation. However, neutral leader prototype significantly influenced contingent reward behavior (Table 28) and MBEP (Table 30). Additionally, trust in leader was significant in each of the regressions to predict a transactional leader behavior. This issue is addressed below because it has implications for interpreting the 2SLS models.

Finally, hypothesis 7 states that laissez-faire leadership and poor leader prototype reciprocally relate. As shown in Table 31, laissez-faire leadership significantly

Table 23

Two Stage Least Squares Results (Revised) for Attributed Charisma (AC) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Attributed charisma	0.42	0.13	.70*
Leader effectiveness	0.20	0.23	0.16
Charismatic leadership			
Good leader prototype	1.56	0.38	.94*
Trust in leader	0.14	0.15	0.16

Note. R^2 for predicting GLP = .56; R^2 for predicting AC = .60; *p < .05.

Table 24

Two Stage Least Squares Results (Revised) for Inspirational Leadership (IL) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Inspirational Leadership	0.48	0.15	1.02*
Leader effectiveness	-0.06	0.31	-0.05
Inspirational leadership			
Good leader prototype	2.32	0.44	1.08*
Trust in leader	-0.04	0.18	-0.03

Note. R^2 for predicting GLP = .57; R^2 for predicting IL = .57; *p < .05.

Table 25

Two Stage Least Squares Results (Revised) for Idealized Influence (II) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Idealized Influence	0.42	0.13	0.79*
Leader effectiveness	0.32	0.19	0.25
Idealized Influence			
Good leader prototype	1.54	0.44	0.81*
Trust in leader	0.16	0.18	0.16

Note. R^2 for predicting GLP = .53; R^2 for predicting II = .53; *p < .05.

Table 26

Two Stage Least Squares Results (Revised) for Individualized Consideration (IC) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Individualized consideration	0.44	0.14	0.80*
Leader effectiveness	0.35	0.18	0.28
Individualized Consideration			
Good leader prototype	1.56	0.62	0.85*
Trust in leader	0.08	0.18	0.08
Support for innovation	0.14	0.19	0.10

Note. R^2 for predicting GLP = .52; R^2 for predicting IC = .55; *p < .05.

Table 27

Two Stage Least Squares Results (Revised) for Intellectual Stimulation (IS) and Good Leader Prototype (GLP)

Outcome/predictors	B	SE B	β
Good leader prototype			
Intellectual Stimulation	0.47	0.15	0.93*
Leader effectiveness	0.10	0.28	0.12
Intellectual Stimulation			
Good leader prototype	1.60	0.80	0.81*
Trust in leader	0.04	0.23	0.04
Support for innovation	0.14	0.24	0.10
Education	0.19	0.83	0.03

Note. R^2 for predicting GLP = .46; R^2 for predicting IS = .47; *p < .05.

Table 28

Two Stage Least Squares Results (Revised) for Contingent Reward (CR) and Neutral Leader Prototype (NLP)

Outcome/predictors	B	SE B	β
Neutral leader prototype			
Contingent Reward	-0.13	0.25	-0.23
Leader effectiveness	0.76	0.40	0.58
Contingent Reward			
Neutral leader prototype	1.51	0.59	0.83*
Trust in leader	0.34	0.14	0.35*
Pay for performance	0.14	0.13	0.13

Note. R^2 for predicting NLP = .18; R^2 for predicting CR = .32; *p < .05.

Table 29

Two Stage Least Squares Results (Revised) for Management-by-Exception Active (MBEA) and Neutral Leader Prototype (NLP)

Outcome/predictors	B	SE B	β
Neutral leader prototype			
MBE active	0.02	0.28	0.03
Leader effectiveness	0.46	0.13	0.37
MBE active			
Neutral leader prototype	0.66	0.46	0.49
Trust in leader	-0.25	0.09	-0.35*
Tenure under Supervisor	0.70	0.62	0.12

Note. R^2 for predicting NLP = .14; R^2 for predicting MBEA = .10; *p < .05.

Table 30

Two Stage Least Squares Results (Revised) for Management-by-Exception Passive (MBEP) and Neutral Leader Prototype (NLP)

Outcome/predictors	B	SE B	β
Neutral leader prototype			
MBE passive	-0.03	0.21	-0.05
Leader effectiveness	0.47	0.31	0.37
MBE passive			
Neutral leader prototype	-1.48	0.60	-0.96*
Trust in leader	-0.38	0.13	-0.45*
Tenure under Supervisor	0.77	1.01	0.11

Note. R^2 for predicting NLP = .16; R^2 for predicting MBEP = .32; *p < .05.

Table 31

Two Stage Least Squares Results (Revised) for Laissez-faire Leadership (LL) and Poor Leader Prototype (PLP)

Outcome/predictors	B	SE B	β
Poor leader prototype			
Laissez-faire leadership	0.50	0.21	2.09*
Leader effectiveness	0.65	0.37	1.26
Laissez-faire leadership			
Poor leader prototype	-18.10	14.33	-4.33
Trust in leader	-3.06	2.00	-3.44
Tenure under Supervisor	4.16	3.63	0.52

Note. R^2 for predicting PLP = .11; R2 for predicting LL = .06; *p < .05.

influenced poor leader prototype, but poor leader prototype failed to significantly influence laissez-faire leadership.

Evaluation of the Respecified 2SLS Models

While preliminary results of the revised 2SLS models were positive, it was still necessary to assess the adequacy of these models in terms of multicollinearity and specification errors. To assess multicollinearity, each independent variable was regressed on the other exogenous predictor(s) for which they were common regressors in a single equation. The resulting R^2 values across all equations ranged from .00 to .64, the latter value resulting from regressing the instrumental version of good leader prototype on trust in leader. In comparison to the largest comparable R^2 value from similar analyses with the original model (.77), it was clear that the multicollinearity problems of the original 2SLS

models was less of an issue. Having sufficiently eliminated this problem afforded greater confidence in the structural parameter estimates from the revised models, as compared to those from the original models.

The second issue to evaluate in the revised models was specification error. Asher (1983) noted that the correlation among residuals from the second stage regression equations provides a means to assess the level of specification error in 2SLS models. Specifically, error terms contain the effects due to omitted variables in the model. Thus, if residual terms correlate highly, the corresponding equations likely omit the same or similar variables which are strong causal agents of the endogenous variables. Additionally, Duncan, Haller, and Portes (1971) suggested that negative correlations between residuals of equations pertaining to positively correlated endogenous variables (or vice versa) provide an indication that the error terms reflect model inadequacies (e.g., specification errors).

Based on results from this assessment, specification errors occurred among the revised 2SLS models involving good leader prototype. In particular, residuals from the equations between good leader prototype and attributed charisma, inspirational leadership, idealized influence, individual consideration, and intellectual stimulation all had negative correlations approaching unity (all $\underline{r}s > -.95$, $\underline{p} < .05$). Thus, the 2SLS models suffered from an omitted variable(s) problem. These specification errors occurred although the models were both theoretically and conceptually consistent with the original models. The other residual correlations were non-problematic. Hence, the remaining models (i.e.,

those between neutral leader prototype and transactional leader behaviors, or poor leader prototype and laissez-faire leadership) provided marginal statistical and conceptual support for their hypothesized relations, without specification errors.

Considering the specification errors, the results are inconclusive with respect to hypotheses 5, 6, and 7 using the respecified 2SLS models. Still, 5 of the 9 models supported the hypothesized nonrecursive relations according to the size and direction of the parameter estimates. Each of these confirmed models pertained to the relation between a transformational leader behavior and good leader prototype. Of these models, only intellectual stimulation showed a greater causal impact on good leader prototype as opposed to the reverse effect.

Several features of the models used to assess hypotheses 5 through 7 require further clarification. First, referring to Tables 23 through 31, these models generally accounted for more variance as shown by the resulting R^2 values when compared to the original models (cf., Tables 14 through 22). This suggests that the revised, more parsimonious models perform equally or better in overall prediction. Higher R^2 values indicate that more variance, and hence better prediction occurred despite the removal of predictors from the models.

Second, the trend in 8 of the 9 models was for leader prototype to have a larger effect on leader behavior. The standardized parameter estimates indicated that good leader prototype had a (slightly) greater causal effect on the following behaviors: attributed charisma, inspirational leadership, idealized influence, and individualized

consideration. Similarly, neutral leader prototype had a significant, negative causal effect on contingent reward and MBEP; however, neither contingent reward nor MBEP significantly influenced neutral leader prototype. Neither of the nonrecursive relations were significant between neutral leader prototype and MBEA, although the beta weights suggested that neutral leader prototype had the greater causal effect on MBEA (Table 29). The same is true of the poor leader prototype - laissez-faire leadership relation, although poor leader prototype significantly influenced laissez-faire leadership (Table 31). Hence, regardless of statistical confirmation of the reciprocal relations, leader prototype exerted (based on the beta weight magnitude) a greater causal influence on the respective leader behavior. The exception to this trend occurred with the good leader prototype and intellectual stimulation relation. Here, beta weights indicated that the greater causal impact among endogenous variables flows from intellectual stimulation to good leader prototype. Finally, consideration of the above discussion should emphasis that differences in beta weights were interpreted from a relative, not statistical, sense. However, given the consistent trend in 8 of 9 models, greater confidence is given to the conclusions.

The third point of clarification concerns the role of the exogenous variables (e.g., leader effectiveness, trust in leader, etc.) in the prediction equations at the second stage. In general, inspection of Tables 23 through 31 reveals that the beta weights for these exogenous variables were either low or nonsignificant despite moderate to high zero-order correlations with their respective endogenous variable. As James and Singh (1978) note, this data pattern provides dramatic evidence of reciprocal interaction given

the significant relations and relatively large beta weights among endogenous variables, as well as the moderate R^2 values. Indeed, in all the revised models except those pertaining to the relations between transactional leadership behaviors and neutral leader prototype, the exogenous variables were not significant in the second stage regressions (cf. Tables 23 through 31). For these latter models, trust in leader also had a significant effect on contingent reward, MBEA, and MBEP.

In summary, the second phase of this study provided inconclusive evidence in relation to the hypothesized nonrecursive relations between leader prototype and leader behaviors. The original models failed to provide adequate estimates of the structural parameters because of extreme multicollinearity. Upon respecifying the models, better structural parameter estimates resulted. In general, the revised models (1) accounted for more explained variance in the reciprocally relating endogenous variables, (2) produced parameter estimates consistent with reciprocal causal relations between leader prototype and leader behavior, and (3) demonstrated that leader prototypes exert slightly greater, or sometimes unidirectional, influence on leader prototype, with the exception of intellectual stimulation. Furthermore, the revised models did not suffer from multicollinearity problems.

