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The associative relationship between transformational and transactional leadership styles and group productivity

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THE ASSOCIATIVE RELATIONSHIP BETWEEN TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP STYLES AND GROUP PRODUCTIVITY

By

John Mitchell Longshore

A DISSERTATION

Submitted to
The Center for the Study of Administration
Nova University

in partial fulfillment of the requirements
for the degree of

DOCTOR OF BUSINESS ADMINISTRATION

1987

A Dissertation
entitled

The Associative Relationship Between Transformational And Transactional Leadership and Group Productivity

by
John Mitchell Longshore

We hereby certify that this Dissertation submitted by John Mitchell Longshore conforms to acceptable standards, and as such is fully adequate in scope and quality. It is therefore approved as the fulfillment of the Dissertation requirement for the degree of Doctor of Business Administration.

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ABSTRACT

THE ASSOCIATIVE RELATIONSHIP BETWEEN TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP STYLES AND GROUP PRODUCTIVITY

by

John Mitchell Longshore

Studies have concluded that the leadership styles of transformational and transactional may have varying effects on productivity. This study examined the association of the managers' transformational and/or transactional leadership style characteristics upon perceived and actual productivity.

Perceived leadership styles and productivity were measured through a survey questionnaire instrument administered to five divisions within a diverse aviation maintenance support corporation. Sample size consisted of N=475 of which 45 were managers being evaluated. Survey questionnaires were administered to all organizational members of which, 359 responded. Twelve survey responses, deemed unusable, and the 45 manager responses were excluded from the analyses database of N=302.

Actual productivity measurements were derived from an output/input formula. The basis for this formula were the Maintenance Action and Support Action Forms. These documents yielded the number of items processed and the manhours required to produce them. An analyses of (1) fiscal year's data, from the last half of one year to the first half of another year, was conducted. Monthly ratios were derived, averaged by division, and normalized. These normalized ratios were then assigned to each individual respondent, by his/her division, as representative of an individual productivity ratio.

Survey questionnaires were analyzed through varied statistical methods to include correlation and chi-square analyses. Null hypotheses were evaluated through several nonparametric and parametric statistical methods to include: The Spearman Rank Correlation Coefficient, Partial Coefficients of Correlation, Chi-Square Goodness-of-Fit, and the Two-Tailed T-Test Analysis.

Through these analysis methodologies, two of the three proposed null hypotheses were rejected. The type of leadership - transformational and/or transactional - was found to be moderately associated with group productivity. The predominant transformational leadership style sub-component was found to be individualized consideration. The transactional leadership style and its sub-components were found to have little noticeable association with group productivity.

This study joins existing research verifying that productivity is not independent of leadership style. It also introduces the independent variables of transformational and transactional leadership styles and quantitatively links them to the dependent variable, group productivity.

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CHAPTER I

INTRODUCTION

Background of the Problem

The phenomenon of leadership is probably the most extensively researched social process known to the behavioral sciences. Any economic system, political system, business enterprise, commonweal organization derives its continued existence from the successful guidance of the human being. It is little wonder that so much time and effort has been expended in delineating the characteristics, functions, and methods associated with effective leadership (Burns, 1978).

Most management writers, theorists, and consultants agree that leadership is "the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation" (Hersey and Blanchard, 1982, p.83). Bass (cited in Stogdill, 1981) states, "The study of leadership is an ancient art," and that, "Leadership is a universal human phenomenon" (p.5). Bennis and Nanus (1985) point out that we do have the beginnings of a general theory, from history and social research and above all, from reminiscence of reflective practitioners such as Moses, Pericles, Julius Caesar, Jesus Christ, Martin Luther, Niccolo Machiavelli and James Madison and, in our own time, from such disparate sources of wisdom as

Gandhi, V.I. Lenin, Winston Churchill, Charles de Gualle, Dean Acheson, Mao Tse-tung, Chester Barnard, Martin Luther King, John Gardner, and Henry Kissinger.

But, folklore and reflective observation are not enough except to convince us that leaders are physically strong and abnormally hard workers. Authorities do not agree upon the significance of traits, characteristics, and situations in determining leadership influence. Decades of academic analyses have given us more than 350 interpretations of leadership (Bennis and Nanus, 1985). Bass (cited in Stogdill, 1981) has compiled a review of more than 5000 different professional articles, projects, and books presented from 1904-1981 each dedicated to the interpretation of leadership. Bass additionally points out there are as many definitions of leadership as there are persons who have attempted to define the concept and states, "Leadership continues to be the most observed and least understood phenomena on earth" (p.2).

Acknowledging the lack of consensus regarding the subject of leadership, this study will be undertaken to do an initial exploration of the association between Burns' (1978) concepts of transforming and transacting leadership styles and group productivity in a diversified technological organization.

The development of transforming and transacting leadership style concepts grew out of Burns' (1978) seminal literary work, Leadership. Burns identified two types of behavior. One he called transforming and the other, transacting. These two leadership behaviors will be used as the independent variables in this study. Each will be correlated with the dependent

variable, group productivity, to establish if there is an associative relationship.

Burns (1978) advocated that the transforming leader was one who induced additional effort from subordinates, inspired subordinate confidence by elevating the value of outcomes for the subordinate, and focused on transcendental interests. The transacting leader, in contrast to the transforming leader, recognized what the subordinate needed and clarified how those needs would be fulfilled in exchange for the subordinate's satisfactory efforts and performance.

The diversified technological services organization selected for study, hereafter referred to as the XYZ Corporation, offers an excellent environment for assessing the leadership styles in relationship to group productivity. This study will concentrate on a business unit under an Aerospace Operations division located at the Naval Air Station, Patuxent River, Maryland. Objective group productivity measurements will be the ratio of man-hours utilized through direct maintenance and support actions, to items processed while subjective productivity measurements will be taken via a survey instrument.

The implications of this research are far reaching. If either transforming or transacting leadership can be objectively associated with increased group productivity, then an effort can be made to change or develop a leadership behavior best associated with higher productivity (Olree, 1985). People who are considering entering business could

determine their leadership behavior and make some prediction regarding their likelihood of success. As Olree states, "organizations seeking to establish a more productive unit might advisedly be interested in a leader with the leadership behavior orientation most closely associated with high productivity. Or, they might want to invest in training their current manager toward a desired leadership behavior" (p.21).

A search of the literature has failed to produce congruence as to the specific effects of leadership behavior on group productivity. Although numerous authors have drawn subjective linkages between transforming and transacting leader behavior and group productivity, none have established objective correlations (Tichy and Devanna, 1986; Tichy and Ulrich, 1986; Goddard, 1986; Horton, 1985).

Since people are the life blood of any organization, productivity depends on them. Leadership skills which play a critical role in the productivity of subordinates should be incorporated in all office procedures and producing systems (Viens, 1981). Therefore, this study supplies additional information concerning leadership styles and their associative relationship with group productivity.

Statement of the Problem

Bass (1985) in a continuation of Burns' (1978) exploration of the transforming and transacting leadership styles, established that transformational and transactional leaders exhibit distinguishing characteristics. The transformational leader exhibits charismatic influence, individualized

consideration and intellectual stimulation which subliminally elevates subordinate performance beyond normal organizational expectation. The transactional leader exhibits contingent reward and management-by-exception methods of stimulation for subordinate performance on a more normal level.

This exploration, into the transformational and transactional leadership phenomena, has been elaborated on through the works of Tichy and Devanna (1986), Clontz (1984) and Horton (1985). Each author expresses concern over todays' leaders use of a transactional leadership style for short term productivity goals and sound a call for more transformational leadership to optimize long term productivity. Tichy and Ulrich (1984) call for a new brand of leadership - transformational leadership - to revitalize large U.S. corporations such as General Motors, AT&T, and General Electric. Gilbert (1985) states,

> "The most central issue in improving productivity may just well be the most neglected: management capacity. Current management philosophies, under the label of 'transactional leadership' style, can acutely reduce the overall effectiveness of leader-subordinate relationships. A more effective philosophy emphasizes 'transformational leadership' in which the psychological commitment of leader and subordinate is advanced, rather than plasticized" (p.449).

But, empirical evidence directly linking the transformational and/or transactional leader to increased group productivity is lacking. Clearly an objective correlation between these leadership phenomena and group productivity is warranted. By establishing a quantitative linkage, a benchmark could be established upon which organization productivity

levels and leader style can be gauged and adjustments made. This exploratory study proposes to investigate whether the transformational and transactional leadership styles are independent of group productivity.

Definition of Terms

Transformational leadership refers to that which elevates subordinate performance above and beyond normal expectations (Bass, 1985). It is, according to Burns (1978), an exchange relationship between leader and follower which raises one another to higher levels of motivation and morality, a transforming leadership.

Transactional leadership refers to that which causes subordinate performance through a cost-benefit, economic exchange process (Bass, 1985). Burns (1978) described this leader as one who approaches followers with an eye for exchanging one thing for another.

Charismatic leadership is a distinguishing characteristic of the transformational leader (Bass, 1985). It is, according to Bass, that which inspires followers unquestioning loyalty and devotion without regard to followers' own self-interest. Theologically, charisma was an endowment of spiritual grace from God. For secular social science, it is an endowment of an extremely high degree of esteem, value, popularity, and/or celebrity-status attributed by others (House, 1976).

Inspirational leadership and Intellectual stimulation are sub-factors of the charismatic leadership behavior. They are emotionally arousing, animating, enlivening, and even exalting

to followers and their efforts (Bass, 1985).

Individualized consideration is a distinguishing characteristic of transformational leadership (Bass, 1985). While it can take many forms, expression of appreciation for a job well done will be the most important. Another type of individualized consideration is the assignment of special projects that will promote subordinates' special talents, and provide opportunities for learning (Bass, 1985).

Contingent reward is a distinguishing characteristic of transactional leadership (Bass, 1985). In using contingent reward, the leader and subordinate agree on what the subordinate needs to do to be rewarded or to avoid punishment. If the subordinate does as agreed, the leader arranges to reward the follower or the leader does not impose aversive reinforcement such as correction, reproof, penalization, or withdrawal of authorization to continue (Bass, 1985).

Management-by-exception is a distinguishing characteristic of transactional leadership (Bass, 1985). Leaders who primarily or exclusively practice management-by-exception, negative feedback, or contingent aversive reinforcement intervene only when something goes wrong. As long as subordinates are meeting performance standards, the servocontrol mechanism remains quiet. But, if a subordinate's performance falls below some threshold, the mechanism is triggered (Bass, 1985).

Productivity, as used in the context of this study, is the ratio of output divided by input. Efficiency and effectiveness

variables, respectively, will be measured by the number of items processed and the percentage of man-hours used respectively.

Leaders, in the context of this study, are those individuals with the final or top authority within their respective departments and/or divisions. Each is identified as either a group manager (GM), engineer manager (EM) or leadman (LM). Leaders assessed in this exploratory study had been in their respective positions for a minimum of one year.

Participating members are those individuals within the field study organization responding to the survey instrument. Each is identified as either an engineer (EN), inspector (IN), senior technician (ST), journeyman specialist (JS), junior repairman (JR), or clerks (CL).

Significance of Research

This exploratory study focuses on the associative relationship of leader style, transformational and transactional, to group productivity in a technological organization. Through this research, a justifiable contribution toward the recognition of which leadership style best affects the productivity levels of individual organizational members was achieved. "Individuals," states Govembiewaki (1967), "effect proportionately the organizations success. Hence, high productivity tends to secure jobs, generate more jobs, and increases the income of group members. These aspects of security enhances the lives of those participating and adds to the quality of work life" (pp.121-122).

Galagan (1986) in an interview with Jack Grayson, Chairman of the American Productivity Center, discussed the importance of human development in improving the nations economic performance and productivity. Grayson states,

> "We need to find the way to improve both performance and productivity. Leadership occurs when one group member, the leader, modifies the motivation or competencies of others in the group. Research in the 1970's often expressed this as the directing of attention of other members to goals and the paths to achieve them. It should be clear that with this definition, any member of the group can exhibit some amount of leadership. Members will vary in the extent they do so."

This research attempts to associate the kind of leadership style exhibited by leaders of groups and its subsequent effect on productivity levels. Each leader works directly with subordinates; that is, each motivates another's actions or competencies so that some expressed objective is achieved (Yukl, 1981).

Regardless of the type of organization, in leadership, we work with people (society); therefore, attention must be given to how we set goals, make decisions, offer instructions, or handle disciplinary situations. A leader in any organization does these things. The more we know about what contributes to success the more likely we can succeed (Beck, 1982).

This exploratory study adds to the existing data base of information that helps to answer the following questions:

1. Is there a difference in group efficiency, as measured by output/input ratio, as a result of one management style - transformational and/or transactional?

2. If the transformational leadership style is found to be associated to increased efficiency, is the charismatic sub-component, as measured by output/input ratio, more of an

influencing factor than the individualized consideration sub-component?

3. If there is no association between the transformational style of leadership and increased efficiency is the contingent reward sub-component, as measured by output/input ratio, more of an influencing factor than the management-by-exception sub-component?

Null Hypotheses

In addressing the research questions, the following null hypotheses are proposed:

Ho: There is no difference in efficiency, as measured by output/input ratio, as a result of one management style - transformational and/or transactional.

Ho: There is no difference between the influencing effects of the charismatic and individualized consideration sub-components, as measured by output/input ratio, given the transformational style of leadership is associated with group productivity.

Ho: There is no difference between the influencing effects of the contingent reward and management-by-exception sub-components, as measured by output/input ratio, given the transactional style of leadership is associated with group productivity.

Summary

In summary, these leadership styles of transformational and transactional have been researched and reported with varying degrees of emphasis. Results have lacked uniformity as to their influence on group productivity. This exploratory study attempts to investigate whether these leadership styles are specifically independent of group productivity. Productivity, as measured in this dissertation, is the ratio of output divided by input (percentage of man-hours utilized and items processed). The findings will add to the knowledge of

existing literature and be specifically relevant to the population studied.

The study is divided into five chapters. Chapter I presents the background of the study including the background of the problem, a statement of the problem, definition of terms, significance of the study and research questions, and hypotheses. Chapter II is a review of the related literature. Chapter III contains the Methodology for this dissertation and discusses research method design, survey instrument design, data collection, and recording methods, survey scales and levels of measurements, survey implementation, statistical analyses, and methodological assumptions and limitations. Chapter IV provides an analyses of hypotheses test, findings and results. Chapter V presents the summary, conclusions, and recommendations for future research.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Bass (cited in Stogdill, 1981) reports that more than 5,000 references whose subject is specifically leadership have been researched to help compile what we know about leadership today. Some studies have been guided by the rigor of research methodology to develop leadership while others have used theory alone to espouse leadership concepts. Together these methods have taught us more than either could have alone. Considering all that has been done, there still exists a considerable amount of uncertainty about leader behavior. Various aspects of this nature are presented in the sections that follow. The first and second review the history of leadership and provide a definition of leadership. The third reviews leadership style and specifically discusses the origination of transformational and transactional leadership styles. The fourth section addresses the possible association between the styles of transformational and transactional leadership and group productivity.

History of Leadership

The concept of leadership and the identification of

leaders are perennial and favorite topics of debate among professionals and non-professionals alike. The phenomenon of leadership, as stated previously, is one of the more complex concepts of all times. It seems that the more complicated or advanced our society becomes, the more intricate, sophisticated, and diffused leadership appears to be.

Recorded history indicates that leadership has always been recognized. The Egyptians expected their leaders to be authoritative, perceptive, and just (Latona, 1972). The Greeks identified leaders with (a) justice and judgment as seen in Agamemnon, (b) wisdom and counsel as in Nestor, (c) shrewdness and cunning as Odysseus, and (d) valor and action as seen in Achilles - all in Homer's Iliad. Moses had trouble with speaking which he recognized as a weakness for a leader (Exodus 4:10).

The ability to communicate is important to leaders. "The skill of leaders . . . is to make sense of something and then communicate that sense in a way that others could understand" (Lombardo & McCall, cited in Betz, 1981, p.161). Jesus was said to have no particular comeliness that people should follow him. These instances identify the significance of speech, action, and appearance as traits being important in leadership.

Three major approaches have been employed in the study of leadership. The first approach views leadership as growing out of a combination of traits. The second attempts to identify the personal behaviors associated with effective leadership. The third attempts to identify situational leadership. Common to each of these approaches is the assumption that individuals who

possess appropriate traits or display appropriate behaviors will emerge as leaders in whatever group situations they find themselves (Bass cited in Stogdill, 1981).

Current thinking and research lean towards the third approach, the situational perspective on leadership (House and Betz, 1986). This perspective assumes that the conditions that determine leader effectiveness vary with the situation - the tasks to be accomplished, the skills and expectations of subordinates, the organizational environment, the past experiences of leader and subordinates, and so on. An individual who is an effective leader in one situation might do very poorly in another. This perspective additionally has given rise to contingency approaches to leadership, which attempt to specify the situation factors that determine how effective a particular style will be (House and Betz, 1986).

In early modern times emphasis was given to the first two aspects or thoughts regarding what makes leaders. First, attention was directed toward the person and personal traits. The behavior of leaders was the second approach (Bass cited in Stogdill, 1981).

The first systematic effort by psychologists and other researchers to understand leadership was the attempt to identify the personal characteristics of leaders. In searching for measurable leadership traits, researchers took two approaches: (1) they attempted to compare the traits of those who emerged as leaders with the traits of those who did not; and (2) they attempted to compare the traits of effective

leaders with those of ineffective leaders (Kenny and Zaccaro, 1983).

Most studies on leadership traits are in the first category; and these studies have failed to uncover any traits that clearly and consistently distinguish leaders from followers (Kenny and Zaccro, 1983). Leaders as a group have been found to be somewhat taller, brighter, more extroverted, and more self-confident than non-leaders (Weiss and Adler, 1984). However, as pointed out by Weiss and Adler, millions of people have these traits, but most of them obviously will never attain a leadership position. In addition, many established leaders did not and do not have these traits - Napoleon was quite short, and Lincoln was moody and introverted (Ghiselli, 1971).

Tead (1935) identified 10 trait qualities which together he felt ideally desirable in a leader; they are as follows: (a) physical and nervous energy, (b) a sense of purpose and direction, (c) enthusiasm, (d) friendliness and affection, (e) integrity, (f) technical mastery, (g) decisiveness, (h) intelligence, (i) teaching skill, and (j) faith. He then proceeded to explain the techniques which are so important, such as (a) giving orders, (b) giving reproof, (c) giving commendation, (d) maintaining a right personal bearing, (e) getting suggestions, (f) strengthening a sense of group identity, (g) care in introduction to the group, (h) creating group self-discipline, and (i) allaying false rumors. Rusk (1978) said four things are characteristics of leaders: (a) respect, (b) integrity, (c) courage, and (d) sensitivity and

concern.

Attempts to compare the characteristcs of effective and ineffective leaders are more recent and fewer in number. But these studies, too, have generally failed to isolate traits that are strongly associated with successful leadership (Kenny and Zaccaro, 1983). One study did find that traits such as intelligence, initiative, and self-assurance were associated with high managerial levels and performance. However, this study also found that the most important factor related to managerial level and performance was the manager's supervisory ability (Kenny and Zaccaro, 1983). Most other studies in this area also have found that effective leadership did not depend on a particular set of traits but on how well the leader's traits matched the requirements of the situation (Kenny and Zaccaro, 1983).

How important then are traits? History tells us leaders are not leaders because of or by traits alone, environment plays a part (Betz, 1981). Jennings (1961) tells us that there have been no personality traits or qualities identified which really contribute to leaders and non-leaders. In summarizing the significance of traits from research studies, Lippitt (1961) reported that only 5% of the traits in over 106 such studies appeared in four or more studies. Inasmuch as these results indicate that a variety of persons with different personality, environmental, and hereditary backgrounds can make successful leaders, the traits approach seems to be inadequate (p.7).

When it became evident that effective leaders did not seem to have any distinguishing traits or characteristics, attention turned to the situation where researchers tried to isolate the behaviors that made leaders effective (Bass, cited in Stogdill, 1981). In other words, rather than try to figure out what effective leaders were, researchers tried to determine how effective leaders behaved - how they delegated tasks. How they communicated with and tried to motivate their subordinates, how they carried out their tasks. Unlike traits, researcher noted that behaviors could be learned; it followed, therefore, that individuals trained in the appropriate leadership behaviors would be able to lead more effectively (Bales, 1951).

"The situation will dictate the leader's behavior depending upon the circumstances, while behavior is identified by the kinds of functions a person carries out" (Hemphill, 1949, p.97). Hemphill continues by stating, "Leadership behaviors appropriate in one situation are not appropriate in another. Nevertheless, despite growing evidence that effective leadership behaviors depend at least partially on the leader's situation, some researchers have reached the conclusion that certain leadership behaviors are more effective than others in a wide variety of circumstances" (pp.107-108).

Just what is it that people search for or look for in a leader? Tead (1935) said that people in groups search for assurance, enthusiasm, zealous conviction of value, meaning, and direction. "They ask to be rescued from the forces of inertia, monotony, stupidity, and cupidity from too self-centered living. It is this rescue which the leader helps to

bring" (pp.257-258).

Considerable emphasis has been given to the amount of direction a leader provides within organizational group settings. The sociological approach to leadership compares societies (Katz, 1957). For example: Society in the USA and Russia are vastly different. Our life is rich and theirs is more drab. It is no mere coincidence that ours, the one which is least planned and least controlled, is not only the most effective, but more rewarding (Randall, cited in Katz, 1957). "A conclusion then can be drawn," states Katz, "that individuals and small groups desire more direction than do larger groups" (p.124). Katz then states, "the age of the organization or its state of development or growth help determine the type of leadership needed. The older will need conformity and stability and maybe even tradition while the new growing organization may require creativity, daring, and rejection of tradition. Productivity declines as motivation declines. Less motivation leads to stability but not to maximum productivity" (p.127).

The work or activity of leaders is not obvious to everyone. Leadership is not easily defined points out Halpin (1966). "It is kind of work done to meet the needs of a social institution or organized group. It is more than holding an office or making decisions. For example, there are decisions of consequence and those that are routine. Not all actions of leaders are truly leadership activities. For example, institutional leaders should be expert in the promotion and

protection of values while the interpersonal leader should smooth the path of human interaction, ease communication, evoke personal devotion, and allay anxiety" (pp.187-188).

According to Randall, cited in Katz, 1957, "Organizations become institutions as they are infused with value, that is prized not as tools alone but as sources of direct personal gratification and vehicles of group integrity" (p.40).

Leaders deal with people, e.g., society; therefore, attention must be paid to how we set goals, make decisions, offer instructions, or give consideration (Kellerman, 1985). A leader must set policy and then build it into the organization. From a personal standpoint, responsible leadership is a blend of commitment, understanding, and determination. From a policy standpoint... most of the characteristics of the responsible leader can be summarized under two headings: the avoidance of opportunism and the avoidance of utopianism (Selznick, cited in Katz, 1957, pp.142-143).

Definition of Leadership

Just as there are many ideas and theories of how leaders accomplish the act of leading, there are many and varied definitions offered for leadership. Bass (cited in Stogdill, 1981) discussed leadership as a group process, personality, the art of inducing compliance, the exercise of influence, as an act or behavior, as a form of persuasion, as a power relation, as an instrument of goal achievement, as an emerging effect on interaction, as a differentiated role, and as the initiation of structure. Of the hundreds of definitions Bass says that until

a standard definition is established, we must continue to live with both broad and narrow definitions, making sure to understand which kind is being used in any particular analysis. Each definition appears to serve one of the following purposes: (a) identify the object to be served, (b) identify a form of practice, (c) satisfy a particular value orientation, (d) avoid a particular orientation or implication for practice, or (e) provide a basis for theory development.

"A definition should do more than identify leaders and indicate the means by which they acquire their position. It should account also for the maintenance and continuation of leadership" (Bass cited in Stogdill, 1981, p.16).

Leadership occurs when one group member modifies the motivation or competence of others in the group. Research in the 1970s often expressed this as the directing of attention of other members to goals and the paths to achieve them. It should be clear that with this definition any member of the group can exhibit some amount of leadership. Members vary in the extent that they do so. Broadly then: Leadership is an interaction between members of a group. Leaders are agents of change, persons whose acts affect other people more than other people's acts affect them (Gurnee, 1936; LaPiere & Farnsworth, 1936).

"Leadership is the process of influencing group activities toward goal setting and goal achievement" (Fiedler & Chemers, 1974, p.4). As Fiedler and Chemers do, Hersey and Blanchard (1982) define leadership as a process, e.g., "Leadership is the process of influencing the activities of an individual or a

group in efforts toward goal achievement in a given situation" (p.83).

Leadership Styles

Several theories or models for leadership style have been identified. Among these the following continue to receive consideration: Great man theory, trait theories, environmental theories, personal-situational theories, psychoanalytical theories, humanistic theories, exchange theories, behavioral theories, and perceptual and cognitive theories (Bass, cited in Stogdill, 1981).

Benne (cited in Lippitt, 1961) thinks that leadership is something that has to be learned. "We must look at it this way," Benne states, "or concede that leadership is inherent in certain persons or classes of people and nothing at all can be done about it" (p.37). Regardless of the theory employed, Pelz (cited in Lippitt, 1961) seems to have strummed a common chord when he said that if a leader helps the group meet their own need then the leader's needs are also met. Thus, "The successful or valued or obeyed leader is one who can help group members achieve their goals" (p.43).

Halpin (1959) and Halpin and Winer (1957) studied the leadership behavior of school superintendents and airplane commanders to identify styles. Their research demonstrated that in order for a group to operate effectively, someone had to perform two major functions: "task related" or problem solving functions and "group maintenance" or social functions.

Additional studies in this area have found that most

effective groups exhibit a form of shared leadership in which one person - usually the manager or formal leader - performs the task function, while another group member performs the social function (Reese and Segal, 1984).

Several leadership behavioral approaches have focused on the style a leader uses in dealing with subordinates. Research has identified two predominate leadership styles: A task-oriented and an employee-oriented style. Task-oriented leaders direct and closely supervise to ensure that the task is performed to their satisfaction. Employee-oriented leaders try to motivate rather than control subordinates (Stodgill and Coons, 1957).

At Ohio State University, research focused on the effectiveness of what they called "initiating structure" (task-oriented) and consideration (employee-oriented) leadership behaviors. Researchers found that employee turn-over rates were lowest and employee satisfaction highest under leaders who were rated high in consideration. Conversely, leaders who were rated low in consideration and high in initiating structure had high grievance and turnover rates among their employees (Stodgill and Coons, 1957). Figure six, in Appendix A, diagrams the leadership styles studied at Ohio State. A later attempt to add self-evaluation led to the development of the Leadership Opinion Questionnaire (Fleishman, 1960). This instrument was designed to determine what leaders thought they should do, not what they actually did.

Similar studies at the University of Michigan

distinguished between production-centered and employee-centered leaders (Fleishman, 1960). Production-centered leaders set rigid work standards, organized tasks down to the detail, prescribed the work methods to be followed, and closely supervised their subordinates' work. Employee-centered leaders encouraged subordinates participation in goal setting and in other work decisions and helped ensure high performance by inspiring trust and respect (Fleishman, 1960).

The University of Iowa studies of 1938-40 identified three predominant styles of leadership: (a) autocratic decisions made by a leader, (b) laissez faire decisions made by individuals, and (c) democratic decisions made by a group. These styles were identified based on decisions and how they were made (Lippitt, 1961). Tannenbaum and Schmidt (1957) point out that while decisions are a significant part of leader behavior they are only 'a' part. "The successful leader can be primarily characterized neither as a strong leader nor as a permissive one. Rather, each is one who maintains a high batting average in accurately assessing the forces that determine what appropriate behavior, at any given time, should be and is actually being able to behave accordingly. Being both insightful and flexible, each is likely to see the problems of leadership as a dilemma" (Tannenbaum & Schmidt, 1957, p.97).

The managerial grid, conceived and developed by Blake and Mouton (1964), has been used with several thousand managers of varying sized organizations to deal with the leadership behavior dilemma (Hall, Harvey, & Williams, 1973).

The grid identifies a range of leader behaviors based on

the various ways that task-oriented and employee-oriented styles, each is expressed on a continuum on a scale of 1 to 9, can interact with each other (Blake and Mouton, 1964). Figure seven, in Appendix A, presents a diagram of Blake and Mouton's Managerial Grid.

Style 1,1 management, at the lower left-hand corner of the grid, is impoverished management - low concern for people and low concern for tasks or production. This is sometimes called laissez-faire management. Style 1,9 management is country club management - high concern for employees but low concern for production. Style 9,1 management is task or authoritarian management - high concern for production and efficiency but low concern for employees. Style 5,5 is middle-of-the-road management - a intermediate amount of concern for both production and employee satisfaction (Blake and Mouton, 1982).

Style 9,9 management is team or democratic management - a high concern for both production and for employees morale and satisfaction. Blake and Mouton argue strongly that the 9,9 management style is the most effective type of leadership behavior. They believe this approach will result in improved performance, low absenteeism and turnover, and high employee satisfaction (Blake and Mouton, 1982).

Likert (1967) devised a four-level model of management effectiveness. Figure eight, in Appendix A, diagrams Likert's Leadership Systems.

System 1 managers make all the work-related decisions and order their subordinates to carry them out. These managers feel

little trust and confidence in their subordinates, and subordinates, in turn, fear managers and feel that they have little in common with them (Likert, 1967).

System 2 managers still issue orders, but subordinates have some freedom to comment on those orders. Subordinates are also given some felxibility to carry out their task but within carefully prescribed limits and procedures (Likert, 1967).

System 3 managers set goals and issue general orders after discussing them with subordinates. Subordinates can make their own decisions about how to carry out their tasks, since only broad, major decisions are made by higher-level managers (Likert, 1967).

System 4 is Likert's ideal system toward which organizations should work. Goals are set and work-related decisions are made by the group. If managers formally reach a decision, they do so after incorporating the suggestions and opinions of the other group members (Likert, 1967).

Tannenbaum and Schmidt (1973) were among the first theorists to describe various factors that they believe should influence a manager's choice of leadership style. While personally favoring a democratic style, they acknowledge that managers need to take certain practical considerations into account before deciding how to manage. They suggest that a manager should consider three sets of "forces" before choosing a leadership style: (1) forces in the manager, (2) forces in subordinates, and (3) forces in the situation. This approach sees the most effective managers as flexible; able to select leadership behaviors needed in a given time and place. Figure

nine, in Appendix A, presents a diagram of Tannenbaum and Schmidt's Continuum of Leadership Behavior.

Another attempt to determine leader style is the LEAD-SELF theory, published in 1974 by Hersey and Blanchard. This instrument was designed to measure self-behavior in varying environments. It placed emphasis on task and social relationships and suggested that the most effective manager would be able to mix the two variables to suit or match the environment; specifically addressing the maturity level of the managers and subordinates (Hersey & Blanchard, 1982).

The trait and behavioral approaches to leadership style produced research showing that effective leadership seemed to depend on a number of variables, such as organizational culture, the nature of the tasks and work activities, and managerial values and experience. No one trait was common to all effective leaders; no one style was most effective in all situations (Kellerman, 1985).

Research then took the next logical step: Identified were factors in the situation that influenced the effectiveness of a particular leadership style. Figure ten, in Appendix A, presents diagrams of the Personality and Situational Factors that Influence Effective Leadership Style.

The factors that influence the leaders effectiveness include the leader's personality, past experience, and expectations; the superior's expectations and behavior; the subordinates' characteristics, expectations, and behavior; the requirements of the task; the organizational culture and

policies; and the expectations and behavior of peers (Hemphill, 1949).

This initial situational perspective of leadership style identified various factors that influenced leadership behavior. Whereas the contingency approach would identify factors of most importance under given circumstances and predicted the leadership style that would be most effective under those circumstances (Fiedler and Mohar, 1979).

The most thoroughly researched contingency model was developed by Fiedler (1965). Fiedler's basic assumption was that it was quite difficult for managers to alter their management styles. He believed that trying to change a manager's style to fit the situation is inefficient and useless. "Since styles are relatively inflexible," states Fiedler, "and since no one style is appropriate for every situation, effective group performance can be achieved by matching the manager to the situation or by changing the situation to fit the manager" (p.171). Figure eleven, in Appendix A, presents a diagram of Fiedler's model of How the Style of Effective Leadership Varies with the Situation.

The leadership styles that Fiedler contrasts are similar to the employee-centered and task-oriented styles. What differentiates his model from the others is the measuring instrument employed. Fiedler measured leadership style on a simple scale that indicated "the degree to which a man described favorably or unfavorably his least preferred co-worker (LPC)". According to Fiedler's findings, a person who describes his least preferred co-worker in a relatively

favorable manner tends to be permissive, human relations-oriented, and considerate of the feelings of subordinates. But, a person who describes his least preferred co-worker in an unfavorable manner - a low LPC rating - tends to be micro-managing, task-controlling, and is less concerned with the human relations aspects of the job (Fiedler and Mohar, 1979).

Fiedler's model suggest that an appropriate match of the leader's style - as measured by the LPC score - and the situation - as determined by the interaction of the three variables - leads to effective managerial performance.