However, analyses of the residuals among structural equations within models revealed that the revised models involving good leader prototype omitted important variable(s), constituting a specification error. This error is serious in that the pattern of relations, and hence conclusions drawn from them, remain open to alternative

explanations. Thus, the conclusion is that the nonrecursive relations could not be soundly assessed in the current study.

Assessment of Leader Behavior and Leader Prototype Influence on Work Outcomes

The third, and final phase of this study sought to confirm the nature of the combined influence of leader prototypes and leader behaviors on the work outcomes of job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. This phase of the study directly assessed the utility of looking at leader prototypes and leader behaviors in a unifying framework. To ignore either input (most often leader prototypes in research), is to disregard much useful information. For example, Table 32 displays the zero-order correlations between all the leader behaviors and each work outcome. Also, included in Table 32 are the first-order correlations which represent the effects of partialling leader prototypes from the zero-order correlations. The reduced magnitude of these first-order correlations dramatically illustrates the reduction in the relations between leader behaviors and work outcomes upon eliminating the influence of leader prototypes (i.e., implicit leadership theories).

Table 33 summarizes this reduction via difference scores[8] representing the difference between zero-order correlations and their first-order counterpart. As shown, controlling for leader prototypes has the greatest effect on relations with transformational leader behaviors, but considerably alters relations with transactional leader behaviors and

[8] These differences scores represent only the "drop" across two correlations. They should not be interpreted to represent the strength of a relation, a change score, or any definable construct, per se. They merely serve a descriptive purpose. See Tisak and Smith (1994) for more detail on the use of difference scores.

Table 32

Zero-order and First-Order Correlations between Specific Leader Behaviors and Work Outcomes

	Job satisfaction		Satisfaction with supervisi		Extra effort		Turnover intentions	
Leader Behaviors	Zero-order r	First-order r[a]	Zero-order r	First-order r	Zero-order r	First-order r	Zero-order r	First-order r
Attributed charisma	0.47*	0.31*	0.79*	0.63*	0.81*	0.66*	-0.47*	-0.38*
Inspirational leadership	0.50*	0.37*	0.73*	0.44*	0.83*	0.68*	-0.42*	-0.29*
Idealized influence	0.42*	0.23	0.73*	0.55*	0.78*	0.65*	-0.42*	-0.30*
Indiv. consideration	0.44*	0.21	0.76*	0.61*	0.81*	0.68*	-0.37*	-0.20
Intellectual stimulation	0.40*	0.13	0.65*	0.36*	0.78*	0.62*	-0.31*	-0.07
Contingent reward	0.41*	0.30*	0.66*	0.62*	0.79*	0.74*	-0.41*	-0.32*
MBE active	-0.21*	-0.26*	-0.19	-0.24*	0.05	-0.09	0.22*	0.29*
MBE passive	-0.54*	-0.48*	-0.76*	-0.68*	-0.62*	-0.60*	0.45*	0.43*
Laissez-faire leadership	-0.48*	-0.38*	-0.68*	-0.63*	-0.50*	-0.44*	0.40*	0.28*

Note. n = 66; indiv. = individual; MBE = management-by-exception; [a]good, neutral, and poor leader prototype are partialled from transformational, transactional, and laissez-faire leadership relations, respectively; *p < .05.

Table 33

Difference Scores[a] between Zero-order and First-Order[b] Correlations between Specific Leader Behaviors and Work Outcomes

Leader behaviors	Job satisfaction	Satisfaction with supervision	Extra effort	Turnover intentions
Attributed charisma	16	16	15	9
Inspirational leadership	13	29	15	13
Idealized Influence	19	18	13	12
Indiv. consideration	23	15	13	17
Intellectual stimulation	27	29	16	24
Contingent reward	11	4	5	9
MBE active	5	5	-14	-7
MBE passive	6	8	2	2
Laissez-faire leadership	10	5	6	12

Note. indiv. = individual; MBE = management-by-exception; [a]difference score = zero-order r - first-order r; [b]good, neutral, and poor leader prototypes are partialled from transformational, transactional, and laissez-faire leadership relations, respectively; decimal points omitted.

laissez-faire leadership as well. Across all leader behavior and outcome relations, controlling for respective leader prototype resulted in a median correlation drop of .13, a sizable reduction to ignore.

Results from the assessment of nonrecursive models generally established the leader prototypes as the causal influences of leader behaviors, although reciprocal relations

occurred with the transformational leader behaviors. As such, the expected relations as specified in hypotheses 8, 9, and 10 are as diagrammed below:

leader prototype ----> leader behavior ----> work outcome.

Accordingly, leadership influence operates in a mediation model framework. Namely, leader behaviors directly influence work outcomes and leader prototypes influence work outcomes indirectly by "passing" their effects through leader behaviors.

However, given the tentative nature of the findings from phase 2 of the study, leadership influence could possibly operate as follows:

leader behavior ----> leader prototype ----> work outcome.

This model may be particularly applicable with the good leader prototype--intellectual stimulation relation. Also, given the relative closeness of some of the beta weights depicting the nonrecursive relations, both specifications of the model were tested.

Nine models were assessed for each of the four outcomes yielding a total of 36 mediation models. As before, variable groupings consisted of transformational leader behaviors and good leader prototype, transactional leader behaviors and neutral leader prototype, and laissez-faire leadership and poor leader prototype. Tables 34 through 42 show the results for each of the mediation models. (Note that each table contains results pertaining to all work outcomes.) Each table presents results for three separate regression models, labeled steps[9], as proposed by Baron and Kenny (1986). Steps 1 and 2 of each

[9] The use of "steps" should not be construed to mean hierarchical regression procedures (see Cohen & Cohen, 1983) were employed here. Steps was used to differentiate the three regressions conducted for each model. To use the term model would be confusing given the previous use of the term, model (e.g., nine models being evaluated).

table describe the effect of leader prototype on leader behavior, and leader prototype on work outcomes, respectively. Step 3 of each table shows the effect of both leader prototype and leader behavior on work outcomes. Assessment of the regression parameters across the three steps provided a test of the mediation model as explained in the Statistical Approach section.

Hypothesis 8 states that the transformational leadership behaviors mediate the relation between good leader prototype and work outcomes. As shown in Tables 34 through 38, hypothesis 8 was supported as indicated by the pattern of relations. Good leader prototype positively influenced all of the transformational leader behaviors, thereby upholding the first requirement for confirming the mediation models. The second requirement also received support in that good leader prototype significantly related to job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. (Note that these relations as defined in step 2 apply across all nine models.) Finally, good leader prototype and each of the transformational leader behaviors (individually) significantly predicted each of the outcome variables. Tables 34 through 38 provides R^2s (all significant) resulting from the step 3 regressions. Most importantly, the effect of good leader prototype in the majority of step 3 regressions were either nonsignificant or, if significant, considerable lower in magnitude as compared to the effect of respective transformational leader behaviors on each work outcome. Therefore, these regression patterns generally confirmed the mediation model as stated in hypothesis 8.

Table 34

Assessment of Mediating Effects of Attributed Charisma Between Good Leader Prototype and Work Outcomes

	Good leader prototype			Attributed charisma				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Attributed charisma	1.25	0.12	0.75*				107.23*	0.56
Step 2								
Job satisfaction	0.40	0.10	0.41*				17.35*	0.17
Satisfaction with supervision	0.74	0.09	0.67*				68.65*	0.45
Extra effort	0.49	0.07	0.64*				56.91*	0.40
Turnover intentions	-0.28	0.08	-0.35*				11.89*	0.12
Step 3								
Job satisfaction	0.13	0.14	0.13	0.22	0.09	0.37*	12.55*	0.23
Satisfaction with supervision	0.19	0.11	0.17	0.44	0.07	0.67*	75.10*	0.64
Extra effort	0.05	0.08	0.07	0.35	0.05	0.76*	78.67*	0.65
Turnover intentions	-0.01	0.12	-0.01	-0.22	0.07	-0.46*	11.51*	0.22

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 35

Assessment of Mediating Effects of Inspirational Leadership Between Good Leader Prototype and Work Outcomes

	Good leader prototype			Inspirational leadership				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Inspirational leadership	1.71	0.14	0.80*				146.77*	0.64
Step 2								
Job satisfaction	0.40	0.10	0.41*				17.35*	0.17
Satisfaction with supervision	0.74	0.09	0.67*				68.65*	0.45
Extra effort	0.49	0.07	0.64*				56.91*	0.40
Turnover intentions	-0.28	0.08	-0.35*				11.89*	0.12
Step 3								
Job satisfaction	0.05	0.15	0.05	0.21	0.07	0.46*	13.60*	0.25
Satisfaction with supervision	0.27	0.13	0.24*	0.27	0.06	0.54*	51.74*	0.56
Extra effort	-0.05	0.08	-0.07	0.32	0.04	0.88*	91.60*	0.69
Turnover intentions	-0.04	0.13	-0.05	-0.14	0.06	-0.38*	8.84*	0.18

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 36

Assessment of Mediating Effects of Idealized Influence between Good Leader Prototype and Work Outcomes

	Good leader prototype			Idealized influence				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Idealized influence	1.36	0.15	0.71*				84.77*	0.50
Step 2								
Job satisfaction	0.40	0.10	0.41*				17.35*	0.17
Satisfaction with supervision	0.74	0.09	0.67*				68.65*	0.45
Extra effort	0.49	0.07	0.64*				56.91*	0.40
Turnover intentions	-0.28	0.08	-0.35*				11.89*	0.12
Step 3								
Job satisfaction	0.23	0.14	0.24	0.13	0.07	0.25	10.48*	0.20
Satisfaction with supervision	0.34	0.11	0.31*	0.30	0.06	0.52*	57.80*	0.58
Extra effort	0.12	0.07	0.16	0.27	0.04	0.67*	69.97*	0.63
Turnover intentions	-0.09	0.11	-0.11	-0.15	0.06	-0.35*	9.31*	0.18

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 37

Assessment of Mediating Effects of Individualized Consideration Between Good Leader Prototype and Work Outcomes

	Good leader prototype			Individualized consideration				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Individualized consideration	1.29	0.14	0.79*				80.36*	0.49
Step 2								
Job satisfaction	0.40	0.10	0.41*				17.35*	0.17
Satisfaction with supervision	0.74	0.09	0.67*				68.65*	0.45
Extra effort	0.49	0.07	0.64*				56.91*	0.40
Turnover intentions	-0.28	0.08	-0.35*				11.89*	0.12
Step 3								
Job satisfaction	0.21	0.13	0.21	0.15	0.07	0.29*	11.30*	0.21
Satisfaction with supervision	0.29	0.10	0.27*	0.34	0.06	0.58*	67.49*	0.62
Extra effort	0.10	0.07	0.13	0.30	0.04	0.73*	85.24*	0.67
Turnover intentions	-0.15	0.11	-0.18	-0.11	0.06	-0.24	7.59*	0.15

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 38

Assessment of Mediating Effects of Intellectual Stimulation Between Good Leader Prototype and Work Outcomes

	Good leader prototype			Intellectual stimulation				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Intellectual stimulation	1.25	0.16	0.65*				60.19*	0.42
Step 2								
Job satisfaction	0.40	0.10	0.41*				17.35*	0.17
Satisfaction with supervision	0.74	0.09	0.67*				68.65*	0.45
Extra effort	0.49	0.07	0.64*				56.91*	0.40
Turnover intentions	-0.28	0.08	-0.35*				11.89*	0.12
Step 3								
Job satisfaction	0.26	0.13	0.27*	0.11	0.07	0.23	10.32*	0.20
Satisfaction with supervision	0.47	0.11	0.43*	0.21	0.06	0.37*	46.26*	0.53
Extra effort	0.17	0.07	0.22*	0.26	0.04	0.63*	72.01*	0.64
Turnover intentions	-0.21	0.11	-0.26	-0.06	0.06	-0.14	6.46	0.14

Note. Empty cells were not estimated; N = 86; *p < .05.