Although the validity of this model has been questioned, it is widely agreed that a significant contribution to our understanding of how leaders and situations can be matched for effective performance has been derived from its use (Fiedler and Chemer, 1974).

The Path-Goal model of leadership formulated by Evans (1970) and House (1971) tried to further the understanding of leadership and predict style effectiveness in different situations. Figure twelve, in Appendix A, presents a diagram of Evans and House's Path-Goal Model of Leadership Style.

The path-goal approach is based on the expectancy model popularized by Porter and Lawler (1968), which states that an individual's motivation depends on the expectation of reward and valence, or attractiveness, of the reward. The path-goal focuses on the leader as a source of rewards. It attempts to predict how different types of rewards and different leadership styles affect motivation, performance, and satisfaction of

subordinates (Evans, 1970; House, 1971).

Hersey and Blanchard (1982) have additionally developed a situational theory of leadership which holds that the most effective leadership style varies with the "maturity" of subordinates. Figure thirteen, in Appendix A, presents a diagram of Hersey and Blanchard's model; The Situational Theory of Leadership.

Hersey and Blanchard (1982) have defined maturity not as age or emotional stability but as a desire for achievement, willingness to accept responsibility, and task-related ability and experience. They believe that the relationship between a manager and subordinate moves through four phases - a kind of life cycle - as subordinates develop and "mature" and that managers need to vary their leadership style with each phase.

In the initial phase a high task orientation by the manager is most appropriate. Subordinates have to be instructed in their task and familiarized with the organization's rules and procedures (Hersey and Blanchard, 1982).

As subordinates begin to learn their task the manager's trust and support can increase. Thus, the manager can start to use employee-oriented behavior. In the third phase, the subordinates' ability and achievement motivation are increased, they actively begin to seek greater responsibility. The manager will no longer need to be directive (Hersey and Blanchard, 1982).

As subordinates gradually become more confident, self-directive, and experienced, the manger can reduce the amount of support and encouragement. Subordinates are then "on their own"

and no longer need or expect a directive relationship with the manager (Hersey and Blanchard, 1982).

Hersey and Blanchard's Situational leadership theory has generated interest because it recommends a leadership style type that is dynamic and flexible rather than static. The motivation, ability, and experience of subordinates must constantly be assessed in order to determine which style combination would be most appropriate.

Each of the designers or promoters of a specific leader style measurement suggests that the instrument assists in knowing one's strengths and, therefore, in what situations the manager will be effective. Hersey and Blanchard (1982) profess that a high task - high relationship manager is most common in U.S. industry and that the manager is likely to be effective with average maturity employees. "The manager will have trouble with the extremes of immature or very mature," Hersey and Blanchard state.

Other pertinent but less scientific approaches have also been observed. For example, today's managers need to have a clean identifiable style ("It's a Matter of Style," 1977). Also, suggested is a more social approach to management. Fiedler (1965) said that we need to engineer the work to fit the style, e.g., put people in the situation where we know their style is effective. But, then there is some question about what their style is and how to measure it. There is also the problem of which style is best if we are going to train for development of leader styles. Chemers and Skrzypek (1971),

Fiedler (1967), and Hersey and Blanchard (1981) offer support for the contingency theory of leadership, e.g., the environment makes a difference as to how a manager should lead, or act. While Hall (1976) and Blake and Mouton (1978) lend their support to a "one best style" of leadership management.

Transformational and Transactional Leadership: Questions to be Answered

Defining These Leadership Concepts

Leadership, as should be noted by the aforementioned definitions and conceptions, has been a difficult concept to understand for several reasons which include common misconception and lack of structurely sound theories to use in an analysis of leaders. "A widely held view that politics, power, and leadership are synonymous has been blinding and inhibiting; power and politics are intertwined in leadership" states (Burns, 1978, p.46). "Power and politics are not the same," he continues, "and neither are power and leadership; however, the latter two influencing processes are interrelated. To understand leadership better, one must understand power, for leadership is a form of power. "They are not entities in isolation; they can exist only when people are involved in some manner of interaction" (p.47).

Bass (1981) stresses that power must be regarded as a form of influence relationship. He states, "It can be observed that some leaders more than others tend to transform any leadership opportunity into an overt power relationship" (p.171). Bennis

and Nanus (1985) state, "We must learn to perceive power for what it is; the reciprocal of leadership" (p.17). For Burns (1978) two aspects of power, motives and resources, must exist in order for power to exist. He states, "If there is no motive, no resource will materialize; having no resources, the motive fails to become activated. Without either, power fails to emerge" (p.12). Burns (1978) continues by pointing out that power is to be viewed as a collective act and not the behavior of one person since it is a relationship and, therefore, cannot exist in isolation. This power process he states, "Is one which power holders (P), processing certain motives and goals, have the capacity to secure changes in the behavior of a respondent (R), human or animal, and in the environment, by utilizing resources in their power base, including factors of skill, relative to the targets of their power wielding and necessary to secure such change" (p.13). This view of power deals with three elements in the process: (1) The motives and resources of the power holders; (2) The motives and resources of power recipients; and (3) The relationship among all these.

"The motives of the power holders may be varied and numerous," states (Burns, 1978, p.19). He continues by stating, " A person with power may want to control others, have status, recognition, prestige, and glory, or they may seek power as an intermediate value instrumental to realizing those loftier goals. The power holder may see social needs of others and use his power to meet these needs. Whatever the motive the power holder has, it must be congruent with the needs of the power

wielder who simply uses power to manipulate and uses others for his or hers own personal goals." Burns (1978) continues by stating, "Leaders are able to induce followers to act for certain goals that represent the values and the motivation - the wants and the needs, the aspirations and expectations - of both leaders and followers. And the genius of leadership lies in the manner in which leaders see and act on their own and their followers' values and motivations" (p.19).

One may ask: Where do motives of leaders come from, or what is the source of motivation? These questions cannot be answered simply with either a general or specific statement. The answers lie in the exploration of the psychological and sociological foundations and experiences of the individual person (Maslow, 1943).

Maslow's hierarchy of needs has received more attention from managers than any other theory of motivation. He viewed human motivation as a hierarchy of five needs:

1. Physiological - need for air, water, food.
2. Security - need for safety, order, and freedom.
3. Belongingness and Love - need for love, affection, and human contact.
4. Esteem - need for self-respect, self-esteem, and achievement.
5. Self-Actualization - need to grow, to feel fulfilled, to realize one's potential.

According to Maslow, individuals will be motivated to fulfill whichever need is prepotent, or most powerful, for them at a given time. "The basic physiological needs of an individual," states Maslow, "must be satisfied by a reward sufficient to feed, shelter, and protect them and their

families satisfactorily" (p. 89). Security needs, Maslow points out, requires job security, freedom from coercion or feelings of arbitrary treatment, and clearly defined regulations.

Maslow described two types of esteem needs - the desire for achievement and competence and the desire for status and recognition. "In organizational terms, people want to be good at their jobs" states Maslow, "they also want to feel that they are achieving something important when they perform their job" (p.91).

When all other needs have been adequately met, according to Maslow, employees will become motivated by the need for self-actualization. "They will look for meaning and personal growth in their work and will actively seek out new responsibilities. A leader who recognizes these motivational needs stands to better assess individuals to determine their reasons for following a particular person" (pp.100-101).

Zaleznik (1983) states that, "If the needs of the people could be meet with a given solution, it would be an administrative problem, and no leadership would be required" (p.32). "Needs," states (Maslow, 1943, p.161), "with more than one plausible solution result in a number of individuals competing for the leadership position." Burns (1978) suggests that moral leadership implies that the followers, or those being offered leadership, have a 'conscious choice among real alternatives.' Only the followers can define what their real needs are and who will occupy the leader role. Therefore, those who want to be the leader will have competition and conflict with others who want to lead. "Conflict," states Burns (1978),

"is not only inherent in leadership, but plays an important role in "expressing, shaping, and curbing it. It can be a motivating force to move forward, or conflict can serve to bring a movement to a stop" (p.38).

It must be stated that the actual needs of the followers and the leaders may not, or need not, be the same. "Leadership," states Burns (1978), "should operate at a higher level of need and value than that of the follower or potential follower, but not at such a higher plane than the follower is able to transcend. In other words, "successful leadership rests on a latent congruence between the psychic needs of the leader and the social needs of the followers" (p.23).

According to Burns (1978) the degree to which leaders and followers interact in purpose and the availability of power and the use thereof, will determine the leadership style being exercised. Thus, Burns saw leadership as falling into two distinct categories: transforming and transacting with each form having several sub-categories.

Transforming Leadership

Burns (1978) states that, "When leaders and followers raise one another to higher levels of motivation and morality, a transformation has occurred" (p.20). He further explains his concept of transforming leadership with a description of the leaders and the led by stating:

> "Their purposes, which might have started out as a separate but related, as in the case of transactional leadership, become fused. Power bases are linked, not as counterweight, but as muted support for common

> purposes. Various names are used for leadership, some of them advisory: evoluting, mobilizing, inspiring, exalting, uplifting, preaching, exhorting, evangelizing. The relationship can be moralistic, of course, but transforming leadership ultimately becomes moral in that it raises the level of human conduct and ethical aspiration of both the leader and led, and thus, it has a transforming effect on both. Perhaps the best modern example is Gandhi, who aroused and elevated the hopes and demands of millions of Indians and whose life and personality were enhanced in the process. Transforming leadership is dynamic leadership in the sense that the leaders throw themselves into a relationship with followers who will feel 'elevated' by it and often become more active themselves, thereby creating new cadres of leaders" (p.20).

Burns identified four types of characteristic leadership which he felt were symbolic of transforming leadership: (1) intellectual, (2) reform, (3) revolutionary, (4) heroic combined with ideology.

Intellectual Leadership. As one reads Burns' (1978) description of intellectual leadership, one may conclude that although it may be credited to one individual, it is pluralistic in that the foundations of thought and ideas were laid by others. Burns (1978) synthesized the differing thoughts and philosophies on intellectual leadership and drew a distinction between the intellect and the intellectual. To clarify this, Burns quoted Richard Hofstadler who wrote: "Intellect is the critical, creative, and contemplative side of mind. Whereas, intelligence seeks to grasp, manipulate, reorder, adjust; intellect examines, ponders, wonders, theorizes, criticizes, and imagines" (p.10).

Burns elaborated on this distinction with, "An intellectual is something more: a person concerned critically

with values, purposes, ends that transcend immediate practical needs. By this definition, the person who deals with analytical ideas and data alone, is a theorist; the person who deals with both and unites them through disciplined imagination is an intellectual" (p.11). Burns additionally noted that the intellectual leader usually emerges during a time of moral and social conflict.

Reform Leadership. According to Burns (1978) reform leaders must possess specific qualities and characteristics to be considered successful. He states:

> "Reformists must have exceptional skill in the management and exploitation of power and politics. They must be able and willing to deal with those in the ranks who have their goals and with those who have anti-leadership doctrines. Successful reform movements require extraordinary demands of strategy. Moral means to achieve moral ends must be utilized. There must be a knowledge and understanding of the real needs of society with a sense of purpose of transcending value. A narrow focus, rather than a general approach, is more likely to be successful. These qualities will not insure success but are certainly instrumental in achieving it" (pp. 169-170).

Burns continued by stating, "Reform efforts often have their beginnings with persons at the top of the social order, those who are not directly affected by the reform. There are two main thoughts as to why this may occur. First, the reform effort may be launched by a potential reformer in order to protect his or her own position. A second plausible reason may be that one has no need for self-fulfillment other than to help others" (p.198).

Far reaching reform, notes Burns, is difficult to achieve because of the methodology and tactics which restrict reform

leadership. Burns states, "Reform is ever poised between the transforming and the transactional - transforming in spirit and posture, transactional in process and results. Revoluntionary leaders understand this" (p.200).

Revolutionary Leadership. As Burns addresses revolutionary leadership he notes that reformers who perceived a social or political condition which in their minds needed reforming and were unsuccessful in reaching their goals may have inadvertently planted seeds for a revolution. He elaborates by stating, "It means the birth of a radical new ideology; the rise of a movement bent on transforming society on the basis of that ideology; overthrow of the established government; creation of a new political system; reconstruction of the economy, education, communications, law, medicine; and the confirmation and perhaps defiance of new leadership. The 'pure' form of revolution is more in practice. Also rare is the revolutionary leader who helps initiate a revolution, lasts through the whole revolutionary cycle of struggle, victory, and consolidation of power, and directs the process of social transformation" (p.202).

Burns continued his discussion of revolutionary leadership by stating, "Requirements for a successful revolution are rather specific. There must be undying commitment by the leaders to the cause which is demonstrated by making it a priority over all other aspects of their lives. Willingness to sacrifice personal comforts, needs, and even one's life is

required. The real needs and aspirations of the populace must be accurately perceived or else have adequate resources to convince potential followers that the expressed goals of the leaders should be their goals. Excessive conflict must exist within the division which is to be overthrown. For revolutionary leadership to be transforming in nature, there must also be the raising of social and political consciousness on the part of both leaders and followers" (p.203).

Heroic and Ideological Leadership. Burns dedicated considerable discussion to "heros and ideologues." For analysis, description, and discussion purposes, he separated the two topics. In his summary, he concluded that heros are not "authentic leaders" in their own right but, that ideologues are. Burns states, "A person who is both a hero and an ideologue has unlimited potential for implementing real social change which would be of a transforming nature" (p.248).

Burns expresses some difficulty with the term "charismatic leadership." He feels that it has been used excessively and incorrectly and, therefore, is devoid of any real meaning. He prefers to substitute the term "heroic leadership" which he described as, "belief in leaders because of their personage alone, aside from their tested capacities, experience, or stand on issues; faith in the leader's capacity to overcome obstacles during crises; readiness to grant to leaders the power to handle crises; mass support for such leaders expressed directly through votes, applause, letters, shaking

hands - rather than through intermediaries or institutions. Heroic leadership is not simply a quality or entity possessed by someone; it is a type of relationship between leader and led" (p.244).

Burns additionally noted, heroic leaders usually arise in a society which is experiencing a crisis. "They offer a value transformation which resolves the conflict being experienced by those seeking a solution," he states. But, Burns makes clear the heroic leader offers little more than temporary emotional and psychological support. Burns writes: "Idolized heros are not, then, authentic leaders because no true relationship exists between them and the spectators - no relationship characterized by deeply held motives, shared goals, rational conflict, and lasting influence in the form of change" (p.248).

The word 'ideology' which originated in the 1790's with French philosophers, has been as carelessly used as the term charisma, submits Burns. He expresses a desire to salvage this term which he sees as essential to understanding leadership. He explains: "The crucial quality of ideology is that it combines both what one believes - one's belief system, value structure, and how one came to hold certain beliefs, the lenses through which one regards the world, the ideas and experience and motivation one brings to the process of sorting out and evaluating the stream of phenomena that one perceives" (p.249).

After stating his cause for maintaining the concept of

ideology, he defines it with this description: "A set of major values and modes of cognition and perception, seated in congruent need and value hierarchies, all of which relate to one another and to social and economic forces and institutions in varying degrees of reinforcement and antagonism" (pp.249-250). "This model," Burns explains, "contains all the elements for implementing real social change of a transforming nature: cognition, conflict, consciousness, value and purpose" (p.250).

Transacting Leadership

Transactional leadership was the second major category of leadership identified by Burns. The potential, he points out, for social change was detected in this form; however, significant change through transactional leadership is rare in actuality. In order to maintain the purity of Burns' definition and description of transactional leadership, he is quoted: "Such leadership occurs when one person takes the initiative in making contact with others for the purpose of an exchange of valued things. The exchange could be economic or political or psychological in nature; a swap of goods or of one good for money; a trading of votes between candidate and citizen or between legislators, hospitality to another person in exchange for willingness to listen to one's troubles. Each party to the bargain is conscious of the power resources and attitudes of the other. Each person recognizes the other as a person. Their purposes are related, at least to the extent that the purposes stand within the bargining process and can

be advanced by maintaining that process. But, beyond this, the relationship does not go. The bargainers have no enduring purpose that holds them together; hence they may go their separate ways. A leadership act took place but, it was not one that binds leader and follower together in a mutual and continuing pursuit of a higher purpose" (pp.19-20).

In an effort to explain the transactional leadership style more fully, Burns describes five types of leadership in this category: (1) opinion leadership, (2) group leadership, (3) party leadership, (4) legislative leadership, and (5) executive leadership.

Opinion Leadership. Katz and Lazarsfeld (1955) view opinion leadership as the simplest form of leadership. According to them, it is casually exercised, sometimes unwitting and unbeknown, within the smallest grouping of friends, family members, and neighbors. It is not leadership on the high level of Churchill, nor of a local politico, nor even of a local social elite. It is at quite the opposite extreme: it is the almost invisible, certainly inconspicuous, form of leadership at the person-to-person level of ordinary, intimate, informal, everyday contact.

Burns (1978) states, "It is difficult to determine who is the leader and who is the follower in opinion leadership" (pp.262-263). He continues by stating, "If a person simply reflects the opinions of others, he is a follower and they are the leaders; however, if one has an opinion and convinces

others to accept or adopt it, he may then be considered the leader" (p.265).

Group Leadership. Group leadership can be observed in such informal groups as semiformal political interest groups (Bell, Hill, and Wright, 1961), and in the formalized structure of a bureaucracy (Weber, 1947; Golembiewski, 1967). Burns (1978) noted that the behavior which occurs between the leader and the led are transactional in nature: mutual support and mutual promises, expectations, obligations and rewards. Burns (1978) describes three types of groups which readily portray this type of leadership: (1) small groups, (2) bureaucracies, and (3) political interest groups.

Although it has been recognized as a basic component of society, the role interactions and influences in the small group have only recently been of interest to psychologists, sociologists, and political scientists (Lieberman, Yalom, and Miles, 1973). The primary purpose of a small group is common interest (Davis and Luthans, 1979). Burns (1978) defined the small group as, "A collection of persons with shared purposes and values; with face-to-face or otherwise physically close relations to one another; with extensive social contacts among themselves as a result of shared interests and influence on one another; with some stabilization of roles" (p.290).

Burns noted the major source of conflict in small groups comes from outside. He describes the behaviors of the group when confronted by a change agent who disrupts the normal equilibrium state of the group: "In this state, efforts to

change the group to a new level or type of activity will bring pressure to return the group in its former equilibrium. The effort to change may generate hostility toward the leaders as the initiator of change, for it is their role to maintain balance between the individual needs and wants of group members and the goal-oriented activity of the group as a whole" (p.290). "The leader of a small group," states Burns, "is usually held in high esteem by the members and also, most often, has a high regard for himself. The power of the leader is more personal or positional than legitimate in the small group" (p.292).

Weber (1947) states, "As opposed to smaller and spontaneously formed informal groups, a bureaucracy is a deliberately conceived and highly structured organization with specific goals. Each member has a definite well-defined role in the hierarchy. Power in the bureaucracy is replaced by authority. Reliability and conformity are characteristics of a bureaucracy" (p.173).

The nature of bureaucracy with formal legitimate authority implies that leadership is not needed or even allowed. However, Burns (1978) observed that to the extent that a bureaucracy is in practice the simple application of authority from the top down, it is not leadership. To the extent that it exemplified conflict, power, values, and changes in accordance with leader-follower needs, it embodies leadership.

Burns additionally noted the struggle for power,

prestige, or position is the most common source of internal conflict within a bureaucracy. "Power," states Burns, " comes in the ability to marshall the available resources through having goals and motives congruent with the majority of the members of a bureaucracy. The potential for change does exist within the bureaucracy with new leadership or new policies of a transactional nature" (p.293).

Party Leadership. The political interest group is not to be confused with a political party. Burns (1978) noted the latter is usually perceived as a group which makes specific demands on the government. Within a political interest group Burns observed the emerging leader may experience difficulty with the followers who may be at various levels in regards to the issue. Burns identified this variety as a possible conflict within the group and that the interaction between leader and led in groups will almost always be transactional.

A political party may be defined as a loose alliance of individuals who rally under a label which vaguely describes a common political philosophy (Bass and Farrow, 1977b). Burns' (1978) examination of the political system was prefaced by three questions: (1) can a party actually offer leadership?, (2) where does the party get its power?, (3) what are the resources available to the party?

Burns noted that parties still select and endure persons who can best represent the collective goals, thus, satisfying the leadership question. "The source of power," states Burns, "comes from the ability of the leaders to correctly know what the followers - and more important, the political followers -

not only need but what they want and expect from their government" (p.340). The resources available noted Burns, are voters. He states, "knowing and understanding the citizenry are always characteristic of a leader. The followers may not always be aware of needs and goals; therefore, it is incumbent upon the party to inform the voters of certain issues, advise them of their choices, and convince them that together, as a united party, if you please, these goals are attainable" (p.343).

In distinguishing party leadership as transactional, Burns comments: "We conclude that party leadership is generally transactional but, it has vast transforming potential. As a structure of leadership in a competitive political situation the party activates leaders throughout the structure; it also converts followers into leaders as conflict over policy and position draws in great numbers of people previously outside the party organization as leaders try to mobilize voters in support of the leaders' efforts" (p.345).

Legislative Leadership. Burns described legislative leadership as being the most classical example of transactional leadership. Using political figures as representative of legislative leadership, Burns wrote:

> "With an assured degree of formal influence over lawmaking and a power base in the electorate 'back home' members interact on a plane of rough equality. Typically the chamber becomes a trading arena in which members' individual interests and goals are harmonized through age-old techniques of bargaining, reciprocity, and payoff. The trading system is not necessarily self-sustaining. Model values of fairness, tolerance, and

> trust guide legislative action. Leadership is necessary for the initiating, monitoring, and assured completing of transactions, for settling disputes and for storing up political credits and debits for later settlement" (pp.344-345).

Burns continues by pointing out that the legislative structure, like small or informal group leadership or larger hierarchical bureaucracies, exemplifies transactional leadership. It rests on reciprocal responses of leader and led to perceived wants, needs, expectations, and values. It, too, depends on conflict for movement; to the extent that conflict is either suppressed or permitted to break up into fragments, stalemate or chaos results, and the transactional process will have failed. Conflict that leads to resolution of conflict by majority victory or by fractional compromise may lead to higher levels of expectation of social change. To the extent that legislatures are not responsive to their constituencies, transaction also fails, as it fails when interest groups submerge leadership. But legislatures cannot on their own exercise transforming leadership" (pp.345-346).

Executive Leadership. Burns states, "the term 'executive leader' has the connotation that the individual with the title would have the authority to make decisions in regards to that which was to be executed for implementation of goals established by the organization or institution" (p.371). However, Burns points out that goals may be comprised in the complicated decision-making process used in reaching the goals. "The executive," Burns continues, "often finds himself gradually relinquishing what he may have initially considered

his right or duty as an executive to the tatics used in legislative leadership - bargaining, exchange, and trade-off" (p.377).

The trade-off of decision-making and the lack of power and resources was viewed by Burns as contributing to the executive leader's rarely being able to marshall support to bring about those social changes associated with a transforming leader. Burns writes: "Executive leadership in itself is inadequate for sustained and planned social transformation. Executive leadership is indispensable for crisis situations and is effective in accomplishing specific and limited goals. But, less of direction and control within the structure of executive leadership; the continuing weight of conflicting commitments, motives, and goals; the restraints inherent in the executive process; the limited time accorded to most executive systems combined with the inability of leaders to marshall ideological and political resources outside the system - all these inhibit executive leaders who, on the face of it and for short periods, seem effective, practical, on top of things" (p.396).

Burns crystallized and illuminated the distinction between the transformational and transactional leader. He spoke in terms of political references where the transactional leader approached followers with an eye to exchanging one thing for another: jobs for votes, or subsidies for campaign contributions; where the transformational leader also recognizes an existing need for a potential follower but, he

or she goes further, seeking to satisfy higher needs, in terms of Maslow's (1954) need hierarchy, to engage the full person of the follower.

In a continuation of Burns (1978) pioneering work, Bass (1985) examined through quantitative measures, the transformational and transactional leadership style and identified each style's distinguishing characteristics.

Distinguishing Characteristics of the Transformational and Transactional Leader

Building upon the foundation of Burns (1978) pioneering work, Bass (1985) examined through quantitative measures, the transformational and transactional leadership styles and identified the distinguishing characteristics of each type.

Bass used a more analytical approach than Burns. He called for the development of new models of leadership where he states, "for a half-century, the study of leadership has centered on autocratic versus democratic approaches; on questions about the locus of decision-making - directive versus participative; on questions about the focus-task versus relationships, or on questions about the behavior - initiation versus consideration. At the same time, springing from the same source has been the attention to the promotion of change in individuals, groups, and organizations. Promoting change and dealing with resistance to it was seen to call for democratic, participative, relations-oriented, considerate leadership. Nevertheless, in many contingencies such as in

emergencies or when leading inexperienced followers, more direction, task-orientation, and initiation were seen to be the more effective way to lead" (pp.3-4).

"The study of leadership," Bass states, "as an experimental social science and in organizational psychology has proceeded from trait to situational theories and thence to their interaction in contingency theories" (p.4). But, he stresses that by limiting survey and experimental leadership research to the effects of leadership on first-order changes, what has been excluded from experimental social science, partly for the sake of scientific advancement, and partly because results could be explained in terms of simple cost-benefit exchanges, may be the more important phenomena of leadership - leadership that accomplishes second-order changes on a higher level; whereas, we can observe the effects of leader-follower relations through symbolism, mysticism, imaging, and sometimes fantasy.

But, Bass was not the first to call for this broader view of leadership. Hambrick and Mason (1983) suggested that both the strategies and effectiveness of organizations can be better understood as reflecting the values and perceptions of powerful actors in the organizations. These theories uncovered evidence that showed when firms were led by younger rather than older top managers, they were more likely to grow and to exhibit more volatile sales and earnings. They also noted that newcomers brought in from the outside to head the organization will make more changes in structure, procedures, and people than executives promoted from within the organization. Yet, as

McCall (1977) stressed, even this research in social and organizational psychology on leadership has focused on the readily observable, usually short-time, leader-subordinate relations and ignored the much more important aspects of leadership to be seen in the charismatic movers and shakers of our time.

For Mueller (1980) this broader view of "leading edge" leadership dealt with "fuzzy features." "It is able to simplify problems and to jump to the (correct) crux of complex matters while the rest of the crowd is still trying to identify the problem," (Mueller, 1980, p.10) contends. Mueller sees the need for research on this "rapid reification." Second, he sees the need for leadership research on how to integrate and relate a charismatic component with the logical and intuitive attributes which are vital to leading-edge leadership.

Zaleznik (1977) sees leaders of the sort called for by Mueller, as arousing intense feelings and generating turbulent one-to-one relationships. "They are inspirational," states Zaleznik, "and concerned with ideas rather than process. They heighten expectations and engender excitement to work. They react to the mundane as to an affliction. They are committed to their own destinies and are likely to be dramatic and unpredictable" (p.10). Kiechel (1983) notes the need for leader vision is increasing along with the much-sought-after skills of motivating people. Bennis (1982) states, "the characteristic of 'vision' heads the list of chief executives who can translate their intentions into reality" (p.11). "Furthermore, he states,

"this leader must transform their followers to gain understanding and commitment making it possible for a dream to come true" (p.11).

Bass' models of the transformational and transactional processes and followers efforts are diagrammed in Figures fourteen and fifteen, in Appendix B.

Characteristic Determination

Burns (1978) described the processes of transformational and transactional leadership through the medimum of a political system - legislatures and parties. Bass (1985) extended Burns description so as to define the relationship between supervisor and subordinate. With this aim in mind, Bass described the transactional leader as follows: (1) Recognizes what it is we want to get from our work and tries to see that we get what we want if our performance warrants it, (2) Exchanges rewards and promises of reward for our effort, (3) Is responsive to our immediate self-interest, if they can be met by our getting the work done. Thus, Bass perceived the transactional leader as one who pursues a cost-benefit, economic exchange to meet subordinates' current material and psyche needs in return for "contracted" services rendered by the subordinate.

"The transformational leader also recognizes these existing needs in potential followers," states Bass, "but, tends to go further seeking to arouse and satisfy higher needs, to engage the full person of the follower" (p.14). "Transformational leaders," continues Bass, "can attempt and succeed in elevating those influenced from a lower to a higher

level need according to Maslow's (1954) hierarchy of needs" (p.14).

Bass saw this transformation occurring through three interrelated ways: (1) By raising our level of awareness, our level of consciousness of reaching them; (2) By getting us to transcend our own self-interest for the sake of the team, organization, or larger polity, (3) By altering our need level on Maslow's (or Aderfer's) hierarchy or expanding our portfolio of needs and wants.

While the above mentioned actions were similar in ideology to Burns (1978), Bass (1985) differed his transformational leadership conceptualization in three distinct respects. First, he added the expansion of the followers' portfolio of needs and wants. Second, Burns saw the transformation as one that was necessarily elevating, furthering what was good rather than evil for the person and the polity. Bass saw the transformation as either good or evil where he states, "for purposes of analysis, what matters is that followers' attitudes and behaviors were transformed by leader's performance. A dominant leader of high school dropouts can convert them into a gang of delinquents. Involved may be altered consciousness, transcendence of self-interest, and movement downward on Maslow's hierarchy of needs" (p.21). The third aspect by which Burns and Bass differed is that Burns saw transformational leadership at the opposite end of a single continuum from transactional leadership. Conceptually and empirically, Bass found that leaders will exhibit a variety of patterns of

transformational and transactional leadership characteristics.

The need to better understand how leaders in business and industry exhibit transformational and/or transactional influences led Bass to consider more quantitative research. He states:

> "If transformational leadership is as important to productive and service organizations as it is to political action, society, and history, then we will need to learn how to develop in managers the sensitivity and interpersonal competence required for them to function as transformational leaders. We will need to determine how to select potential transformational leaders who probably may not show up as well on currently available predictive tests which primarily assess transactional leadership. We will need to overcome parochialism which has focused empirical leadership research on the easier-to-study transactional leadership in which the leader succeeds in helping the followers to satisfy some need they hold. The transactional leader induces performance among followers by negotiating an exchange relationship with them of reward for compliance. Transformational leadership arouses transcendental interests in followers and/or elevates their need and aspiration levels. In doing so, transformational leadership may result ultimately in a higher level of satisfaction and effectiveness among the led. We need to improve our understanding of the short-and-longterm motivation, commitment, involvement, satisfaction, creativity, and productivity of industrial, governmental, military, and educational personnel as a function of the extent to which their superiors are transactional or transformational. To begin to fulfill this need, we must set out to determine the behavioral components of transactional and transformational leadership and their relation to performance outcomes of satisfaction and effectiveness - that is, to the achievement of both expected performance and performance beyond expectations" (p.32).

Emerging from Bass' analyses were five behavioral components. Characteristic of the transformational leader were - charismatic leadership (including inspirational leadership), individual consideration, and intellectual stimulation. Characteristic of the transactional leader was - contingent

reward and management-by-exception (contingent aversive reinforcement) leadership.

The Transformational Leader

The Emotional Component, Charisma

Charisma (literally, endowment with divine grace) is seen in extremely highly esteemed persons (Weber, 1946 cited in Bass, 1981). "Charismatic leaders," states Bass, 1985, p.35, "inspire in their followers unquestioning loyalty and devotion without regard to the followers' own self-interest. Such leaders can transform the establishment."

Charisma depends on followers as well as leaders (Bass, 1985). For political scientists, Wilner (1968) notes charisma packs an emotional wallop for followers above and beyond ordinary esteem, affection, admiration, and trust. For psychoanalytically oriented psychohistorians, Demause (1982) notes charisma entails massive displacements of feelings onto the public stage by both leader and followers. Bass (1985) in examining situations where certain charismatic influences were fostered noted that charismatic leadership arises when crisis is chronic, such as when the ultimate values of a culture are being attached. "People become 'charisma hungry,' Bass states, "in times of distress due to the decline of old values and rituals, shocks to the culture, growing fears, anxieties, and identity crisis" (p.37).

Bass sees the leader with charisma attaining a generalized transformational influence over the organization. He states,

"charismatic leaders engage in impression management to bolster their image of competence, increasing subordinate compliance and faith in them" (p.40). Furthermore, Bass saw charisma as a component - probably the most general and important component - of the larger concept of transformational leadership. He states:

> "charismatic leaders are transformational in that they, themselves, have much to do with the further arousal and articulation of such feelings of need among followers" (pp.42-43).

Bass continues by stating:

> "charismatic leaders are great actors. They are always 'on stage'. They are always projecting to their followers their extreme self-confidence and convictions so that they become larger than life. They must be able to present themselves as miracle workers likely to succeed where others would fail" (p.46).

As important as the charismatic influence is to the transformational process, Bass (1985) noted that charismatics, even when successful as leaders, may fail to have a transforming or inspirational influence on followers. "It will depend on how their charisma combines with the other transformational factors of individualized consideration and intellectual stimulation in specific leaders," states Bass, p.49. Bass notes the charismatic who is a successful transformational (followers are influenced) and an effective transformational leader (followers benefit from the transformation) can be distinguished from the charismatic who is not. He states: "The successful and effective transformational leader is engaged with authentic rather than false needs of followers and with mutual enhancement of effort.