For extra effort, good leader prototype and intellectual stimulation were significant in step 3 regressions; however, intellectual stimulation had the greater influence on extra effort, thereby upholding the proposed mediation model. Similarly, in predicting satisfaction with supervision, good leader prototype was significant in step 3 regressions with inspirational leadership (Table 35), idealized influence (Table 36), and individualized consideration (Table 37), although each of these leader behavior variables were also significant and had the greater effect on satisfaction with supervision. Baron and Kenny (1986) argued that it is quite unrealistic to expect the coefficient of the antecedent variable (good leader prototype in this instance) to reduce to zero. Indeed, this pattern supports a partial mediation model (James and Brett; 1984), because the effects of the antecedent are still significant (though relatively diminished) in step 3 regressions. The key for supporting the mediation modes as hypothesized is to observe a significantly reduced prototype effect in step 3 regressions relative to that of the leader behavior.

Some exceptions to confirming hypothesis 8 occurred. With intellectual stimulation (Table 38), step 3 coefficients for good leader prototype reached significance, whereas those for intellectual stimulation did not reach significance in predicting job satisfaction. For predicting turnover intentions, neither good leader prototype nor intellectual stimulation reached significance in step 3 regressions. Finally, the beta weight for good leader prototype exceeded that for intellectual stimulation in predicting satisfaction with supervision. Thus, the hypothesized mediation model was not empirically

substantiated with regard to the influence of good leader prototype and intellectual stimulation on job satisfaction, satisfaction with supervision, and turnover intentions.

Hypothesis 9 states that the transactional leader behaviors mediate the relation between neutral leader prototype and the work outcomes. Tables 39 through 41 provide results pertaining to these relations. As shown, neutral leader prototype significantly predicted all of the transactional leader behaviors, thereby supporting the first requirement for confirming the mediation models with transactional leader behaviors. The second requirement also received support in that neutral leader prototype significantly predicted satisfaction with supervision and extra effort. Because the step 2 regressions were not significant for job satisfaction and turnover intentions, the mediation models with respect to these outcomes do not hold in a strict statistical sense. Finally, neutral leader prototype and each of the transactional leader behaviors (individually) significantly predicted each of the outcome variables in step 3 regressions (see Tables 39 through 41).

Inspecting the step 3 regressions, support for each mediation model involving satisfaction with supervision and extra effort occurred with the transactional behaviors of contingent reward and MBEP. Neutral leader prototype and contingent reward or MBEP significantly predicted both satisfaction with supervision and extra effort. Furthermore, the coefficient for neutral leader prototype failed to reach statistical significance or was significantly reduced in the step 3 regressions predicting satisfaction with supervision and extra effort. For the mediation effects of MBEA, step 3 regressions contradicted the proposed mediation model for satisfaction with supervision and extra effort. Not only

Table 39

Assessment of Mediating Effects of Contingent Reward Between Neutral Leader Prototype and Work Outcomes

	Neutral leader prototype			Contingent reward				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Contingent reward	0.60	0.19	0.33*				9.53*	0.11
Step 2								
Job satisfaction	0.15	0.11	0.15				1.97	0.02
Satisfaction with supervision	0.29	0.12	0.26*				5.94*	0.07
Extra effort	0.29	0.08	0.37*				12.58*	0.14
Turnover intentions	-0.08	0.09	-0.09				0.71	0.01
Step 3								
Job satisfaction	0.02	0.11	0.02	0.22	0.06	0.40*	8.08*	0.17
Satisfaction with supervision	0.06	0.10	0.05	0.39	0.05	0.65*	31.42*	0.44
Extra effort	0.10	0.06	0.12	0.32	0.03	0.75*	69.65*	0.64
Turnover intentions	0.04	0.09	0.04	-0.19	0.05	-0.42*	7.93*	0.17

Note. Empty cells were not estimated; N = 82; *p < .05.

Table 40

Assessment of Mediating Effects of MBE Active Between Neutral Leader Prototype and Work Outcomes

	Neutral leader prototype			MBE active				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
MBE active	0.40	0.13	0.32*				9.82*	0.10
Step 2								
Job satisfaction	0.15	0.11	0.15				1.97	0.02
Satisfaction with supervision	0.29	0.12	0.26*				5.94*	0.07
Extra effort	0.29	0.08	0.37*				12.58*	0.14
Turnover intentions	-0.08	0.09	-0.09				0.71	0.01
Step 3								
Job satisfaction	0.24	0.11	0.25*	-0.23	0.09	-0.29*	4.60*	0.10
Satisfaction with supervision	0.40	0.12	0.36*	-0.27	0.09	-0.31*	7.50*	0.15
Extra effort	0.31	0.08	0.39*	-0.05	0.07	-0.07	6.79*	0.14
Turnover intentions	-0.15	0.09	-0.18	0.18	0.07	0.28*	3.51*	0.08

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 41

Assessment of Mediating Effects of MBE Passive Between Neutral Leader Prototype and Work Outcomes

	Neutral leader prototype			MBE passive				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
MBE passive	-0.49	0.16	-0.32*				9.62*	0.10
Step 2								
Job satisfaction	0.15	0.11	0.15				1.97	0.02
Satisfaction with supervision	0.29	0.12	0.26*				5.94*	0.07
Extra effort	0.29	0.08	0.37*				12.58*	0.14
Turnover intentions	-0.08	0.09	-0.09				0.71	0.01
Step 3								
Job satisfaction	-0.02	0.10	-0.02	-0.35	0.06	-0.54*	16.54*	0.29
Satisfaction with supervision	0.03	0.09	0.03	-0.52	0.06	-0.72*	46.25*	0.53
Extra effort	0.15	0.07	0.19*	-0.29	0.05	-0.56*	29.70*	0.42
Turnover intentions	0.05	0.08	0.06	0.25	0.05	0.47*	10.64*	0.21

Note. Empty cells were not estimated; N = 85; *p < .05.

were the effects of neutral leader prototype significant in the step 3 regressions, but the corresponding beta weights were larger, indicating that prototypes contributed more than MBEA in the prediction (see Table 40).

Finally, the mediation models predicting job satisfaction and turnover intentions provided partial support for contingent reward, MBEA, and MBEP as mediators of the neutral leader prototypes. As noted above, neutral leader prototype failed to significantly affect job satisfaction and turnover intentions in the step 2 regressions. Despite this breakdown in the process of confirming mediation, the step 3 regressions conformed to their hypothesized pattern. Namely, coefficients for neutral leader prototype were either nonsignificant, or if significant, less in magnitude than those of the respective leader behavior.

The final hypothesis advanced in this study states that poor leader prototype mediates the influence of laissez-faire leadership on work outcomes. As shown in Table 42, poor leader prototype significantly predicted laissez-faire leadership in the step 1 regression. Similarly, poor leader prototype significantly predicted job satisfaction, satisfaction with supervision, extra effort, and turnover intentions in the stage 2 regressions. Finally, both poor leader prototype and laissez-faire leadership combined to significantly influence job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. Furthermore, as necessary for confirmation of the mediation model, poor leader prototype had either a nonsignificant or, if significant, a diminished magnitude of effect compared to laissez-faire leadership in each work outcome regression. Laissez-

Table 42

Assessment of Mediating Effects of Laissez-faire Leadership Between Poor Leader Prototype and Work Outcomes

	Poor leader prototype			Laissez-faire leadership				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Laissez-faire leadership	1.08	0.47	0.25*				5.34*	0.06
Step 2								
Job satisfaction	-0.67	0.27	-0.26*				6.06*	0.07
Satisfaction with supervision	-1.46	0.27	-0.50*				28.20*	0.25
Extra effort	-0.61	0.22	-0.30*				8.08*	0.09
Turnover intentions	0.59	0.22	0.28*				6.94*	0.08
Step 3								
Job satisfaction	-0.39	0.25	-0.15	-0.26	0.06	-0.45*	14.04*	0.26
Satisfaction with supervision	-1.04	0.21	-0.36*	-0.39	0.05	-0.59*	56.67*	0.58
Extra effort	-0.38	0.20	-0.19	-0.21	0.04	-0.45*	16.03*	0.28
Turnover intentions	0.41	0.22	0.19	0.17	0.05	0.35*	9.85*	0.19

Note. Empty cells were not estimated; N = 85; *p < .05.

faire leadership significantly contributed to each of the outcomes in the step 3 regressions. Hence, laissez-faire leadership directly influenced work outcomes, while the effects of poor leader prototype indirectly influenced work outcomes via their effects on laissez-faire leadership. These findings provided confirmation for hypothesis 10.

As noted above, it still remains possible that the mediation model operates differently. For example, leader prototypes might mediate the effect of leader behaviors on work outcomes. The mediation models to assess this contention are as follows. Step 1 regresses leader prototype on leader behavior, step 2 regresses work outcomes on each leader behavior, and step 3 regresses both leader prototype and leader behavior on each work outcome. Again, to confirm mediation both step 1 and step 2 predictors must significantly contribute to explained variance in their respective outcomes. Additionally, step 3 regressions must display a nonsignificant or substantial drop in the effect of leader behavior relative to leader prototype in influencing work outcomes.