Relatively speaking, the charismatic transformational leader dealing with authentic needs will rely somewhat more on rational, intellectual persuasion; the false messiah who fails to have transforming effects will rely more on rational appeal. While both inspire followers, the charismatic transformational leader more often will appear in the role of teacher, mentor, or coach, the charismatic who is not transforming will appear in the role of celebrity, shaman, miracle worker, or mystic" (p.52).

Bass' model of the charismatic leadership sub-component and how the leader accomplishes the confidence-building and value enhancement of the transformational process is diagrammed in Figure sixteen, in Appendix B.

Individualized Consideration

Andrew Carnegie, notes Bass (1985), exemplified individualized consideration. "He gave as much responsibility to employees at all levels in management to make the most of whatever talents they had at a time when autocratic management was the rule," states Bass, p.81.

Consideration for others has emerged as a consistently important aspect of leader-subordinate relations. Generally, it has been found to contribute to subordinate satisfaction with the leader and in many circumstances to increased subordinate productivity (Vroom and Mann, 1960). "It is central to participative management," Vroom and Mann state, "to the extent that it focuses on the employee's needs for growth and participation in decisions affecting his work and career"

(p.137).

Miller (1974) found that consideration could be broken into two factors. On the one hand, there is consideration revealed in regular group meetings, in consultation with subordinates as a group, in treating all subordinates alike, and in consensual decision-making. On the other hand, consideration can be individualized. Here Miller found that individualized consideration could take many forms. Expression of appreciation for a job well done will be most important but, superiors can also point out weaknesses of subordinates constructively. They can assign special projects that will promote subordinate self-confidence, utilize the subordinate's special talents, and provide opportunities for learning. Superiors can critique subordinate reports to help improve their writing and their oral presentations. They can advise subordinates about new programs and invite subordinates to accompany them on visits to plants and clients. Subordinates can be sent to meetings or assigned to critique as a substitute for the supervisor.

What seems to emerge when we take into account both qualitative and quantitative surveys notes Bass (1985) is that transformational leadership involves individualized attention and a developmental or mentoring orientation toward subordinates. "Transformational leaders practice delegation consistent with their judgements of their individual subordinates, current levels of competence, and need for growth opportunities," states Bass, p.82.

Bass while identifying the individualized consideration characteristic of transformational leadership noted that two types of behavioral orientations are necessary for its successful employment. Developmental orientation behavior, first identified by Morse and Wagner (1978) was reported by subordinates to include career counseling, careful observation and recording of the progress of subordinates' performance, and encouraging subordinates to attend technical courses. Individualized orientation, first identified by Zaleznik (1977), implies seniors maintain face-to-face contact, or at least frequent telephone contact with juniors. Peters (1980) found that successful chief executives practice "walk-around-management" to promote individual contact and communicate between those low and high in the hierarchy.

Another area which Bass (1985) identified as essential to the individualized consideration characteristic of transformational leadership was that of mentoring. Bass states: "Individualized consideration is seen when the senior executive or professional takes time to serve as individual counselor for the junior executive or professional. The mentor is a trusted counselor who accepts a guiding role in the development of a younger or less-experienced member of the organization. Mentors use their greater knowledge, experience, and status to help develop their proteges, not to simply pull the proteges up the organizational ladder on the mentors' coattails" (p.91).

Bass (1985), in summarizing his discussion on individualized consideration, made clear that all transformational leaders do not necessarily display

consideration, individual or otherwise. "They can depend on their charisma and/or intellectual stimulation," Bass states, "but, individuation, one-on-one contact and two-way communication are antecedents to the transformational process and to some extent must be used by all who practice a transforming process" (p.97).

Bass' model of the individualized consideration leadership sub-component as a matter of mentoring and individuation by the leader is digrammed in Figure seventeen, Appendix B.

Intellectual Stimulation

Bass (1985) identified as the third characteristic of a transformational leader that of intellectual stimulation. Bass states: "By the transformational leader's intellectual stimulation, we mean the arousal and change in followers of problem awareness and problem solving, of thought and imagination, and of beliefs and values, rather than arousal and change in immediate action. The intellectual stimulation of the transformational leader is seen in the discernment of the nature of the problems they face and their solutions" (p.99).

In related studies, Wortman (1982) argues that instead of their focus on short-term operations, executives at and near the top of the organization must increase their concentration on strategic thinking and on intellectual activities engaging themselves and their subordinates in the tasks of analysis, formulation, implementation, interpretation, and evaluation. Paige (1977) qualifies the intellectual contribution to

leadership as, "the ability to imagine non-existing states of affairs combined with the ability to influence other people to bring them about" (p.97). Kolb (1982) similarly sees this intellectual component in the leadership of complex organizations as "the ability to manage the problem solving process in such a way that important problems are identified and solutions of high quality are found and carried out with the full commitment of organization members.

Bass (1985) divided intellectual stimulation into two components: (1) the intellectual component, and (2) the symbols and images component. The intellectual component, previously discussed, was noted by Bass to be predominate amongst leaders serving as teachers. He states: "As a profession, teachers often play the role of transformational leader, sharply changing the beliefs and values of at least some of their students" (p.100). He notes that the intellectual contribution of a teacher is particularly important when groups and knowledge organizations face ill-structured rather than well-structured problems.

In describing the symbols and images component, Bass notes the transformational leader concerned with ideas can project these ideas as images which excite subordinates and colleagues. "With these images, they are able to send clear rather than ambiguous messages," states Bass, p.107. He continues by stating, "the intellectual contribution of the transformational leader is seen in the leader's creation, interpretation, and elaboration of symbols. The symbols are representations of chunks of information or signs representing sets of cognitions

related by overlapping functional associations" (p.108). Transformational leaders, Bass noted, can reconcile psychological contradictions between various cognitions and experiences by providing a coherent symbolic context which incorporates the separate elements into a meaningful and consistent gestalt.

Bennis (1982) notes the transformational leader uses a set of symbolic forms such as ceremonies and insignia to show that they are, in fact, leading. "These, crowns of coronations, limousines, and conferences," states Bennis, "circumscribe the arena in which followers can focus their attention, the arena in which leading ideas come together with leading institutions" (p.56). The important events within the arena are seen by followers as what "translates" intention into reality (Bennis, 1982).

Bass (1985) established that introducing and establishing a new and enduring stable system of values, beliefs, and associations was the epitome of effective transformational leadership. He states: "The enduring aspects captured by the new symbols that are substituted for the old symbols and images are an important component in intellectual stimulation of followers. They help to articulate, propagate, and recall the new ideas and beliefs as well as to attach emotional value to them" (p.108).

Bass (1985) in summarizing his analysis of intellectual stimulation noted that there exist different types. He observed that Quinn and Hall (1983) suggested that leaders can provide

stimulation in four different ways depending on their own personal preferences for rationality, existentialism, empiricism, idealism. "These four types of leader differ in the extent to which their intellectual efforts are transformational and transactional," states (Bass, 1985, p.110). "The existentialist's" states Quinn and Hall (1983), "focus on creativity and the idealist's orientation toward growth are transformational, while the rationalist and the empiricist may use their intellect to maintain the status quo as transactional leaders as well as to adequately structure conditions for the future as transformational leaders" (p.68).

As mentioned previously, Bass (1985) notes that any of the three component characteristics of the transformational leader is unlikely to stand alone. Rather, the transformational leader is likely to display some combination of intellectual stimulation, charismatic leadership, and/or individualized consideration.

Bass' model of the intellectual component arousals of, followers by their leaders is diagrammed in Figure eighteen, Appendix B.

The Transactional Leader

The Contingent Reward Component

"Transactional leadership is contingent reward," states Bass 1985, p.121. He continues with, "the leader and the follower agree on what the follower needs to do to be rewarded or to avoid punishment. If the follower does as agreed, the

leader arranges to reward the follower or the leader does not impose aversive reinforcement such as correction, reproof, penalization, or withdrawal of authorization to continue" (p.121).

When the leader acts as an agent of reinforcement, a bargain is struck, a contract is signed, points out Bass. "Leader and subordinate," he states, "accept interconnected roles and responsibilities to reach designated goals and either directly or indirectly, leaders provide rewards for progress toward such goals or for reaching them" (p.122).

Positive or aversive contingent reinforcement are seen as the two ways managers in organized settings engage in transactional leadership to motivate employees (Bass, 1985). "Contingent positive reinforcement," states Bass, "reward if agreed upon performance is achieved, reinforces the effort to maintain the desired speed and accuracy of employee performance" (p.122).

Zaleznik (1977) points out that both contingent reward and contingent penalization are characteristics of transaction-oriented managers because such managers, unlike transforming leaders, are more concerned with efficient processes than with substantive ideas. "They are more interested in what will work rather than in what is true," states Zaleznik, p.67.

Bass' (1985) identification of the contingent reward component as a transactional process was based not only on his quantitative analysis but, also on the works of several other theorists. Bass noted for instance, that the example,

"succinct, pithy statements' quoted from the One Minute Manager (Blanchard and Johnson, 1982, p.43) is an abstraction of so-called current wisdom. Other pithy abstractions about the mainly transactional process of contingent reward include: "Set goals with subordinates", "clarify what performance is needed to reach the goals." The exchange relationship here is a cold transaction of reward for compliance or punishment for failure to comply. Bass notes that such evidence of contingent reinforcement is not exactly the norm nor is it new.

Spector and Suttell (1956) contrasted what they called reinforcement leadership with authoritarian and democratic leadership for correct plans produced by teams of subjects. The authoritarian leader made the group's decisions and did its planning. Praise and recognition as well as material rewards contingent on acceptable performance were observed by Hunt and Schuler (1976) and Oldham (1976) to promote better performance and effectiveness. Reitz (1971) found that subordinate satisfaction was most enhanced when supervisors praised and rewarded subordinates for their acceptable performance as well as reproved them for unacceptable work. Keller and Szilagyi (1976) pointed out that, giving rewards such as praise, recognition, and pay recommendations for acceptable performance not only helped improve performance, but also enhanced subordinates' expectations. Greene and Podsakoff (1981) found in a study of hospital pharmacists that they were more satisfied with their situation if their leaders provided them with rewards (positive feedback) contingent on their performance. Greene and Podsakoff additionally noted that

particularly dissatisfying was noncontingent negative feedback, that is, not really being able to link reprimands with the behaviors that elicited them. Peters and Waterman (1982) noted in their search for excellence that the better companies put a great deal of effort into providing positive reinforcement for successful completion of tasks.

Justification of Contingent Reward.Evolution of the path-goal theory brought attempts to explain why contingent reward works and how it influences the motivation and satisfaction of subordinates. Evans (1970) noted several ways that the leader can serve in the path-goal process to affect a subordinates effort. "They can clarify the subordinate's role, that is, what they expect the subordinate to do. They can increase the size and value of the rewards," states Evans, p.87. House and Mitchell (1974) quickly noted that such leadership was only needed and useful in certain circumstances. "It is needed only if the goal clarity, guidance, and contingent rewarding is not already provided by the organization, the workgroup, or the situation itself," states House and Mitchell, p.161. Klimoski and Hayes (1980) performing a more focused examination, observed that the contingent reward process was influenced by leadership behavior. Five supervisor behaviors were identified as principle influencing elements: supervisor explicitness in giving instructions (explicitness), allowing the involvement of subordinates in determining performance standards (involvement), support for efforts to perform effectively

(support), frequency of performance reviews (reviews), and consistency toward the subordinate (consistency).

Thus, the leader's behavior in the contingent reward path-goal process seem to contribute in varying degrees to subordinates expectations that payoff will accrue to them as a consequence of their efforts (Klimoski and Hayes, 1980).

The Management-by-Exception Component

Bass (1985) correlated with the management-by-exception component, negative feedback or contingent aversive reinforcement. Bass notes that leaders who primarily or exclusively practice management-by-exception, negative feedback, or contingent aversive reinforcement intervene only when something goes wrong. "As long as subordinates are meeting performance standards, the servo-control mechanism remains quiet," states Bass, p.130, "but, if a subordinate's performance falls below some threshold, the mechanism is triggered."

As seen by Bass (1985), negative feedback, particularly if impersonal and buttressed with positive support, can provide the subordinate with needed advice on what not to do. But, he points out, when supervisors manage-by-exception and negative feedback forms the exclusive contribution of the supervisors to their leadership relations with their subordinates, it is likely to be ineffective in contrast to contingent reward. Bass summarizes by stating, "When the intervention is that of reproof or penalization, it can be counterproductive" (p.132).

Komaki (1981) notes the most cited reasons for leaders

avoiding contingent positive reinforcement is that they too often practice management-by-exception, that is, they intervene with negative feedback or disciplinary action when employee performance falls too far below standards. They apply contingent aversive reinforcement, Ilgen and Knowlton (1980) noted. "When supervisors are faced with poor subordinate performance which they attribute to lack of subordinate ability, the supervisor often tends to 'pull their punches', they distort their feedback and make it more positive than it should be" (p.247).

Bass (1985) notes in this regard, we may see a big difference between a more transformational leader who is free of inner id, superego struggles, and the more transactional managers who cannot face up to his organizational responsibilities to reprimand a subordinate, particularly one with whom the manager is closely associated. "Such transactional managers," states Bass, "may not find it difficult to sign a form or press a button which results in laying off a hundred distant employees, but will go to extreme lengths to avoid discharging an incompetent immediate assistant" (p.142).

"Obviously," states Bass (1985), "there is no reason why in practicing management-by-exception, a manager could not also take cognizance of positive deviations from standards and engage in contingent reward as well. But, ordinarily it is the negative deviations from standards that are monitored in management-by-exception" (p.144). The question then is, if

contingent reward is more efficacious, why use contingent punishment?

Research by Greene and Podsakoff (1981) suggest reasons which range from organizational to a manager's perceived loss of power. They report the organization may be a flat structure with many subordinates reporting to a designated supervisor. The latter's time is fully occupied just monitoring the negative deviations. Failure to pay attention to the negative deviations may invite disaster. Full preoccupation with the possible negative deviations inhibits attention to the positive, particularly in the absence of clear goals, clear policies, long-term objectives, and stable outside environments.

On the issue of managers perceived power loss, Greene and Podsakoff (1981) report that managers may lack or may lose their power to provide or recommend rewards. Faced with continuing demands for productivity, managers have been forced to increase their tendencies to use punishment if they lose their ability to provide rewards contingent on subordinate performance.

Blanchard and Johnson (1982) report, reprimand as well as praise should be timely and specific to the behavior involved not to the person. Bass (1985) submits, the effects of "manipulation" while administering either reprimands or praise can have damaging effects on morale and performance. Bass states: "Transactional leadership depends on the power of reinforcement. On the one hand, no one questions that 'generally' subordinates behavior can be influenced by such

reinforcement. Nevertheless, many caveates need to be considered. First, if promises of reward or threats of punishment for subordinate performance are seen as coercion or manipulative, a variety of unintended consequences may appear. One is likely to see counterdependent followers particularly working in opposition to what was intended by the leader's contingent reinforcements. Subordinates may take shortcuts to complete the exchange of reward for compliance. Second, leaders and subordinates need to be clear about the exchange. Complicated piece-rate systems which are a form of contingent reward are likened to the ambiguous experimental situations which generate neuroses in rats. They are likely to induce 'game playing' and fear of 'rate busting.' The subordinate may react defensely rather than adequately. Third, the schedule of reinforcements, their timeliness, variability, and consistency have considerable effect on their influence" (pp.144-145).

Bass (1985) in concluding his review of the management-by-exception component of transaction leadership addressed the individual differences and reaction to contingent reinforcement. He states:

> "Contingent negative feedback is a two-edge sword. Reprimands may not only generate inhibition of the subordinates' undesirable behavior, and increased clarity about what is desirable behavior, they may also generate anxiety which in turn can result in a variety of dysfunctional behaviors to cope with the anxiety, such as reaction formation, guilt, and hostility. This is particularly true of highly motivated subordinates who are already overloaded and under stress. People in this respect differ considerably in their preference for external compared to self-reinforcement. Task-oriented subordinates and experienced subordinates generally are more likely to be self-reinforcing. Interaction-oriented and self-oriented subordinates are

> more likely to be sensitive to both positive and aversive reinforcement from others. Leaders practicing contingent aversive reinforcement such as management-by-exception will foster followers' efforts to comply with clarified standards to avoid negative consequences for failure. If followers succeed in complying they avoid being aversively reinforced and may increase in self-esteem and self-reinforcement. If they fail and leaders attribute the failure to lack of clarity, ability, and understanding, the leaders will renew clarification and attempt to improve followers' ability through training, thus increasing the likelihood of ultimate successful performance by followers. On the other hand, if aversively reinforcing leaders attribute followers' failure to comply to lack of follower motivation, they are likely to reprimand or threaten, possibly generating the unintended effects on followers of hostility, apathy, anxiety, and loss of self-esteem. In turn, there will be a reduction in self-reinforced effort and interface with the efforts of followers to comply" (pp.147-148).

Bass' model of the most important linkages among contingent positive and aversive reinforcement leadership sub-components are diagrammed in Figure nineteen, Appendix B.

The Association Between Transformational and Transactional Leadership and Group Productivity

Productivity, a concept that is almost as hard to explain as it is to measure, typically is calculated by dividing a country's (or an industry's) "output" adjusted for inflation, by the number of labor hours required to create it (Hayes and Wheelwright, 1984). Despite its imperfections as a measurement of economic efficiency, Hayes and Wheelwright point out that Americans have used it for more than 30 years to monitor the vitality of their private sector. But, over the last decade, American society has experienced a deepening sense of malaise.

During what had promised to be "the sizzling seventies" Hayes and Wheelwright (1984) suggest the United States

encountered a series of jolts - some external and some self-inflicted - that eroded both its role in the world and its self-image. One measure of this erosion, which appeared to summarize the economic problems faced by the United States was the productivity of its private sector (Hayes and Wheelwright, 1984). "This deterioration in America's productivity growth rate," states Hayes and Wheelwright, p.4, "compared both with historical experience and with the current rates of its major foreign competitors - fueled inflation, undermined the country's ability to compete in international markets, and, ultimately constrained improvements in its standard of living. Moreover, it calls into question some of the basic attitudes and approaches governing the way Americans lead their companies and manage their economic affairs."

Reich (1983) reports that historically, U.S. managers have been greatly respected because of their aggressiveness along three dimensions: (1) Short-term - use of existing assets more efficiently on products; this requires toughness, determination, and attention to detail; (2) Medium term - substitute a new set of resources for existing ones - such as equipment for labor, or high-skilled labor for less-skilled labor; this requires capital and willingness to take financial risks; and (3) Long-term - development of new products and processes that readdress the same sequence of decisions at a higher level of productivity; this requires both imagination and daring. But, there is evidence that these three managerial approaches are not exercised in concert. "Although during the early 1980's," states Hayes and Abernathy, 1980, p. 2, "there

is little criticism of their continued toughness and attention to short-term performance; called into question is the U.S. managers' performance along the second and third dimensions." "European managers," states Reich, 1983, p.118, "who bewail their lot at the hands of their own government with just as much vigor, and at least as much justification, as do U.S. managers, have been increasingly critical of many American management practices. One commented that the U.S. companies in his industry acted like banks. 'All they are interested in,' he said, 'is return on investment and getting their money back.' In fact, sometimes they act like they are more interested in buying other companies than they are in selling products to customers."

Managers then are perceived as myopic notes Lawrence (1984). "They care only about short-term profits," states Lawrence, p.1, "and have failed to invest in new equipment, research and development, and leadership. Workers seem to lack motivation, discipline, and are shackled by work rules. And, labor and management consider each other adversaries."

Because of this myopic perception and the total concentration on short-term management, instead of long-term leadership, notes Tichy and Devanna (1986), there is a rapidly declining American economy, falling productivity, and trade deficits ranging from $65 billion in 1985 to a staggering $150 billion in 1986. Competitive pressures, from within and from the outside, are forcing companies to re-assess the "supersafe no-risk" mentality of the 1970's and early 1980's. "Emerging, "

they state, "is an new era of leadership and a new leader made in the image professed by Zaleznik (1977). Across the industrial landscape notes Tichy and Devanna (1986), the emergence of a new breed of leader is heralded to meet our nations productivity challenge - the transformational leader. It would seem to this writer therefore, that evidence relating the transformational leader to work group productivity has, to date, been more subjective than empirically based.

Lack of Objective Evidence

Burns (1978) used as his basis of analysis the identification of distinguishing leadership traits by which the transformational leader could be identified. If one were intellectual, a reformist, a revoluntionist, and/or a heroic leader combined with ideology, one would fit the transformational mold. As examples of the transformational leader Burns (1978) used individuals like Gandhi, Roosevelt, and Henry Ford; each of whom transformed entire nations through charismatic leadership, intellectual stimulation, and individualized consideration.

The exact relationship between productivity and styles of leadership still seems somewhat unclear although it has been the subject of extensive study throughout the social sciences. Greene and Schriesheim (1977) completed longitudinal studies on leader initiating structure and group productivity. They found that more initiating structure by the leader can contribute to good group relations which, in turn, possibly may result in higher productivity by the group. Bass (1981) suggests that

effective productivity outcomes modify leader behavior. He cites several studies (Katz, Maccoby and Morse, 1950; Barrow, 1975; and Bass, Binder and Breed, 1967) - where researchers found that leaders become more task-oriented when production falls but they become employee-centered when subordinate performance increases. Likert (1973) used path analysis to demonstrate that leadership contributes directly and indirectly to productive efficiency. Among several thousand workers in Likert's study, productivity was higher when there was supervisory pressure for production.

Results have been mixed in the short-term study of group performance when the performance objectives are immediate productivity. Torrance (1961) reported that crews given feedback by highly authoritarian methods exhibited greater improvement in performance than those given feedback by less highly structured methods. Hise (1968) studying simulated business groups, found that productivity was positively related to close rather than general supervision. D'Angelo (1973) reported that a "human resources" style which involves "striving to continually expand the areas which the manager's subordinates have self-direction and self-centered" was associated with more effective work group productivity.

Other investigations have obtained no significant differences in productivity between democratically and autocratically led groups. Spector and Suttell (1956) found no differences in group performance under democratic and autocratic leadership. Likewise, Lyle (1961) found no

significant differences in performance of group's work under restricted communication, while authoritarian groups worked faster under open communication. Mullen (1965) failed to find group productivity related to supervisory style. Likewise, T.A. Mahoney (1967) found no relationship between democratic supervision and measures of organizational effectiveness in a study of industrial organizations.

More recent explorations of leadership style and group productivity have related more to the transformational and transactional processes. Miller (1985) explores the concept of leaders versus managers. Miller, as well as Zaleznik (1985) and Bass (1985), believes that "managers" are transactional leaders. He states, "Leaders have a wider scope, long-range goals, and instill their visions and enthusiasm in others, while managers tend to be one-dimensional, involved in immediate needs, and produce conformity" (p.8). Miller (1985) notes that by inspiring the employee and giving them a feeling of really being an important and vital part of a company, it is suggested that increased productivity and profit are bound to follow.

Podsakoff and Todo (1985) in a study designed to investigate the relationship between the employee's perception of reward and punishment behavior of those in leadership positions and the work group processes as well as productivity, found that productivity, cohesiveness, and drive are all essential to group processes. They noted that contingent behavior produced group drive, while noncontingent behavior decreased drive. "Leader behavior," they state, " may possibly

increase the employees' belief that they are being treated fairly and so increase group productivity" (p.57). Rediger (1986) in a study of today's steel industry found that the most important cause for its demise was the lack of productivity. Rediger states, "there is an effort now to increase productivity, but the problem is that top leadership in many steel industries, or U.S. industries in general, have failed to anticipate change and lead change constructively. True leaders are agents of change who generate relevant employee participation" (p.10).

Ranftl (1986) in an examination of the Hughes Aircraft Company found that basic factors of high productivity complement the elements common to high creativity and innovation. He identified seven factors that help to achieve high productivity and creativity: (1) skilled, responsible management, (2) outstanding leadership, (3) organizational and operational simplicity, (4) effective staffing, (5) challenging assignments, (6) objective planning and control, and (7) specialized managerial training.

Sears (1986) in a study of today's human resource development practitioners, noted that managers must begin planning work at levels of detail that will make it possible for individuals and groups to know they have performed satisfactorily. Sears states, "American management has been shaped by only one concept - authority. Corporate leaders must communicate with employees the need to think and work and provide an environment for innovativeness" (p.18).

Want (1986) in a discussion of corporate mission noted that in order to direct a company effectively within a competitive environment, management needs to develop a corporate mission that: (1) helps employees recognize the firm's identity and future course, (2) forges employee commitment through the establishment of values acceptable to all, and (3) supports cohesiveness in operations and productivity. He proposes as a means to achieving these goals a chief executive who's leadership serves as a standard for transforming the corporate mission.

Snyder (1986) notes in a study of leadership and the transforming of U.S. business, that lack of leadership is the most important problem facing U.S. organizations today. He proposes that there are three qualities that distinguish true leaders from good managers: (1) vision, (2) values and beliefs that translate the vision into operational terms, and (3) an orientation toward taking action and risks to make the vision a reality.

Herman (1986) when addressing the leadership and wealth question, notes that quality and productivity declines in the U.S. have resulted from a mismanagement of people resources based on control through fear and submission, which is completely contrary to the American driving forces of individualism. He points out that instilling self-motivation requires an understanding of individual needs and individual relations within the dynamics of small groups. Herman states, "Managerial conflict control relies on an understanding of the basic human needs of contentment and fulfillment, along with

the need to belong, which facilitates the giving and receiving of help. Doer-helper units are synergistic in facilitating achievement of harmonious excellence and in fostering increased trust. Synergistic groups in pursuit of accepted goals yield optimum productivity, quality, and fulfillment" (p.38). Akin and Hopelain (1986) found in a study of organizational culture and productivity, that workers in any organization develop a "culture of productivity" a shared image of their work setting as very productive. They stress that if productivity is to be measured, explained, and improved, a more detailed understanding is needed of this culture.

Akin and Hopelain state, "the images characterizing highly productive operations are legible, coherent, and open-ended. Productivity occurs when management and workers focus principally on the work being done and on how things operate successfully" (p.30).

In summarizing this discussion of the effects of transformational and transactional leadership style on work group productivity the author refers to Bass (1985) and his discussion of leadership - good, better, and best.

> "For half a century leadership research has been devoted to studying the effects of democratic and autocratic approaches. Much investigative time has gone into the question of who should decide on the appropriate approach - the leader or the led. Equally important to research has been the distinction between task orientation and relations orientation. Still another issue has been the need of the leader to 'initiate structure' for subordinates and to be considerate of them. At the same time, increasing attention has been paid to the ability to promote change to individuals, groups, and organizations. The need to promote this change and deal with resistance to it has, in turn, put an emphasis on democratic,

participative, relations-oriented and considerate leadership. Contingent rewards have been stressed in training and research. We have mostly considered how to marginally improve and maintain the quantity and quality of performance, how to substitute one goal for another, how to shift attention from one action to another, how to reduce resistance to particular actions, or how to implement decisions. But higher-order changes are also possible. Increases in effort and the rate at which a group's productive speed and accuracy improve, can sometimes be accelerated. Such higher-order changes also may involve larger shifts in attitudes, beliefs, values, and needs. Quantum leaps in productivity may result when a group is roused out of its despair by a leader with innovative or revolutionary ideas and a vision of future possibilities. Leaders may help bring about a radical shift in attention. The context may be changed by leaders. They may change what the followers see as figure and what they see is ground or raise the level of maturity of their needs and wants. The lower order of productivity improvements - changes in degree or marginal improvement - can be seen as the result of leadership that is an exchange process: a transaction in followers' needs are met if their performance measures up to their leader. But, higher order productivity improvements call for transformational leadership. There is a great deal of difference between these two types of leadership" (pp.27-28).

Summary

More than 5,000 references, whose subject is specifically leadership, have been researched to help compile what we know about leadership (Bass, cited in Stogdill, 1981).

Early emphasis on leadership divided scholars into two groups: those who thought that leaders were leaders because of their environment and another group who thought that personal traits made leaders (Betz, 1981). In more recent years students of the study of leadership have been strongly influenced by the work of the Ohio State University and Iowa University. In 1938-40 the Iowa studies emphasized three leader styles as

autocratic, laissez faire, and democratic. Then in the late 40s and early 50s the Ohio State University studies began to place emphasis on leader behavior.

Many definitions of leadership have been written; however, there are insignificant or minor differences in most. In 1936, Gurnee and Lapiere and Fansworth said that leadership is an interaction between members of a group. "They are agents of change, persons whose acts affect other people more than other peoples' acts affect them" states Gurnee et al. p.103. "Leadership is the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation" (Hersey & Blanchard, 1982, p.83). By these definitions the conclusion is that all people lead at one time or another since they do influence others' actions.

Styles of leadership vary and writers and researchers do not agree upon which model or theory is best. Benne (cited in Lippitt, 1961) thinks that leadership must be learned, otherwise it would be limited to certain people and nothing could be done about it.

Most styles identify two important areas of concern. Those that are concerned for people and society and those that are concerned for productivity alone. "Leaders have a significant role in creating the state of mind that is the society. They can serve as symbols of the moral unity of the society. They can express the values that hold the society together. Most important, they can conceive and articulate goals that lift people out of their petty pre-occupations, carry them above the conflicts that tear a society apart, and unite them in the

pursuit of objectives worthy of their best efforts," (Gardner, 1965, p.241).

The individual Gardner described practices "transformative leadership," the province of those leader characteristics that have been discussed. Transformative leadership, according to Bennis and Nanus (1985) achieves significant change that reflects the community of interests of both leaders and followers; indeed, it frees up and pools the collective energies in pursuit of a common goal.

In concluding this literature discussion of leadership phenomena we will concentrate on some sweeping generalizations about the transformative process and work group productivity gains. Bennis and Nanus (1985) submit transformative leadership is collective. "There is a symbiotic relationship between leaders and followers, and what makes it collective is the subtle interplay between the followers' needs and wants and the leader's capacity to understand, one way or another, these collective aspirations," states Bennis and Nanus p.14. "Transformational leadership," states Drucker (1984), "is about change, innovation, and entrepreneurship" (p.11). The author agrees with Drucker (1984) where he states, "these are not the provinces of lonely, half-mad individuals with flashes of genius. Rather, this brand of leadership is a behavioral process that is systematic, consisting of purposeful and organized search for changes, systematic analysis, and the capacity to move resources from areas of lesser to greater productivity"(p.14).

Transformative leadership according to Tichy and Devanna (1986), is 'causative' meaning that leadership can invent and create institutions that can empower employees to satisfy their needs. "Transformative leadership," they state, "is morally purposeful and elevating, which means, if nothing else, that leaders can, through deploying their talents, choose purposes and visions that are based on the key values of the work force and create the social architecture that supports them. Finally, transformative leadership can move followers to higher degrees of conscientiousness, such as liberty, freedom, justice, and self-actualization" (p.29).

These transformative leaders of transformational organizations are developing and communicating a new vision of their companies and are getting others to see the vision and to commit to it, points out Goddard (1986). "They are making major changes in the company's mission, structure, and human resource management," he states, "they are evoking fundamental changes in the basic political and cultural systems of the organization" (p.14).

What does all this mean to us? It means a growing number of business leaders recognize that companies will not remain competitive unless there are major changes in productivity, innovation, and marketing (Tichy and Ulrich, 1984). It means today's organizations must be reshaped to meet tomorrow's needs and that new contexts and ways of thinking about management must be instituted (Bass, 1985).

The transformational leader alluded to in this document is in a race to revitalize our industries for maximum

productivity, points out Tichy and Devanna (1986). "Who will win and who will lose is unknown," they state, "but, these individuals have a good chance of making it" (p.32). They continue by stating, "The U.S. and many European companies have yet to recognize the need for revitalization. Our challenge is to adopt what we have learned to a world where the frontier is closed and opportunity is more limited. Our challenge is to transform ourselves and our institutions to meet the challenge of the new reality. A reality that calls for transformational, not transactional leadership to revitalize our organizations" (p.32).

This exploratory study is designed to investigate if the association between transformational and/or transactional leadership styles and group productivity is real and significant.

CHAPTER III

METHODOLOGY

Introduction

The first section of this chapter discusses the research design to be employed in investigating the associative relationship between leader style, transformational and transactional, and group productivity (measured in terms of divisional efficiency). The following sections describe the research methodology design, objective productivity measurement, survey instrument development and design, data collection and recording, survey scales and levels of measurement, survey implementation, statistical analyses, and respondents' characteristics. The chapter concludes with a discussion of methodological assumptions and limitations.

Research Methodology Design

This study was exploratory in nature and cross-sectional in application. The leader styles - transformational and transactional - were considered the independent variables. The study was designed to determine the independent variable(s) associative relationship or lack of association to group productivity, the dependent variable.

In addressing this association issue, the proposed

research design aided in the answering of the following research questions:

1. Is there a difference in group efficiency, as measured by output/input ratio, as a result of one management style - transformational and/or transactional?

2. If the transformational leadership style is found to be associated to increased efficiency, is the charismatic sub-component, as measured by output/input ratio, more of an influencing factor than the individualized consideration sub-component?