Tables 43 through 51 present the results to these mediation models. As shown, the pattern of coefficients failed to support leader prototype as the mediator. In most of the step 3 equations, leader behavior continued to contribute significantly and substantially in predicting each work outcome, relative to leader prototypes. This trend bolsters confidence in the mediation models as originally hypothesized and empirically supported.

As with the original mediation models, those relations involving intellectual stimulation and job satisfaction, satisfaction with supervision, and turnover intentions

Table 43

Assessment of Mediating Effects of Good Leader Prototype between Attributed Charisma Leadership and Work Outcomes

	Good leader prototype			Attributed charisma				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Good leader prototype				0.45	0.04	0.75*	107.23*	0.56
Step 2								
Job satisfaction				0.28	0.06	0.47*	24.27*	0.22
Satisfaction with supervision				0.52	0.04	0.79*	143.65*	0.63
Extra effort				0.38	0.03	0.81*	157.73*	0.65
Turnover intentions				-0.23	0.05	-0.47*	23.29*	0.22
Step 3								
Job satisfaction	0.13	0.14	0.14	0.22	0.09	0.37*	12.55*	0.23
Satisfaction with supervision	0.19	0.11	0.17	0.44	0.07	0.67*	75.10*	0.64
Extra effort	0.05	0.08	0.07	0.35	0.05	0.76*	78.67*	0.65
Turnover intentions	-0.01	0.12	-0.01	-0.22	0.07	-0.46*	11.51*	0.22

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 44

Assessment of Mediating Effects of Good Leader Prototype between Inspirational Leadership and Work Outcomes

	Good leader prototype			Inspirational leadership				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Good leader prototype				0.37	0.03	0.80*	146.77*	0.64
Step 2								
Job satisfaction				0.23	0.04	0.50*	27.39*	0.25
Satisfaction with supervision				0.37	0.04	0.73*	96.12*	0.53
Extra effort				0.30	0.02	0.83*	183.91*	0.69
Turnover intentions				-0.16	0.04	-0.42*	17.77*	0.17
Step 3								
Job satisfaction	0.05	0.15	0.05	0.21	0.07	0.46*	13.60*	0.25
Satisfaction with supervision	0.27	0.13	0.24*	0.27	0.06	0.54*	51.74*	0.56
Extra effort	-0.05	0.08	-0.07	0.32	0.04	0.88*	91.60*	0.69
Turnover intentions	-0.04	0.13	-0.05	-0.14	0.06	-0.38*	8.84*	0.18

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 45

Assessment of Mediating Effects of Good Leader Prototype between Idealized Influence and Work Outcomes

	Good leader prototype			Idealized influence				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Good leader prototype				0.37	0.04	0.71*	84.77*	0.50
Step 2								
Job satisfaction				0.21	0.05	0.42*	17.60*	0.17
Satisfaction with supervision				0.42	0.04	0.73*	96.92*	0.54
Extra effort				0.32	0.03	0.78*	134.14*	0.61
Turnover intentions				-0.18	0.04	-0.42*	18.13*	0.18
Step 3								
Job satisfaction	0.23	0.14	0.24	0.13	0.07	0.25	10.48*	0.20
Satisfaction with supervision	0.34	0.11	0.31*	0.30	0.06	0.52*	57.80*	0.58
Extra effort	0.12	0.07	0.16	0.27	0.04	0.67*	69.97*	0.63
Turnover intentions	-0.09	0.11	-0.11	-0.15	0.06	-0.35*	9.31*	0.18

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 46

Assessment of Mediating Effects of Good Leader Prototype between Individualized Consideration and Work Outcomes

	Good leader prototype			Individualized consideration				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Good leader prototype				0.38	0.04	0.70*	80.36*	0.49
Step 2								
Job satisfaction				0.23	0.05	0.44*	19.85*	0.19
Satisfaction with supervision				0.45	0.04	0.76*	117.22*	0.58
Extra effort				0.34	0.03	0.81*	166.09*	0.66
Turnover intentions				-0.16	0.04	-0.37*	13.43*	0.14
Step 3								
Job satisfaction	0.21	0.13	0.21	0.15	0.07	0.29*	11.30*	0.21
Satisfaction with supervision	0.29	0.10	0.27*	0.34	0.06	0.58*	67.49*	0.62
Extra effort	0.10	0.07	0.13	0.30	0.04	0.73*	85.24*	0.67
Turnover intentions	-0.15	0.11	-0.18	-0.11	0.06	-0.24	7.59*	0.15

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 47

Assessment of Mediating Effects of Good Leader Prototype between Intellectual Stimulation and Work Outcomes

	Good leader prototype			Intellectual stimulation				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Good leader prototype				0.34	0.04	0.65*	60.19*	0.42
Step 2								
Job satisfaction				0.20	0.05	0.40*	15.79*	0.16
Satisfaction with supervision				0.37	0.05	0.65*	60.95*	0.42
Extra effort				0.32	0.03	0.78*	128.77*	0.61
Turnover intentions				-0.13	0.04	-0.31*	8.96*	0.10
Step 3								
Job satisfaction	0.26	0.13	0.27*	0.11	0.07	0.23	10.32*	0.20
Satisfaction with supervision	0.47	0.11	0.43*	0.21	0.06	0.37*	46.26*	0.53
Extra effort	0.17	0.07	0.22*	0.26	0.04	0.63*	72.01*	0.64
Turnover intentions	-0.21	0.11	-0.26	-0.06	0.06	-0.14	6.46	0.14

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 48

Assessment of Mediating Effects of Neutral Leader Prototype between Contingent Reward and Work Outcomes

	Neutral leader prototype			Contingent reward				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Neutral leader prototype				0.18	0.06	0.33*	9.53*	0.11
Step 2								
Job satisfaction				0.22	0.05	0.41*	16.31*	0.17
Satisfaction with supervision				0.40	0.05	0.66*	63.02*	0.44
Extra effort				0.34	0.03	0.79*	132.96*	0.62
Turnover intentions				-0.18	0.05	-0.41*	15.86*	0.17
Step 3								
Job satisfaction	0.02	0.11	0.02	0.22	0.06	0.40*	8.08*	0.17
Satisfaction with supervision	0.06	0.10	0.05	0.39	0.05	0.65*	31.42*	0.44
Extra effort	0.10	0.06	0.12	0.32	0.03	0.75*	69.65*	0.64
Turnover intentions	0.04	0.09	0.04	-0.19	0.05	-0.42*	7.93*	0.17

Note. Empty cells were not estimated; N = 82; *p < .05.

Table 49

Assessment of Mediating Effects of Neutral Leader Prototype between MBE Active and Work Outcomes

	Neutral leader prototype			MBE active				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Neutral leader prototype				0.26	0.08	0.32*	9.82*	0.10
Step 2								
Job satisfaction				-0.16	0.08	-0.21*	3.89*	0.04
Satisfaction with supervision				-0.17	0.09	-0.19	3.12	0.04
Extra effort				0.03	0.07	0.05	0.25	0.00
Turnover intentions				0.14	0.07	0.22*	4.21*	0.05
Step 3								
Job satisfaction	0.24	0.11	0.25*	-0.23	0.09	-0.29*	4.60*	0.10
Satisfaction with supervision	0.40	0.12	0.36*	-0.27	0.09	-0.31*	7.50*	0.15
Extra effort	0.31	0.08	0.39*	-0.05	0.07	-0.07	6.79*	0.14
Turnover intentions	-0.15	0.09	-0.18	0.18	0.07	0.28*	3.51*	0.08

Note. Empty cells were not estimated; N = 86; *p < .05.

Table 50

Assessment of Mediating Effects of Neutral Leader Prototype between MBE Passive and Work Outcomes

	Neutral leader prototype			MBE passive				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Neutral leader prototype				-0.21	0.07	-0.32*	9.62*	0.10
Step 2								
Job satisfaction				-0.34	0.06	-0.54*	33.43*	0.29
Satisfaction with supervision				-0.52	0.05	-0.73*	93.29*	0.53
Extra effort				-0.32	0.04	-0.62*	52.77*	0.39
Turnover intentions				0.24	0.05	0.45*	21.15*	0.20
Step 3								
Job satisfaction	-0.02	0.10	-0.02	-0.35	0.06	-0.54*	16.54*	0.29
Satisfaction with supervision	0.03	0.09	0.03	-0.52	0.06	-0.72*	46.25*	0.53
Extra effort	0.15	0.07	0.19*	-0.29	0.05	-0.56	29.70*	0.42
Turnover intentions	0.05	0.08	0.06	0.25	0.05	0.47*	10.64*	0.21

Note. Empty cells were not estimated; N = 85; *p < .05.

Table 51

Assessment of Mediating Effects of Poor Leader Prototype between Laissez-faire Leadership and Work Outcomes

	Poor leader prototype			Laissez-faire leadership				
Step/Dependent variable	B	SE B	β	B	SE B	β	F	R^2
Step 1								
Poor leader prototype				0.06	0.02	0.25*	5.34*	0.06
Step 2								
Job satisfaction				-0.28	0.06	-0.48*	25.31*	0.23
Satisfaction with supervision				-0.45	0.05	-0.68	70.54*	0.46
Extra effort				-0.23	0.04	-0.50*	27.43*	0.25
Turnover intentions				0.19	0.05	0.40*	15.74*	0.16
Step 3								
Job satisfaction	-0.39	0.25	-0.15	-0.26	0.06	-0.45*	14.04*	0.25
Satisfaction with supervision	-1.04	0.21	-0.36*	-0.39	0.05	-0.59*	56.67*	0.58
Extra effort	-0.38	0.20	-0.19	-0.21	0.04	-0.45*	16.03*	0.28
Turnover intentions	0.41	0.22	0.19	0.17	0.05	0.35*	9.85*	0.19

Note. Empty cells were not estimated; N = 85; *p < .05.

reversed the pattern of expected mediation (see Table 47). For these relations, the greater influence of good leader prototype relative to intellectual stimulation in the step 3 regressions supported the mediating role of good leader prototype. Similar "reverse" results occurred with MBEA and neutral leader prototype in predicting satisfaction with supervision (see Table 49). As the pattern of coefficients in Table 49 dictate, neutral leader prototype mediated the relation between MBEA and satisfaction with supervision. Aside from these exceptions, leader behaviors do not influence work outcomes via their corresponding leader prototype. Conversely, the prevalence of evidence from this study suggested that leader prototypes influence work outcomes through the mediating effects of leader behaviors.