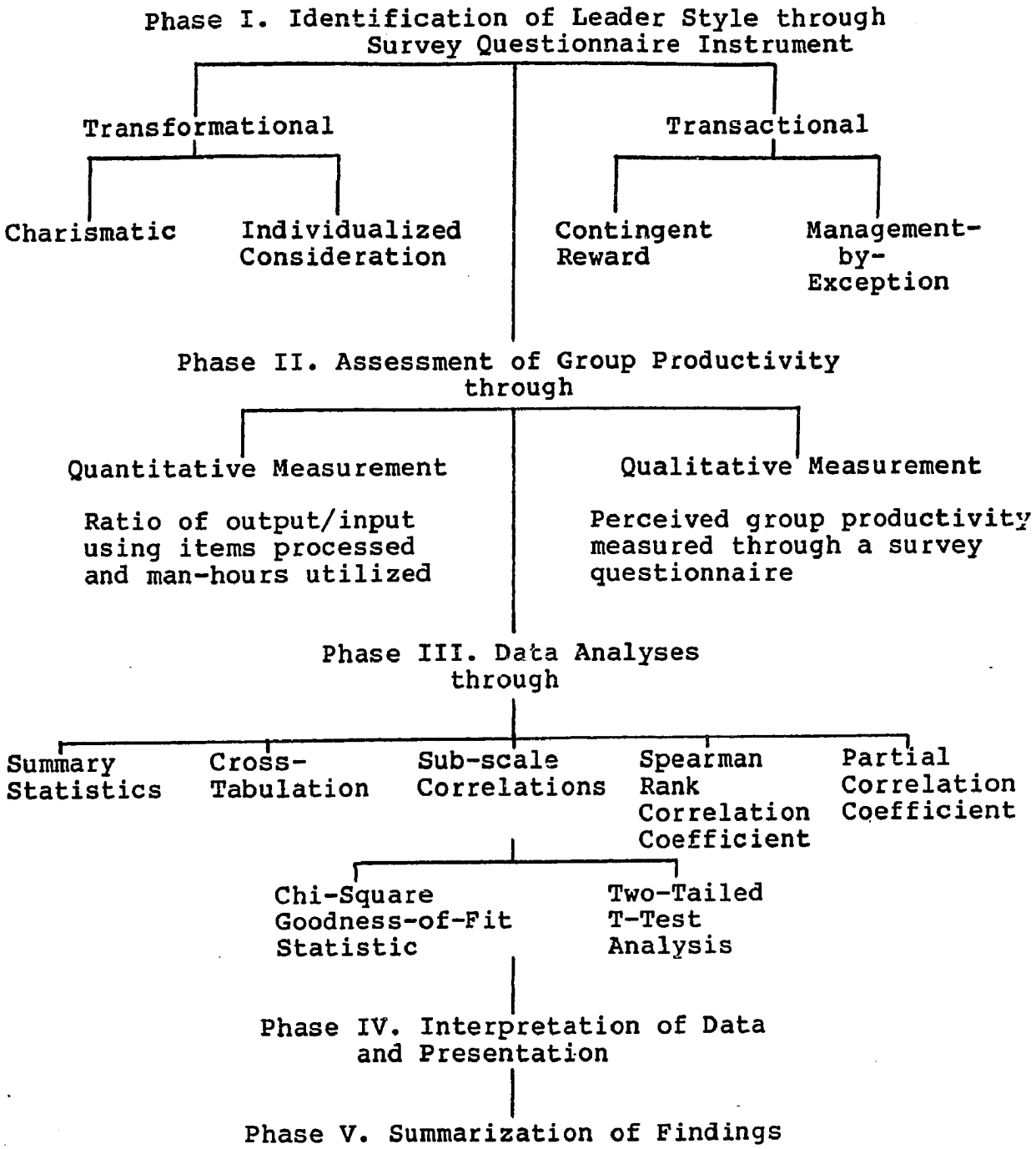
3. If there is no association between the transformational style of leadership and increased efficiency, is the transactional leadership style contingent reward sub-component, as measured by output/input ratio, more of an influencing factor than the management-by-exception sub-component?

The field study was conducted within the XYZ Corporation, a diversified aviation services organization, with specific analyses occurring within an aviation maintenance support site located at the Naval Air Station, Patuxent River, Maryland. Organization charts showing division of work, managers and subordinates, type of work performed, grouping segments and levels of management are provided in Appendix C. The letter of consent from the organization to perform this exploratory research is provided in Appendix D.

This study proceeded with a structured survey research methodology; a methodology used to study large and small populations and to discover the relative incidence distribution and interrelations of sociological and psychological variables (Kerlinger, 1973). The literature review established the framework for the assessment of the associative relationships between the independent variables of transformational and transactional leadership styles and the dependent variable, group productivity. Figure one illustrates the methodology

employed:

Figure 1. Structured Research Methodology



Through the application of this methodology the three

proposed null hypotheses were addressed:

1. Ho: There is no difference in efficiency, as measured by output/input ratio, as a result of one management style - transformational and/or transactional.

2. Ho: There is no difference between the influencing effects of the charismatic and individualized consideration sub-components, as measured by output/input ratio, given the transformational style of leadership is associated with group productivity.

3. Ho: There is no significant difference between the influencing effects of the contingent reward and management-by-exception sub-components, as measured by output/input ratio, given the transactional style of leadership is associated with group productivity.

The methodological framework for this research was designed to identify leader style and its association or its lack of association with group productivity. The foundation for this framework was laid from the findings of Burns (1978) and the identification by Bass (1985) of the transformational and transactional leader and his/her characteristics. A survey questionnaire instrument was prepared to gather data from the personnel working at all division levels within the XYZ Corporation's, Patuxent River site.

Correctly completed survey responses were statistically analyzed using a statistical graphics software package called Statgraphics (1985) which, when employed, assessed leadership style and its perceived association to group productivity. The statistical analyses, including summary statistical measures, correlations matrices, cross-tabulations, the Spearman Rank Correlation Coefficient, Partial Correlation, and T-Test statistic were used to assess leader style and normalized output/input productivity ratio relationship. The analyses led to either the rejection or the failure to reject the stated

null hypotheses.

An outline of the research and analysis plan steps is as follows:

1. Literature Review
   - identification of transformational and transactional leadership styles and their distinguishing characteristics
   - identification of subjective relationships concepts between a transformational and/or transactional leadership style and group productivity

2. Survey Instrument Pre-Test
   - 10% random sample
   - statistical analysis
   - revise and refine final survey instrument

3. Full Instrument Survey
   - statistical analysis
   - correlations of leadership style and group productivity

4. Hypotheses Testing
   - associative relationship between leadership style and group productivity
   - distinguishing leadership style characteristics
   - test implications
   - detailed findings

Survey Instrument Development, Data Collection Sub-components, Productivity Measurement and Instrument Design/Administration

The two independent variables of the study - transformational and transactional leadership styles - were measured against the dependent variable - productivity - within the XYZ Corporation's Patuxent River site. Five separate divisions were surveyed, each performing varied aviation maintenance and administrative functions. These divisions were as follows:

1. Test Pilot School (TPS)
2. Rotory Wing Aircraft Test Directorate (RWATD)

3. Aircraft Intermediate Maintenance Directorate (AIMD)
4. Force Warfare Directorate (Force Warfare)
5. Station Aircraft Test Directorate (SATD)

The total organizational population of N_{total}= 475 was considered the sampling frame (Kerlinger, 1973). The total number of managers assessed was N_{total}= 45.

Data collection was accomplished by administering a survey questionnaire instrument. The survey questionnaire method was selected as the method of data collection because it was an efficient tool for obtaining information in ex post facto research. In addition, the specific items on an instrument "objectify, intensify, and standardize" the observations of respondents (Van Dalen, 1979, p.152). This instrument was composed of characteristic identification statements found in Bass (1985) and a section of a survey instrument developed by the Naval Personnel Research and Development Center (NPRDC) on group productivity.

External and internal validity of the two source survey instruments was established through the use of each in practical application (Bass, 1985; NPRDC Survey Methods, 1986). Reliability of the proposed survey instrument and its sub-scales was established through the use of a modified Kuder-Richardson formula (Allen and Yen, 1979). Each sub-scale item was inter-correlated with the remainder of the items in its sub-scale rather than with the sub-scale score including the item. The procedure yielded a conservative estimate of sub-scale reliability. Respondents' reliability on perceived productivity was assessed through reversed polarity sub-scale

items; whereas, the respondent who answers favorably on one sub-scale item should reflect an equal but opposite opinion on another selected sub-scale item (Claire, S. et.al., 1976).

Survey Instrument Development

Bass (1985) developed his characteristic identification items of transformational and transactional leadership through several qualitative and quantitative studies. The first was through a pilot study of 70 male senior industrial executives to see if the concept was of value in the context of complex organizations. A transformational leader was described to the executives as someone who raised their awareness about issues of consequence. He was one who could shift them to higher-level needs, and influence them to transcend their own self-interest for the good of the group or organization. Thus, to work harder than they originally had expected they would.

Bass noted this pilot study led to speculation that while transactional leadership can provide satisfactory results in the short-term , transformational leadership is likely to generate more effort, creativity, and productivity in the long run.

The need to better understand how business and industry leaders can induce second order exchange theory increases in effort was evidenced in an indepth interview survey of a representative national sample of 845 working Americans (Bass, 1985). The survey found that most managers really didn't know how to motivate employees to give their best. Only 23 percent

of the survey respondents said they were working as hard as they could in their jobs, although 70 percent stated that they endorsed the work ethic.

Bass concluded from this research that if transformational leadership was as important to productive and service organizations as it was to political action, society, and history, then there was a need to learn how to develop in managers the sensitivity and interpersonal competence required for them to function as transformational leaders. Bass noted there was a need to improve the understanding of the short and long-term motivation, commitment, involvement, satisfaction, creativity, and productivity of industrial, governmental, military, and educational personnel. To fulfill this need, Bass set out to determine the behavioral components of transformational and transactional leadership and their relation to performance outcomes of satisfaction and effectiveness - that is, to the achievement of both expected performance and performance beyond expectations.

To explore these behavioral components, Bass analyzed quantitatively the transactional leader's emphasis on exchange with followers of benefits for compliance and the transformational leader's emphasis on mobilization and direction of followers toward expanded, higher, or transcendental objectives.

Bass selected as a test group a sample of 102 MBA students undergoing graduate courses. The students were divided into two groups of 52 and 50 respondents. Both groups were asked to indicate on a seven point leadership characteristic scale the

highest, usual, and lowest level of activity of a transactional or transformational leader for whom they had worked or they knew well enough to rate. These seven leadership characteristics were as follows:

(1) Task Direction
(2) Participation
(3) Consideration
(4) Performance Feedback
(5) Integrity
(6) Performance Rewards
(7) Representation

The group of 52 MBA students were asked to assess the characteristics of one whom they had worked with or knew well enough to rate. They were directed to use the following working definitions of the transactional leader:

"(1) The leader recognized what it was you wanted to get from your work and tried to see that you got what you wanted if your performance warranted it.

(2) The leader exchanged rewards and promises of reward for effort and good performance.

(3) The leader was responsive to immediate self-interests if they could be met by your getting the work done" (Bass, 1985, p.196).

The group of 50 MBA students were asked to assess the characteristics of one with whom they had worked with or knew well enough to rate. They were directed to use the following working definitions of the transformational leader:

"(1) The leader motivates you to do more than you originally expected to do.

(2) The leader raises your level of awareness about important matters.

(3) The leader increases your level of needs from need for security or recognition to need for achievement or self-actualization.

(4) The leader leads you to transcend your own self-interests for the good of the team or the organization" (Bass, 1985, p.196).

The working hypothesis of the Bass MBA study was that transformational leaders would be described as displaying a more intensive pattern of leadership activity levels. Bass found no significant differences in intensity on five of the seven leadership characteristic scales. These five were: task, direction, participation, consideration, performance feedback, and representation.

Bass then compiled specific transformational and transactional items to make a reliable distinction between them. He used the open-ended responses of the 70 executives in the pilot study as one source of items describing the transformational leader. He then compiled from a survey of the literature (Bass, 1981), with particular attention to influence processes, charisma, and the dynamics of exchange, numerous additional items describing transformational and transactional leaders. A total of 142 items were drafted.

These items were then submitted to 11 graduate MBA and social science students enrolled in a seminar on leadership. Each was given a detailed definition of transformational and transactional leadership and asked to clarify the meanings for themselves of such terms as charisma, idiosyncrasy credit, esteem, and power. Following this, each student alone sorted the 142 items into three categories: transformational, transactional, or "can't say." Seventy-three of the 142 items were selected for inclusion in a revised questionnaire (Bass, 1985).

To see if the items were identifiable as either clearly transformational or clearly transactional, Bass scaled the items for psychometric studies using the same two dimensions. The 73 items were randomly scrambled in a questionnaire and administered to a total of 104 U.S. Army Colonels, foreign officers, and civilians of equivalent rank.

A principal components factor analysis was run with varimax rotation on the data from the 104 military officers who completed Bass's Leadership Questionnaire. Five factors emerged with eigenvalues above 1.0 and accounted for 89.5 percent of the common variance among the 73 items (Bass, 1985). These were:

Factor I - Charismatic Leadership, accounted for 64.9 percent of the 86.8 percent total variance of consequence.

Factor II - Contingent Reward, accounted for 6.3 percent of the variance among the 73 items.

Factor III - Individualized Consideration, accounted for 6.0 percent of the variance among the 104 cases.

Factor IV - Manage-by-Exception or Contingent Aversive Reinforcement, accounted for 4.3 percent of the variance for the 104 cases.

Factor V - Intellectual Stimulation, accounted for 2.9 percent of the common variance for the 104 cases. Because of the low percentage relationship and limited item descriptors (3) this distinguishing characteristic was omitted from the study.

Data Collection Sub-components

The exploratory research for this dissertation similarly measured leadership style through the sub-components of charismatic leadership, individualized consideration leadership, contingent reward, and the management-by-exception

leadership.

Charismatic Sub-component

The charismatic sub-component was examined through seven survey statements. These were selected from a total of eighteen items with selection based on the highest factor loadings (Bass, 1985). Factor loadings and their corresponding items are as follows:

Charismatic Leadership Sub-component:

Factor loading	Item
.87	I have complete faith in him/her.
.86	Is a model for me to follow.
.82	Inspires loyalty to the organization.
.84	Is an inspiration to us.
.84	Inspires loyalty to him/her.
.85	Makes me proud to be associated with him/her.
.83	Encourages me to express my ideas and opinions.

Individual Consideration and Contingent Reward Sub-components

The individualized consideration and contingent reward sub-components were examined through seven items each. Selection of these items was not necessary since each sub-component was identified by only seven items. Items for each of these sub-components are as follows:

Individualized Consideration Sub-component

	Item
(1)	Gives personal attention to members who seem neglected.
(2)	Finds out what I want and tries to help me get it.
(3)	You can count on him/her to express his/her appreciation when you do a good job.

(4) Is satisfied when I meet agreed-upon standards for good work.
(5) I earn credit with him/her by doing my job well.
(6) Treats each subordinate individually.
(7) Makes me feel we can reach our goals without him/her if we have to.

Contingent Reward Sub-component

Item

(1) Tells me what to do if I want to be rewarded for my efforts.
(2) There is close agreement between what I am expected to put into the group and what I can get out of it.
(3) Gives me what I want in exchange for showing my support for him/her.
(4) Whenever I feel like it, I can negotiate with him/her about what I can get from what I accomplish.
(5) Talks a lot about special commendations and promotions for good work.
(6) Assures me I can get what I personally want in exchange for my efforts.
(7) I decide what I want; he/she shows me how to get it.

Management-by-Exception Sub-component

The management-by-exception or contingent aversive reinforcement sub-component was examined through six items. Selection of these items was not necessary since only six were identified. Items for this sub-component are as follows:

Management-by-exception Sub-component

Item

(1) As long the old ways work, he/she is satisfied with my performance.
(2) He/she is content to let me continue doing my job in the same way as always.
(3) As long as things are going all right, he/she does not try to change anything.
(4) Asks no more of me than what is absolutely essential to get the work done.
(5) It is all right if I take initiatives but he/she does not encourage me to do so.
(6) Only tells me what I have to know to do the job.

NPRDC Survey Sub-component

Perceived, subjective group productivity was measured through the use of six items, selected from a group of ten, from the NPRDC survey instrument. Item selection will be based on appropriateness of the item content for the research framework and the reversed polarity characteristic of the items (Claire, S. et.al., 1976). Grouping categories, A,B, and C, measured group communications, innovativeness, and goal achievement respectively.