In summary, the third and final phase of this study provided support for the proposed mediating models, as well as some partial mediation effects. Transformational leader behaviors mediated the effects of good leader prototype on job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. Similarly, transactional behaviors mediated the effects of neutral leader prototype on these work outcomes. And laissez-faire leadership mediated the effects of poor leader prototype on these work outcomes. Across all mediation models, few exceptions to this pattern surfaced. Leader prototypes and leader behaviors combined to influence job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. And for the most part, leader behaviors directly influenced these work outcomes, and leader prototypes exerted their effects on work outcomes via mediation by leader behaviors.

Discussion

This study investigates the relation between implicit theories of leadership held by followers and the specific behaviors exhibited by leaders. Specifically, it investigates the role of leader prototypes within the framework of transformational and transactional leadership theory. How these leadership components relate to each other, as well as their combined influence on job satisfaction, satisfaction with supervision, extra effort, and turnover intentions are the major concerns.

Key Findings

Replication of Prior Transformational, Transactional, and Laissez-faire Leadership Effects. Phase 1 of this study successfully replicates the typical findings reported in investigations of transformational and transactional leadership. First, each transformational leader behavior and contingent reward positively relates to job satisfaction, satisfaction with supervision, and extra effort, and negatively relates to turnover intentions. Similar results abound in the literature. For example, Seltzer and Bass (1990) report moderate to high positive correlations between transformational leader behaviors and subordinate extra effort and satisfaction. Previous investigations also note the positive effects of contingent reward behavior (e.g., Avolio et al., 1988), thereby highlighting this leadership style as necessary for effective organizational functioning (Bass, 1985a). Furthermore, some researchers argue that the transformational leader behaviors and contingent reward comprise an active leadership approach which accounts

for their positive influence on work outcomes (e.g., Bycio et al., 1995). The current study also suggests this, particularly when considering results for laissez-faire leadership.

Laissez-faire leadership produces effects which are opposite, albeit comparable in magnitude, to those noted for transformational leadership. Specifically, laissez-faire leadership negatively relates to job satisfaction, satisfaction with supervision, and extra effort, and positively relates to turnover intentions. Kirby et al. (1992) similarly note the negative relation between satisfaction with supervision and laissez-faire leadership. Among other outcomes, laissez-faire leadership has a negative relation with performance (Bass, 1981; Yammarino et al, 1993) and rated leader effectiveness (Avolio & Yammarino, 1990). Clearly, laissez-faire leadership adversely influences work outcomes, whereas transformational leadership and contingent reward behavior positively influences work outcomes. This comparison emphasizes the necessity for leadership of an active form, in general (cf., Bycio et al., 1995), and the potential benefits of attributed charisma, inspirational leadership, idealized influence, individualized consideration, intellectual stimulation, and contingent reward behavior, in particular.

Theoretically, the transactional leader behaviors of MBEP and MBEA fall between the extreme styles of transformational (i.e., active) and laissez-faire leadership in their relations with work outcomes. However, MBEP exhibits a pattern of effects comparable to those observed for laissez-faire leadership. In fact, the magnitude of effects for MBEP slightly exceed those found for laissez-faire leadership. Thus, the supervisor

who attempts leadership only when chronic situations or problems arise, does more harm than the leader who abdicates leadership roles altogether.

In terms of MBEA, results indicates a small, negative relation with job satisfaction and a small, positive relation with turnover intentions. MBEA does not relate to either satisfaction with supervision or extra effort. This pattern corresponds to what is generally reported for MBE as measured by earlier MLQ versions (i.e., no active/passive distinction; see Yammarino et al., 1993).

Overall, attributed charisma (and inspirational appeal) have the most positive relations with work outcomes, while laissez-faire leadership (and MBEP) have the most negative relations with work outcomes. The fact that attributed charisma and laissez-faire leadership do not always have the absolutely strongest positive and negative relations with work outcomes reflects recent psychometric improvements to the MLQ-5X. Neither inspirational leadership nor MBEP received much independent attention in previous research; both were subsumed under other measures (i.e., charisma and MBE), although some more recent investigations made the finer distinctions (e.g., Yammarino et al., 1993).

In sum, phase 1 replicates the typical findings from the transformational and transactional leadership framework, thereby establishing a sound basis for exploring the role of implicit leadership theories within this framework. This is an important avenue of investigation. Although the principles of transformational and transactional leadership apply across multiple research designs (e.g., Yammarino et al., 1993), study participants (see Bass, 1985a; 1990), and organizational exigencies (Ehrlich et al., 1990), the role of

implicit leader theories is not often considered (e.g., Bass & Avolio, 1989; Kirby et al, 1992) in investigating the leadership process under transformational and transactional leaders.

Relation between Implicit Leader Theories and Leader Behaviors.

Understanding the role of implicit leadership theories within the transformational and transactional leadership framework begins by clarifying the nature of the relation between these leadership perspectives. Based on the literature, it is reasonable to assume a relation between good leader prototype and transformational behaviors, neutral leader prototype and transactional leader behaviors, and poor leader prototype and laissez-faire leadership. Furthermore, it is reasonably to assume that any of these relations might be categorized by reciprocal interaction, as opposed to unidirectional influence.

In general, test of the 2SLS models were inconclusive. The pattern of results do suggest that good leader prototype and transformational leader behaviors reciprocally interact, with leader prototype exerting a slightly stronger causal influence on specific leader behavior descriptions. However, these results were tempered by specific errors in the respecified models.

This nonrecursive pattern of results holds for relations with attributed charisma, inspirational leadership, idealized influence, and individualized consideration, but not with intellectual stimulation. In this latter model, intellectual stimulation exerts the slightly greater causal influence on good leader prototype, thus reversing the hypothesized pattern of effects. Other researchers have noted seemingly anomalous findings with

intellectual stimulation in comparison to the other transformational leader behaviors (e.g., Seltzer & Bass, 1990). For example, Seltzer and Bass found an inverse relation between intellectual stimulation and leader effectiveness and subordinate satisfaction. They argued that intellectual stimulation has a stress inducing component as it requires the adoption of non status quo practices, and this stress component accounts for the inverse relation.

In this study, it is hard to speculate about the observed differences between intellectual stimulation and the other transformational leadership factors. Indeed, all of the transformational leader behaviors have highly similar patterns of relations (i.e., correlations) with the other study variables. This suggests that some unmeasured factors influence the intellectual stimulation -- work outcome relations. Although stress has been suggested, other possibilities include the degree of work routinization, work accountability, and rewards for creative input.

This study does not support the hypothesized reciprocal relations between neutral leader prototype and transactional leader behaviors. The pattern of results show that the neutral leader prototype significantly influences contingent reward and MBEP, but not MBEA. However, neither contingent reward, MBEA, nor MBEP significantly influences neutral leader prototype. Thus, neutral leader prototypes exert unidirectional effects on transactional leader behaviors. These results fit the perspective of implicit leadership theories (e.g., Lord et al., 1984). Namely, prototypes develop to provide the basis for interpreting and processing leader behaviors. In this sense, the establishment of

leader prototypes most often precedes more behaviorally concrete interpretations of leadership.

Finally, laissez-faire leadership significantly influences poor leader prototype; however, poor leader prototype does not influence laissez-faire leadership. This finding likely represents an anomaly, given the measurement problems encountered with the poor leader prototype measure. In fact, the revised 2SLS model depicting this relation was characterized by high standard errors for parameter estimates, further suggesting the existence of measurement problems when assessing the laissez-faire leadership and poor leader prototype relation.

While inconclusive, the results from phase 2 of the study are important in several ways. First, they begin to address the nature of the relation between implicit leadership theories and transformational, transactional, and laissez-faire leader behaviors. While researchers have speculated that implicit theories are operating (e.g., Kirby et al, 1992), no research has successfully described the exact nature of their relations with these leader behaviors. Second, phase 2 findings emphasize the active role of the follower. Implicit leadership theories represent global notions of leadership which are highly consistent across individuals and settings (Lord et al., 1978; Offermann et al., 1994). Hence, people enter into the leader-follower relationship with a preconceived notion of what traits coincide with a good versus poor, or effective versus ineffective leader (Eden & Leviatan, 1975). If follows that leaders matching the positive aspects of a follower's implicit leadership theory possess a more effectual basis for inducing favorable follower

behaviors. After all, empirical research demonstrates that followers react to leaders partly on the basis of implicit theories of leadership.

Most importantly, the findings from phase 2 of this study establish a tentative basis for assessing the combined influence of leader prototypes and leader behaviors on work outcomes. Opposite to the frequently adopted approach of absolving leader behavior descriptions from the influence of implicit theories (cf., Gioia & Sims, 1985), the role of implicit leadership theories was incorporated into the larger theoretical framework describing the leadership process under transformational and transactional leadership (Offermann et al., 1994). Leader behavior influences subordinate behaviors; however, subordinate's implicit leadership theories also influence ascribed leader behaviors.

Bass (1981) makes this same point in reflecting on observed high intercorrelations among certain leadership styles. Specifically, Bass notes that "errors of leniency and halo may be involved....Nevertheless subordinate perceptions of their leaders may be just as influential as the actual behavior of the leaders" (p. 393). Thus, the influential basis of leader prototypes (i.e., implicit leader theories) and specific leader behaviors (i.e., transformational, transactional, or laissez-faire leadership) together provide for better representation of the leadership process.

Combined Influence of Implicit Leader Theories and Leader Behaviors on Work Outcomes. Phase 3 of this study investigates the nature of the combined influence of leader prototypes and leader behaviors on job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. The findings for phase 3 generally support the

mediation models as originally specified. Good leader prototype indirectly influences each of the work outcomes via the mediating effects of attributed charisma, inspirational leadership, idealized influence, and individualized consideration. Neutral leader prototype influences each of the work outcomes via the mediating effects of contingent reward, and MBEP. And poor leader prototype influences each of the work outcomes via the mediating effects of laissez-faire leadership. Exceptions to the mediation models as hypothesized occurs with good leader prototype and intellectual stimulation, as well as with neutral leader prototype and MBEA. In both instances, the pattern of effects indicate that both leader prototypes and leader behaviors exert direct effects on work outcomes. There was also evidence of partial mediation is some of the models noted above, whereby prototype effects on work outcomes where both mediated and direct.

Further Interpretation of Study Findings

Several features of the current findings require additional consideration. First, the results of this study support the contention of Offermann et al. (1994) that explicitly incorporating implicit leader theories into other theoretical frameworks would expand the knowledge base regarding the leadership process. Researchers of transformational and transactional leadership only give peripheral attention to implicit leadership theories. For example, Bass and Avolio (1989) gathered leader prototypicality ratings to use in partialling variance from correlations. They noted a sharp drop in zero-order correlations between leader behaviors and outcomes upon controlling for leader prototype effects; however, they made no attempt to formulate an explicit role of implicit theories within

their framework. In the current study, the significant zero-order correlations between leader prototypes and work outcomes suggests that partialling the effects of prototypes from work outcomes may overlook important contributions to explained variance. Indeed, partialling variables assumed to represent bias can erroneously eliminate true behavioral variance in work outcomes (Nathan & Lord, 1983).

Implicit leadership theories can be regarded as one component followers bring to the leader-follower relationship. As Phillips and Lord (1986) note, "such cognitive simplifications are quite useful for employees, because categorizations based on ILTs help them organize perceptions, permit reasonable predictions, and may even specify appropriate behavioral reactions to others (p. 34)." Thus, implicit leadership theories help establish the boundaries for leadership influence. These "followership" considerations (Hollander, 1992; Hollander & Julian, 1969) remain integral to understanding the leadership process.

Second, while satisfaction with supervision and extra effort had received extensive coverage in previous investigations of transformational and transactional leadership, job satisfaction and turnover intentions have not. Hence, the typical findings, as well as those new to this study, extend to additional work outcomes of importance. This is particularly encouraging given the nature of these work outcomes. For example, job satisfaction is a construct with seemingly multiple causes, including present and future work opportunities (Schneider, Gunnarson, & Wheeler, 1992), person-environment fit (Dawis, 1992), and psychological climate and personal affect (James & James, 1992).

This study confirms that transformational leadership and contingent reward behavior also influence job satisfaction. Consequently, organizational leaders can positively influence reactions to other aspects of work other than those explicitly concerned with supervision or leadership.

In regards to turnover intentions, this study shows that organizational leaders can influence a costly reality of organizational life. Among other trends projected for workforce 2000, less organizational commitment and loyalty (Jamieson & O'Mara, 1991) represents a major barrier to organizational functioning, particularly if it results in high turnover. The costs associated with recruiting, selection, and training new employees can financially cripple a high turnover business. Encouragingly, results from the present study suggest that leaders fitting a good leader prototype and ascribing to transformational leadership and contingent reward styles can help to reduce this burden.

Third, the findings are virtually indistinguishable across all transformational leader (except intellectual stimulation) and contingent reward behaviors. In fact, all these behaviors are highly intercorrelated, as well as similarly correlated with other variables (e.g., work outcomes). Thus, the discriminant validity of these leader behaviors is questionable. Indeed, many researchers argue that the MLQ measures two leadership factors, active and a passive[10], which equally account for the relations noted with the MLQ subscales (Bycio et al., 1995). For example, Bycio et al. (1995) explored various factor patterns for the MLQ-1 (Bass, 1985a). Confirmatory factor analyses provided

[10] Active leadership includes all transformational leadership behaviors plus contingent reward. Passive leadership represents MBEA and MBEP.

partial support for both the original 5 factor model, as well as the active-passive configuration. Such evidence makes future exploration of the MLQ-5X factor structure paramount. To the extent that the more parsimonious active-passive model exists, more doubt is cast on the discriminant validity of the original subscales. This lack of discriminant validity also hinders the practical implementation of transformational and transactional leadership principles.

Practical Implications of Study Findings

The practical implications of this study go beyond a greater pedagogical understanding of the leadership process in the transformational and transactional leadership framework. Most notable, what followers bring to the "leadership arena" has importance. For example, the positive influence of a leader displaying transformational leadership behaviors likely diminishes to the extent that leader is perceived to possess traits associated with poor leaders. In fact, within this framework, the most effective and influential leader portrays good leader traits, while simultaneously engaging in transformational leader and contingent reward behaviors.

Given this profile, it behooves organizations to seek and retain leaders who maximize these qualities. As Bass (1990b) notes, "transformational leadership can be learned, and it can--and should--be the subject of management training and development (p. 27)". However, what Bass's recommendation excludes is that such training should also help leaders maximize their fit with the appropriate leader prototype. For instance, leadership training should teach the characteristics and traits commonly associated with

good or effective leaders, such as being decisive and well-informed. In essence, learning to maximize one's good leader prototype and active leadership behaviors is more beneficial than concentrating on behaviors alone.

Similarly, the current findings have practical implications for supervisory selection and promotion (Bass, 1990b). For example, the criteria for selection or promotion of organizational leaders should include the extent to which candidates possess, exhibit, or can learn those traits congruent with a desired leader prototype, as well as the active leadership behaviors. Bass (1990b) noted that the MLQ-5X can be used to assess candidates for their transformational and transactional leadership styles. Indeed, the MLQ-5X is highly versatile in that anyone having knowledge of a supervisory candidate (e.g., peers, subordinates, etc.) can provide feedback. Furthermore, the MLQ-5X contains a self-rating version in which an individual rates him or herself on the identical items. Such information along with other relevant factors such as education, experience, and technical expertise would aid organizations in ensuring their leaders remain capable of motivating and influence subordinates in a positive manner.

Other domains in which the implications of this study are profound include: leadership education, job design and assignment, recruiting, and development (see Bass, 1990b). For example, Bass notes that developing supervisors will benefit from having transformational behaviors modeled by their mentors. This is equally true for the modeling of prototypical good leader traits. The point is simple: The application of transformational leader behaviors and contingent reward to the leadership practices will

have beneficial effects for an organization, and these effects will be even greater to the extent that leaders learn to maximize those traits, characteristics, or behaviors commonly associated with good or effective leaders.

Despite these practical roles for integrating knowledge of implicit leadership theories, many researchers have questioned the consequences of implicit leadership theories for the study and understanding of leadership (e.g., Gioia & Sims, 1985; Phillips & Lord, 1986; Uleman, 1991). For example, Uleman (1991) distinguished between three ways in which leadership is depicted in rating scales: leadership-perceptions, leadership-effectiveness, and leadership-behavior. Accordingly, leadership-perceptions ratings refer to judgments of whether or not a target exemplifies a leader or particular leadership style. Leader-effectiveness ratings represent evaluative judgments of influence, effectiveness, or the outcome of leadership. And leader-behavior ratings measure specific, concrete acts that a leader exhibits. Uleman (1991) argues that many respectable leadership measures purporting to assess leadership behaviors, including the MLQ, actually assess leadership perceptions or leadership effectiveness. This sentiment has been conceded by some researchers of transformational and transactional leadership (e.g., Bass & Avolio, 1989; Kirby et al., 1992), particularly with respect to the attributed charisma and inspirational leadership subscales.

Given such skepticism, the question remains, what are the implications of implicit leadership theories in the study of transformational and transactional leadership? One approach to addressing this issue is to evoke the classification versus behavioral

accuracy distinction advocated by Phillips and Lord (1986). Specifically, classification accuracy refers to whether or not a measure can adequately classify a leader in broad terms (e.g., charismatic or not charismatic). On the other hand, behavioral accuracy reflects whether or not a measure detects a leader's specific, concrete acts. Combining Uleman's (1991) framework with that of Phillips and Lord (1986), measures of leader-perception and leader-effectiveness likely afford greater classification accuracy, while measures of leader-behavior afford more behavioral accuracy.

Applying this scenario to the practical implications for transformational and transactional leadership noted above, it might be argued that some MLQ-5X subscales afford greater classification accuracy because they reflect leadership perceptions, and other MLQ-5X subscales afford greater behavioral accuracy because they reflect leadership behaviors. Furthermore, implicit leadership theories may operate more in the perceptions and effectiveness paradigms, as opposed to behavioral assessments. Further research should examine this contentions. Regardless, this is an issue of the magnitude of implicit leadership theory effects and not the existence of them.

Study Limitations and Future Research

The study findings and their implications should be viewed in light of the study limitations and the need for additional research. First, the revised 2SLS models still omit potentially important explanatory variables. Hence, the interpretations regarding the nonrecursive relations (models) may be misrepresented (James & Singh, 1978), and alternative models may fit the data equally well. Further research in this domain should

fully specify and retest the relation between implicit leadership theories and transformational, transactional, and laissez-faire leadership. A key to proper incorporation of implicit leadership theories into the transformational and transactional leadership framework requires full understanding of the relations between the constructs representing these two leadership components.

Even with specification errors, however, the data correspond to the hypothesized pattern for most of the models. This is true of both the revised 2SLS models, as well as the subsequent mediation models. Although inconclusive, the generally consistent pattern of effects noted in the nonrecursive models suggest that adopting an entirely new model specification is unwarranted. Current findings support the use of the current models as the basis for expanded models which include other important explanatory variables not presently measured.

A second study limitation concerns the measurement of implicit leadership theories. Given the problems with the poor leader prototype suggests that the findings using this measure should be interpreted cautiously. Indeed, implicit leadership theories can be measured in several ways. Here, implicit leadership theories were measured in terms of prototypicality levels of leadership, an approach which coincides with those utilized in related research (cf., Lord et al., 1984; Pavitt & Sackaroff, 1990). However, Offermann et al. (1992) defined the content of implicit leadership theories as containing the following factors: sensitivity, dedication, tyranny, charisma, attractiveness, masculinity, intelligence, and strength. Such conceptualizations may entail different

predictions in regard to relations with transformational, transactional, and laissez-faire leadership. For example, supervisors who fit the "charisma" factor of implicit leadership theories should be regarded more favorably in terms of transformational leadership behaviors.

Another approach to constructing measure of implicit leadership theories involves use of a single dimension prototype measure and relies on the non-stated premise that a single dimension measure fully taps implicit beliefs about leadership. Some empirical evidence supports this operationalization. Indeed, Pavitt and Sackaroff (1990) found little variability related to their different levels of leadership prototypes and therefore concluded that their "findings suggest that knowledge about one's general prototype may be sufficient to account for people's beliefs about leadership, simplifying the job of both researchers and practitioners concerned with judgments about leadership" (p. 390). This issue, too, remains a question for future research.

Finally, this study did not address individual differences in the formation of implicit leadership theories (Foti & Luch, 1992; Weiss & Adler, 1981). For example, Foti and Luch (1992) suggest that expertise and familiarity represent individual difference variables which impact the operation of implicit leadership theories. Those with more expertise or different levels of familiarity with others (i.e., supervisors) may process information differently, resulting in different categorizations of leader attributes and behaviors. Such individual difference variables can intervene on the leader prototype-leader behavior relations noted in the current study. Ultimately, such effects will manifest

in the quality of the leader-follower interactions by influencing leader-prototype fit, subsequent reactions to leader influence attempts, and the overall nature of the leadership process. Hence, additional research should similarly incorporate those individual factors which influence the leader prototype held by individual observers.

Summary

This study supports the notion that skill level leader prototypes and transformational, transactional, and laissez-faire leadership relations are similarly exemplified by reciprocal interactions. Furthermore, leader prototypes generally exert the greater causal influence on specific leader behaviors. In concert, leader prototypes and specific behaviors influence important work outcomes, such as job satisfaction, satisfaction with supervision, extra effort, and turnover intentions. The importance of these finding lies in the explicit treatment of implicit leadership theories as an important component in understanding the leadership process. To the extent that implicit leadership theories represent the followers input to the leader-follower interaction, they profoundly effect subsequent leader influence and follower reactions. Given the consistency and operation of implicit leadership theories, one may question why research continually regards them as "nuisance" variables. It is the systematic, pervasive operation of implicit leadership theories which should compel researchers to go beyond mere recognition and "control" of their existence.

The role of implicit leadership theories in the transformational and transactional leadership domain needs further research. Specifically, the relation between these leadership perspectives should be fully explored, with more concern given to the measurement of implicit leadership theories and individual differences in their formation. Also, the MLQ-5X requires additional psychometric refinement. The transformational

leadership subscales lack discriminant validity, and the type and level of information that the MLQ actually provides needs clarification.

Tomorrow's organization will dramatically differ from yesterday's, yet organizational leadership and management principles remain based on past organizational needs and circumstances (Casio, 1995; Hogan et al., 1994). Bass's (1985a) application of the principles of transformational and transactional leadership to organizations intuitively meshes with recent and project changes in the world of work. In theory, transactional leadership will accomplish lower-order managerial objectives, such as maintaining the quality of performance, continuing the employment contract, and clarifying work objectives and expectations. However, transformational leadership is needed to ensure long-term organizational growth and success by producing higher levels of satisfaction, effort, and organizational identification, and reducing turnover. Both forms of leadership are essential for business success.

Furthermore, the "one size fits all" approach to leadership is no longer tenable. Employees are increasingly heterogeneous and require the individualized approach to leadership as practiced by transformational and transactional leaders. And in considering such individuality, employee perceptions, expectations, and past histories play an important role. Thus, as this study suggests, the increasingly popular transformational and transactional leadership theory must expand to encompass factors relevant to followers to provide a more useful approach to understanding and practicing 21st century leadership. Implicit leadership theories provide one avenue for incorporating such factors.

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Appendix A

Sample Cover Letters and Questionnaire Instructions

Initial Cover Letter

Dear ??? Employee:

I am asking for your participation in this study of organizational leadership at ???. This study asks your opinions about various factors dealing with your immediate supervisor, yourself, and your work environment. The attached questionnaire contains instructions for answering all items. Please read the instructions carefully before answering. Use the answer sheet included with the questionnaire to record your responses. The questionnaire should take less than 30 minutes to complete.

Your thoughtful and honest responses will allow for a thorough investigation. The results will be provided to management and senior management in summary format. It is important to participate in this study to ensure that all viewpoints are accurately represented.

Participation is voluntary. Furthermore, this is an anonymous activity. Please do NOT include your name or other identifying marks on the answer sheet.

"Point of contact" will handle the distribution and collection of the questionnaires. Please return both questionnaire and completed answer sheets to her. If you have additional questions concerning the questionnaire, feel free to call me at (___) ___-____ or contact "point of contact".

Thank you in advance for your participation and valuable contribution.

Sincerely,

Second Contact Letter

Dear ??? Employee:

Re: Organizational Leadership Study

Several weeks ago, I asked for your participation in a study of organizational leadership. This study asks your opinions about various factors dealing with your immediate supervisor, yourself, and your work environment. If you have not done so, would you please complete the included questionnaire. Your participation is important and should take less than 30 minutes.

The questionnaire contains instructions for answering all items. Use the answer sheet included with the questionnaire to record your responses. Your thoughtful and honest responses will allow for a thorough investigation. Your participation in this study will ensure that all viewpoints are accurately represented. The results will be provided to management and senior management in summary format.

Participation is voluntary. Furthermore, this is an anonymous activity. Please do not include your name or other identifying marks on the answer sheet.

"Point of contact" will collect your completed surveys. If you have additional questions concerning the questionnaire, feel free to call me at (___) ___-____ or contact "point of contact".

Thank you for your participation and valuable contribution.

Sincerely,

Front Page Instructions of Questionnaire

TITLE

COMPANY

DATE

General Directions: This packet contains 142 questions designed to assess your reactions and opinions regarding various supervisory and organizational circumstances and practices. There are no right or wrong answers; your opinions are very important.

The packet is divided into 7 sections. Each section has a more specific set of directions. Carefully read all directions contained in this packet.

Carefully consider each question and record the response which best answers the question on the answer sheet provided. Be sure that the answer sheet number is the same as the question number in recording your responses.

Your responses to this questionnaire are strictly confidential. Do NOT include your name, social security number, or any identifying marks on the questionnaire packet or answer sheet.

THANK YOU FOR YOUR PARTICIPATION

Appendix B

Sample Measures

Leader Prototype Measure

Instructions: Each of the following statements describe behaviors that may be displayed by supervisors in general. Indicate the extent your immediate supervisor can be expected to exhibit each behavior.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. Strict.
2. Courageous.
3. Dishonest.
4. Decisive.
5. Forceful.
6. Unemotional.
7. Demanding.
8. Goal-oriented.
9. Manipulative.
10. Believable.
11. Tough.
12. Conservative.
13. Outspoken.
14. Strong Character.
15. Informed.

General Job Satisfaction

Instructions: Each of the following statements deal with your attitude towards your current job. Indicate the extent to which your agree or disagree with each of these statements. Use the following scale to indicate your response:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

1. Generally speaking, I am very satisfied with this job.

2. I frequently think of quitting this job. (R)

3. I am generally satisfied with the kind of work I do in this job.

Satisfaction with Supervision

Instructions: Each of the following statements deal with your reactions towards your immediate supervisor. Indicate your level of satisfaction or dissatisfaction with each of these issues. Use the following scale to indicate your response:

1	2	3	4	5	6	7
Extremely Dissatis.	Dissatis.	Slightly Dissatis.	Neutral	Slightly Satisfied	Satisfied	Extremely Satisfied

1. The degree of respect and fair treatment I receive from my supervisor.

2. The amount of support and guidance I receive from my supervisor.

3. The overall quality of the supervision I receive in my work.

Turnover Intentions

Instructions: Below are three statements dealing with your personal reaction to your current job. Respond to these statements using the rating scales provided.

1. How likely is it that you will actively look for a new job in the next year?

1	2	3	4	5
Very Likely	Likely	50-50	Unlikely	Very Unlikely

2. How often do you think about quitting?

1	2	3	4	5
Very Often	Often	Occasionally	Not Very Often	Hardly Ever

3. I will probably look for a new job in the next year.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Leader Perceptions

Instructions: Rate your immediate supervisor on each of the statements below. Use the following scale to indicate your responses:

1	2	3	4	5
None	Very Little	Moderate Amount	Substantial Amount	Extreme Amount

1. How much does your supervisor contribute to the effectiveness of your work tasks?

2. What degree of influence does your supervisor exert in determining the final outcome of you work?

3. How much leadership does your supervisor exhibit on the job?

4. How much control over your work activities does your supervisor exhibit?

Leader-Member Exchange Quality

Instructions: The following questions pertain to your relationship with your immediate supervisor. Indicate your response to each question using the rating scale provided.

1. Do you usually know where you stand with your immediate supervisor?

1	2	3	4
Never Know Where I Stand	Seldom Know Where I Stand	Usually Know Where I Stand	Always Know Where I Stand

2. How well do you feel that your immediate supervisor understands your problems and needs?

1	2	3	4
Not At All	Some But Not Enough	Well Enough	Completely

3. How well do you feel that your immediate supervisor recognizes your potential?

1	2	3	4
Not At all	Some But Not Enough	As Much As the Next Person	Fully

4. Regardless of how much formal authority your immediate supervisor has built into his or her position, what are the chances that he or she would be personally inclined to use power to help you solve problems in your work?

1	2	3	4
No Chance	Might or Might Not	Probably Would	Certainly Would

5. Again, regardless of the amount of formal authority your immediate supervisor has, to what extent can you count on him or her to "bail you out" at his or her expense when you really need it?

1	2	3	4
No Chance	Might or Might Not	Probably Would	Certainly Would

Leader-Member Exchange Quality (Cont.)

6. I have enough confidence in my immediate supervisor that I would defend and justify his or her decisions if he or she were not present to do so.

1	2	3	4
Probably Not	Maybe	Probably Would	Certainly Would

7. How would you characterize your working relationship with your immediate supervisor?

1	2	3	4
Less Than Average	About Average	Better Than Average	Extremely Effective

Trust in Leader

Instructions: Listed below are descriptive statements about your relationship with your immediate supervisor. Indicate the extent to which you agree or disagree with each statement. Use the following scale to indicate your response:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

1. I feel quite confident that my supervisor will always try to treat me fairly.

2. My supervisor would never try to gain an advantage by deceiving workers.

3. I have complete faith in the integrity of my manager/supervisor.

4. I feel a strong loyalty to my supervisor.

5. I would support my supervisor in almost any emergency.

6. I have a strong sense of loyalty toward my supervisor.

Support for Innovation

Instructions: Each of the following statements deal with your attitude towards your current organization. Indicate the extent to which your agree or disagree with each of these statements. Use the following scale to indicate your response:

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

1. Creativity is encouraged here.
2. The main function of members in this organization is to follow orders which come down through channels. (R)
3. Around here, a person can get in a lot of trouble by being different. (R)
4. A person can't do things that are too different around here without provoking anger. (R)
5. The best way to get along in this organization is to think the way the rest of the group does. (R)
6. People around here are expected to deal with problems in the same way. (R)
7. This place seems to be more concerned with the status quo than with change. (R)
8. The reward system here benefits mainly those who don't rock the boat. (R)

Pay-Performance Contingency

Instructions: Each of the following statements deal with your attitude towards your current pay. Indicate the extent to which your agree or disagree with each of these statements. Use the following scale to indicate your response:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

1. My pay is adequate considering my work performance.
2. The pay in this organization is based primarily on work performance.
3. Regardless of how well I do my job, I receive the same pay (R)
4. I feel I am fairly paid for the job that I do.
5. My current pay reflects my job responsibilities.

Demographic Information

Instructions: Please provide the following information:

1. How long have you worked for "organization name"?

   1) less than 1 yr. 2) 1-3 yrs. 3) 4-6 yrs. 4) 7-10 yrs. 5) 10 + yrs.

2. How long have you worked for "organization name" in your current job?

   1) less than 1 yr. 2) 1-3 yrs. 3) 4-6 yrs. 4) 7-10 yrs. 5) 10 + yrs.

3. How long have you worked under your current supervisor?

   1) less than 1 yr. 2) 1-3 yrs. 3) 4-6 yrs. 4) 7-10 yrs. 5) 10 + yrs.

4. Please indicate your gender.

   1) male 2) female

5. Into which age range do you fall?

   1) less than 20 2) 20-29 3) 30-39 4) 40-49 5) 50 +

6. Which category best represents your highest level of educational attainment?

   1) less than high school degree
   2) high school degree or equivalent (e.g., GED)
   3) some college or technical school training, but no degree
   4) college or technical school degree (e.g., BA, BS)
   5) some graduate school training, but no degree
   6) graduate degree (e.g., MBA, MA, MS, Ph.D.)

7. What is your job title?

Social Desirability

Instructions: Indicate the extent to which your agree or disagree with each of these statements.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

1. Do you tell the truth?

2. When you take sick-leave from work or school, are you as sick as you say you are?

3. I am always courteous, even to people who are disagreeable?

4. Once in a while I laugh at a dirty joke?

5. I sometimes try to get even, rather than forgive and forget?

6. I always apologize to others for my mistakes.

7. Would you declare everything at customs, even if you knew that you could never be found out?

8. I never attend a sexy show if I can avoid it.

9. Sometimes at elections, I vote for candidates I know little about.

10. I am sometimes irritated by people who ask favors of me.

Appendix C

Sample Pretest Questionnaire

Directions: Indicate the extent to which each of the traits listed below are characteristic of leaders.

Use the following key to indicate your response to each item:

1	2	3	4	5
To no extent	To a small extent	To some extent	To a great extent	To a very great extent

1. Outgoing
2. Unemotional
3. Informed
4. Strong
5. Dishonest
6. Generous
7. Forceful
8. Charismatic
9. Manipulative
10. Kind
11. Decisive
12. Tough
13. Courageous
14. Conservative
15. Strong Character
16. Strict
17. Demanding
18. Goal-oriented
19. Outspoken
20. Believable

Appendix D

Multicollinearity Assessment of Original 2SLS Models

Following the approach advocated by Lewis-Beck (1980) for assessing the extent of multicollinearity in a regression equation, each independent variable was regressed on all other independent variables within each regression model for second stage regressions only. (Note that the instrumental form of the endogenous variable was utilized when assessing multicollinearity, as opposed to the original form, because the former is used as the independent variable in the second stage regressions.) According to Lewis-Beck (1980), when R^2 values from these regression approach unity, there is high multicollinearity. The highest R^2 value thus serves as a gauge of the extent to which multicollinearity problems exist in the 2SLS regressions.

The results from this assessment confirmed the existence of highly collinear regressors. The first set of regressions involved regressing the instrumental version of each leader behavior on the respective prototype measure. For example, from 2SLS model 1 (Table 6), attributed charisma (in instrumental variable form) was regressed on leadership perception. The second set of regressions involved a similar approach. In 2SLS model 1, this entailed regressing good leader prototype on LMX quality and trust in leader, regressing LMX quality on good leader prototype and trust in leader, and regressing trust in leader on LMX quality and good leader prototype. As with attributed charisma, the instrumental version of good leader prototype was utilized.

The resulting $\underline{R^2}$s[11] across all models ranged from .00 to .77, with most of the models involving transformational leader behaviors producing higher R^2 values in general. The highest R^2 value, .77, serves as the barometer for multicollinearity problems (Lewis-Beck, 1980) and given the magnitude confirms that multicollinearity problems produced the nonsignificant, opposite-signed parameter estimates and correspondingly large standard errors.

To address multicollinearity problems, several approaches are available (Lewis-Beck, 1980; Montgomery & Peck, 1982). First, larger sample sizes result in more stable and significant parameter estimates, ceteris paribus. However, this approach often proves futile in the presence of severe multicollinearity (Lewis-Beck, 1980).

A second approach to dealing with multicollinearity is to combine highly correlated independent variables (e.g., use of principal components analysis; Stevens, 1981). Of course, this approach relies on the conceptual sensibility of such composite formulation. Because the independent variables represent distinct constructs confirmed in previous research, this approach was untenable in the present context. A third approach entails the use of ridge regression techniques (Hays, 1981); however, the use of ridge regression in 2SLS models is an uncharted area of research, and little is known about the properties of parameter estimates in 2SLS under ridge regression procedures (Berry, 1984).

A final approach advanced by Lewis-Beck (1980) for dealing with multicollinearity entails the elimination of one or more of the highly correlated independent variables. This

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[11] In some regressions only a single predictor was used. Technically, therefore, the r^2 is evaluated as opposed to R^2. However, the R^2 symbol is used throughout the text to eliminate presentation confusion. Interpretation are highly similar regardless.

approach was employed to estimate nine respecified 2SLS models. However, such an approach equates to a willful commission of specification errors (assuming the original model was correctly specified). Regardless, the respecified models represented a conceptually logical respecifications of the original 2SLS models. Furthermore, the final results supported this argument (see Results section).

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EDUCATION

1993-1996: Virginia Polytechnic Institute and State University,
Blacksburg, Virginia
Ph.D. in Industrial/Organizational Psychology, May, 1996

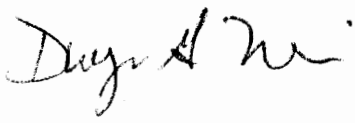
1990-1992: Virginia Polytechnic Institute and State University,
Blacksburg, Virginia
M.S. in Industrial/Organizational Psychology, December, 1992
Patricia Roberts Harris Fellowship

1985-1990: Lafayette College, Easton, Pennsylvania
B.A. in Psychology, May, 1990

RESEARCH EXPERIENCE (Graduate)

5/94-2/96 Dissertation Research
Roseanne J. Foti (Chair), Virginia Tech, Blacksburg, VA

Designed and conducted a field study to investigate the role of implicit theories of leadership within the theoretical framework of transformational and transactional leadership, particularly in terms of how these leadership factors combine to influence job satisfaction, satisfaction with supervision, extra effort, and turnover intentions.



8/91-11/92 Thesis Research
Roseanne J. Foti (Chair), Virginia Tech, Blacksburg, VA

Designed and conducted a laboratory investigation which assessed the cognitive processes associated with the leadership perceptions of men and women, utilizing the leadership categorization theoretical framework as an interpretive model.

RESEARCH EXPERIENCE (Other)

5/93- Research Psychologist
Westat, Inc., Rockville, MD

Modeling of youth career decision making; mixed-method evaluation of usage and understanding of revised tax payment forms; test development and validation of EPA certification exams for select jobs; longitudinal assessment of job satisfaction, career intentions, and readiness of active-duty military personnel; employee opinion and attitude surveying and modeling.

RESEARCH INTERESTS

Applications of transformational leadership principles; person perception and stereotyping; cognitive processing during behavioral and performance observation; diversification and work place change; selection and performance appraisal.

TEACHING EXPERIENCE

5/94-8/94 Assistant Professor (under ABD Fellowship Program)
Virginia Polytechnic Institute and State University,
Department of Psychology, Blacksburg, VA

Taught upper-level industrial and organization psychology course; prepared course outline and objectives; prepared and administered daily lectures and demonstrations; constructed exams and classroom examples; provided individual assistance; devised and administered grading system.

8/90-12/90 Graduate Teaching Assistant
Virginia Polytechnic Institute and State University,
Department of Psychology, Blacksburg, VA

Taught laboratory session of introductory psychology course; facilitated class discussions; prepared and presented short lectures and demonstrations; assisted in administration of exams.

6/90-8/90 Instructor
University of the District of Columbia,
Summer Youth Program, Washington, DC

Taught introductory and advanced algebra to high school students in a program sponsored by UDC.

WORK EXPERIENCE

5/93- Research Psychologist
Westat, Inc., Rockville, MD

Consulting/Research psychologist in Organizational and Management Research Group

Perform broad array of human resources applied research and consulting activities; provide analytic consultation and support; provide research methodology consultation; write proposals and research/technical reports; construct or revise survey questionnaires; collect survey data; devise and maintain large-scale databases.

12/91-1/92 Research Assistant (temporary)
Bell Atlantic, Arlington, VA

Provided temporary assistance in the administration of a computerized selection battery

3/90-8/90 Primary Counselor
Second Mile House, Hyattsville, MD

Counselor for runaway and homeless youth in group home environment.

Conducted individual and group counseling sessions; devised individual intervention plans; coordinated community-outreach and educational programs; operated crisis intervention hot-line.

8/89-12/89 Peer Counselor
Office of the Dean, Lafayette College
Easton, PA

Peer Counselor for incoming freshmen students.

GRADUATE COURSE WORK

I/O Related Courses
Industrial Psychology I & II
Organizational Psychology I & II
Current Issues in Labor Relations
Current Issues in Applied Psychology
Organizational Leadership Perceptions
Social Psychology
Personality Psychology
Psychology of Learning

Quantitative/Methodological Courses
Statistics for Social Science Research I & II
Advanced Psychometric Theory
Quantitative Topics in Applied Psychology
Advanced Quantitative Methods (Multivariate Statistics)
Applied Multiple Regression
Research Methods

CONTINUING EDUCATION COURSES

Compensating for Missing Survey Data
Cognitive Laboratory Methodology
Survey Sampling
Regression Models in Survey Research

PROFESSIONAL AFFILIATIONS

Personnel Testing Council of Metropolitan Washington
American Psychological Association
American Association for Public Opinion Research-National
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RESEARCH REPORTS

Norris, D. G., & Lockman, R. F. (1995). *Satisfaction with military life, career intentions, and family readiness from 1985 to 1992: Change or stability?* (Prepared under contract to the Defense Manpower Data Center). Rockville, MD: Westat, Inc.

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Norris, D., Levin, K., Cantor, D., Stone, D., & O'Conor, K (1995). A mixed-method approach to evaluating new tax payment procedures. 1995 Proceedings of the American Association for Public Opinion Research, *forthcoming*.

Norris, D., & Lockman, B. (1995). Assessing the attitudes of military careerists from the 1985 and 1992 longitudinal survey data. 1995 Proceedings of the International Military Testing Association, *forthcoming*.

GRADUATE RESEARCH (unpublished)

Norris, D. G. (1996). Incorporating implicit leadership theories into the transformational and transactional leadership framework. Unpublished doctoral dissertation, Virginia Tech, Blacksburg, VA.

Norris, D. G. (1992). Leader perceptions of men and women: A leadership categorization view. Unpublished master's thesis, Virginia Tech, Blacksburg, VA.