The NPRDC survey instrument was developed for use with the productivity improvement efforts espoused by W. Edwards Demings. It was employed in October and November, 1985, and again in January and February, 1986, within the five Naval Aviation Depot Rework Facilities and proven effective in assessing subjective individual and group productivity perceptions. The items to be employed for this research and their group pairings are as follows:

Productivity Assessing Statements

	Item
Group A.	(1) When problems occur, people in my work group talk openly in an honest effort to resolve them.
	(2) Our work group discusses ways to get more done.
Group B.	(3) I would be criticized by members of my work group if I were to work harder than they do.
	(4) People are criticized in my work group if they try to improve things.
Group C.	(5) Our group does what it is supposed to do and does it well.
	(6) We meet our productivity requirements.

Objective Productivity Measurement and Analysis Methodology

The objective measure of productivity was the ratio of output divided by input (number of items processed divided by the number of hours to produce them). A fiscal year's production data, from April 1986 through March 1987, was evaluated by month and used as a comparison standard for each division.

Figure two represents a calculation of this quantitative measurement. It should be recognized that there could be no generalizations across divisional units because of task responsibilities and environmental peculiarities. The efficiency/effectiveness ratio was unique to each division.

Figure 2. Quantitative Productivity Measurement

.Productivity center location: Test Pilot School (TPS)

.Period Covered: May 1987 (one month example only)

.Cumulative hours expended performing maintenance functions: 27,980 (weekly totals x 4)

.Items processed (comprised of all maintenance action forms (MAF's) and support action forms (SAF's): 7328 (weekly totals x 4)

.Productivity ratio: .26 (7328/27,980)

Output/Input Ratio Analysis Methodology

After all divisional productivity ratios were derived, a database was established containing ratios by division. Since the calculation process with ratios of the type derived in Figure two, can be confusing and awkward when conducting statistical analysis, a normalization procedure was employed to

standardize, through coding, the raw ratios (Freund, 1979). Allen and Yen, (1979), point out that the advantage of transforming to normalized scores is that the transformed distribution has a well-known form that is easily interpretable and is amenable to common statistical manipulations (p.165). Class intervals, each equal, were established with coding consisting of successive integers from 1 through 4. Figure three illustrates an example of this normalization procedure.

Figure 3. Productivity Ratio Normalization

Raw Ratio	Normalized Value
.001 - .150	1
.151 - .301	2
.302 - .452	3
.453 - .603	4

These normalized values were then assigned to the raw divisional ratios, summed, and a mean score derived. This normalized mean was then used as a representative score for the individual productivity rate for each respondent. These normalized output/input scores were assigned to each respondent by division in a separate database for ease of statistical analysis.

The use of the group mean to represent an individual response is not new. Evans (1970) and House (1971) employed a similar strategy when exploring the areas of leadership and predicted style effectiveness in their "Path-Goal Model of Leadership." The author deemed it appropriate for this research

because individual productivity measurements could not be obtained for each respondent.

Survey Instrument Design

The survey instrument was divided into three parts. Part (1) was designed to collect general classification data, e.g. division, organization position, sex, age, education level, and length of employment. Part (2) addressed individual perceived work group productivity. Part (3) addressed the transformational and transactional leadership style characteristic. The survey instrument is presented in Appendix E.

Part (2), productivity statements, was segregated for ease of participant interpretation and data analyses. Part (3) of the survey instrument was staggered in format with each sub-component; charismatic, individualized consideration, contingent reward, and management-by-exception, alternating throughout the body of the instrument.

Survey Instrument Administration

Administration of the survey instrument occurred through a structured distribution system. A designated administrative assistant from each division received the number of questionnaires corresponding to the total number of individuals in that division. Both the pre-test and the final survey were 'blind' in concept and application. The 'blind' survey concept is designed to afford the researcher complete separation from

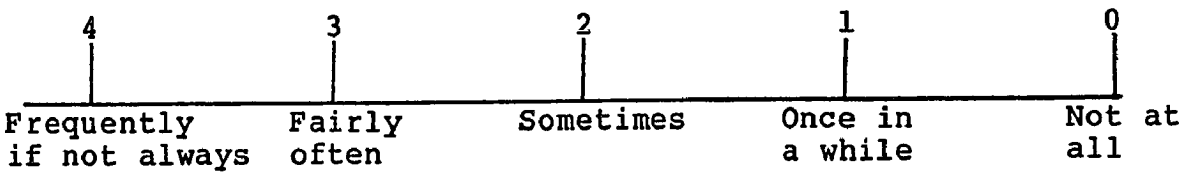
the administration of the survey instrument and therefore eliminate any bias of knowing who received and completed the instrument. It additionally guarantees respondent anonymity.

Survey Scales and Spectrums

As described in the preceding section, the survey instrument consisted of three major sections:

- The specific classification section.
- The perceived group productivity section.
- The transformational and transactional leadership style identification section.

The scale used to collect data was of a graphic rating, Likert, or summated type. It was a five point scale with scoring assigned from 0 to +4:



This type of scale presents advantages and disadvantages. It is the most common form of scale used and is simple in structure (Emory, 1985). Emory points out, it suffers from the fact that out of the five points illustrated, only four will effectively be used. It will be a rare situation when the 0 point or "not at all" is used. Another issue considered in its use is the vagueness of "sometimes" and "fairly often". The meaning of these terms depends upon the respondents frame of reference. In some cases, point of item selection along the

continuum can create data interpretation problems; however, this situation has been remedied through the use of a specific choice statement:

H. _____ Tells me what to do if I want to be rewarded for my efforts.

The selection of the aforementioned scale is based on its use in Bass (1985) for his Leadership Questionnaire which identified the characteristics of the transformational and transactional leader and its understandability by respondents. Question content had been established and validated using the scale; therefore, it was considered appropriate for use in this exploratory research.

The key anchors bear a magnitude-estimation-based ratio to each other of 4:3:2:1:0 according to Bass et al. (1974). Scoring on Bass' Leadership Questionnaire survey instrument therefore, was A=4, B=3, C=2, D=1, E=0. The author designed the test instrument to reflect numerical instead of alpha character. This was done for ease of respondent interpretation and data entry into the statistical database. Scoring for the survey instrument was interpreted as follows:

. "fairly often" implies a frequency three times as much as "once in a while" and is so scored as three points; "once in a while" is scored as one point.

Levels of Measurement

The preceding section discussed the written survey instrument spectrum and scaling method to be employed. This

section reviews the importance of the nature of the data that is subjected to statistical analysis.

The level of measurement of each of the survey responses is fundamental to selection of appropriate statistical techniques to apply to the collected data. Assigning this score to the survey responses is known as 'measurement' (Torgenson, 1958). One definition of measurement is "the assignment of numbers to objects to represent amounts or degrees of a property possessed by all of the objects" (Torgerson, 1958). The data collected on the proposed survey instrument is considered to be of nominal discrete and interval nature.

The nominal level of measurement is the 'lowest' nonparametric level since it makes no assumptions about the assigned data values (Emory, 1985). Each value is considered a category, with the value serving as a label or name. No assumption on ordering or distance between the categories is made (Jorgenson, 1958). Use of this scale is deemed valuable because of the exploratory nature of the study where relationships can be uncovered rather than securing precise measurements. Several tests for statistical significance may be utilized with nominal data, the most common being the non-parametric chi-square statistic (Emory, 1985). All data obtained from the questionnaire during this exploratory research was considered to exhibit nominal characteristics.

The interval level of measurement is considered appropriate because of the equality of intervals on the survey scale (the distance between 1 and 2 equals the distance between 3 and 4) and the implied (0) point of "not at all." Additionally, the

scale is specified as ranging from 'once in a while' to 'frequently, if not always' with equally-sized scaling levels along the response dimension. It is believed that an interval measured response is obtained on the leadership style characteristic identification items and perceived productivity items.

The interval level of measurement additionally allowed the use of arithmetic means as a measure of central tendency and the determination of differences between categories (Emory, 1985). Employment of this scale lent itself to parametric statistical analyses methods such as the Two-Tailed T-test.

Survey Instrument Pre-Test

The survey instrument was pre-tested on a 10% random sample (individuals) of the total survey population. The random sample of 48 was selected by using a table of random numbers. The specific table used was from a Rand Corporation publication, A Million Random Digits With 100,000 Normal Deviates, 1955, p. 225. This page consist of ten columns of 5-digit numbers. To insure objectivity a colleague was asked to select a number between 1 and 10 which in turn was used as the designated random number column.

The random sample of 48 individuals was selected by matching the last two digits of the random number to a five digit employee identification number containing the same sequence of those numbers. An example of this procedure is as follows:

Random Number: 48340 Employee I.D. Number: 57349

To ensure confidentiality during the pre-test phase, a 'blind' survey mechanism was employed. After the selected respondents were identified from their employee identification number, the survey instruments were hand-carried to an administrative assistant located within each division. These assistants then delivered the instrument to each potential respondent with a request to take the 10 to 12 minutes necessary to respond to the statements. Respondents were instructed to return the survey instrument to the administrative assistant within their division in a sealed envelope who, in turn, returned it to the author.

Pre-testing methodology such as this, according to Sudman, 1976, evaluates both the survey instrument and the collection method to be used when a full survey is employed. The results of the survey instrument pre-test were used to revise and refine the final instrument and evaluate collection procedures. Tables One and Two in Appendix F, contain the inter-correlations between leadership style, its components and sub-components, and group productivity as perceived by survey respondents.

Pre-Test Results

Using the modified Kuder-Richardson reliability formula, Allen and Yen, 1979, consistent sub-scale reliabilities for the leadership style sub-components and perceived group productivity proved acceptable.

The transformational leadership sub-components of charisma

and individualized consideration yielded inter-correlation coefficients ranging from 0.83 to 0.35 and 0.67 to 0.23, respectively. The transactional leadership sub-components of contingent reward and management-by-exception yielded inter-correlation coefficients ranging from 0.63 to 0.26 and 0.51 to -0.31 respectively. Test group participants expressed no difficulty in survey statement and coding scale interpretation.

Perceived group productivity survey statements yielded inter-correlation coefficients ranging from 0.48 to -0.15. Because of the design and mix of productivity statements, high inter-correlations coefficients were not expected. In designing the perceived productivity section, question selection was based on group appropriateness and reverse polarity properties (Claire, S. et al., 1976).

Productivity statements in groups A and C were comprised of statements which would elicit optimal responses of 4 on the Likert scale employed. Productivity statements in group B, elicited an optimal response of 0 on the Likert scale employed. Using the reverse polarity theory, the researcher could readily interrupt survey respondent statement comprehension and attitude towards responding to the statements appropriately. Pre-test results supported both the productivity section design and survey statement selection. The results additionally verified the need for recoding of group B responses.

Because of the Likert type scale employed in this dissertation, survey responses for group B productivity statements could be erroneously interrupted if not recoded. As

Freund, (1979), points out recoding survey responses proves to be instrumental in alleviateing erroneous data presentation and interpretation (p.52). In this study, group B survey responses of 0 were interrupted as 4.

Survey questionnaire distribution and collection methodology proved effective and were, in total, adaptable to the full survey.

Full Survey and Statistical Analyses

Using the results from the pre-test, the survey questionnaire form was modified as required. Once it and the collection procedures proved adequate the survey instrument was then administered to the remaining balance of the overall organization population (90% or 427 individuals).

All survey forms were composed of a cover letter and the survey questionnaire. The cover letter contained instructions for completing the form and the procedures for returning the survey upon completion. Each form was stapled together in the upper left-hand corner approximately one-quarter inch from the edge in the horizontal position. The survey form was then folded in thirds and placed in a plain white envelope. Envelopes remained open until such time as the respondent had completed the form.

Approximately one week prior to the administration of the survey, all division heads were briefed as to the purpose of the survey. They were requested to participate and to support the administration of the survey instrument to their respective

divisions. On the date of survey administration, the administrative assistant from each division was given the appropriate number of survey instruments corresponding with the number of individuals within their respective divisions.

Distribution of the survey instrument was through the administrative assistant with the collection procedures being a reverse action of those used to distribute the survey except that the envelopes were to be sealed by the respondent. The collection point was the site manager's office. To prevent survey distribution bias and to obtain an adequate organizational cross-sectional analysis, all individuals within the organization were given the opportunity to respond to the survey.

Once the survey responses were collected the cover letters were removed. The survey instrument was reviewed for completeness, then coded, and entered into a computer data file to establish the survey response database. Several statistical analyses programs were then developed using the statistical graphics software package Statgraphics (1985). These statistical analysis programs included the following:

- Summary statistics: mean, median, and standard deviation.
- Cross-Tabulation analysis (Chi-Square, ETA, Pearson's r)
- Correlation runs across the Sub-categories or Variable Groups from the Survey Instrument
- Spearman Rank Correlation Coefficient
- Partial Correlation Coefficients
- Chi-Square Goodness-of-Fit Statistic
- Two-Tailed T-Test Analysis

Frequency Distribution and Descriptive Statistics

The initial statistical analysis undertaken was to examine the distribution characteristics of the survey variable responses. Distributional characteristics are measured in terms of the number of responses in the categories or the values that the survey variable takes on in the response population. In all cases, nominal or interval variables were employed in the survey. In Statgraphics, frequency distribution tables and accompanying descriptive statistics were obtained by using a sub-program called "Summary Statistics". This program provided frequency distribution tables and constituted a basic reference document from which the researcher could review each of the discrete variables in the survey instrument (Statgraphics, 1985). The fundamental descriptive statistics of minimum, maximum, range, median, mean, variance, and standard deviation, etc., were available from this initial program (Statgraphics, 1985).

Sub-File Frequency Distribution and Descriptive Statistics

The second statistical analysis program written was a general frequencies program to investigate the distributional characteristics and basic data responses for the five sub-files that constituted the overall data file (Statgraphics, 1985). These five sub-files were the survey responses obtained from each separate division. Comparison of the frequency distributions and descriptive statistics obtained for each of the sub-files gave early indications of survey response

differences across the five divisions.

Cross-Tabulation Analyses

The third program written was a cross-tabulation of the responses to the two major components of the survey instrument - leadership style and perceived group productivity. Cross-tabulation provides joint frequency on two or more classification variables (Statgraphics, 1985). Along with the cross-tabulation table results, various tests of statistical significance were available including the Chi-square statistic, Pearson's R, and Eta, etc., to determine whether or not the variables were statistically independent or dependent (Statgraphics, 1985). Perusal of these results assisted in the understanding of subsequent correlation and partial correlation analyses.

Correlation Matrix Runs

The fourth program written was a correlation matrix. The correlation matrix procedure estimates population correlation coefficients and corresponding parameters for a set of numeric vectors. Correlation matrices provided a useful preliminary view of the relationships among variables (Statgraphics, 1985).

Correlation coefficients provide a normalized and scale-free measure of the association between two variables. The coefficient values range between -1 and +1. A positive correlation indicates that the variables vary in the same direction, while a negative correlation indicates that the

variables vary in the opposite direction. Statistically independent variables will have a correlation near zero (Statgraphics, 1985).

Spearman Rank Correlation Coefficient

The fifth program written was the Spearman Rank Correlation Coefficient which was employed to assess the stated null hypotheses.

Following the productivity ratio normalization process, the transformational and transactional leadership style components were correlated to the recoded productivity ratios by the Spearman Rank Correlation Coefficient.

The Spearman Rank Correlation Coeffficient is a nonparametric procedure which uses the ranks of the data rather than the actual data values (Freund, 1979). The correlation statistic is derived thusly; first, each variable is ranked separately. Then, the differences between the ranks of paired observations are calculated to measure the disagreement between the pairs (Freund, 1979). The squared disagreements over all pairs are summed, and a relative measure of disagreement calculated. The coefficient is scaled to fall between -1 (perfect disagreement) and +1 (perfect agreement) (Freund, 1979).

The Spearman Rank Correlation Coefficient procedure is equivalent to ranking each variable separately and calculating the usual correlation coefficient on the ranks.

Partial Correlations

The sixth program written to assess the stated null hypotheses was one of Partial Correlations.

In an effort to control possible effects of other intervening variables, partial correlation coefficients were derived for the transformational and transactional leadership sub-components and the normalized output/input productivity ratios.

A partial correlation coefficient measures the relationship between two variables while controlling for the possible effects of other variables (Freund, 1979). These effects are controlled by removing the linear relationship with the other variables before calculating the correlation coefficients between the two variables of interest (Freund, 1979). Partial correlation is useful for uncovering hidden relationships, identifying intervening variables, and detecting spurious relationships.

Chi-Square Goodness-of-Fit Statistic

The seventh program written to assess the null hypotheses was the Chi-Square Goodness-of-Fit.

To compare the observed normalized output/input productivity ratios to the expected frequencies of the leadership style data elements, the nonparametric Chi-Square Goodness-of-Fit statistic was employed (Freund, 1979).

Chi-Square is defined as the sum of the observed frequencies minus the expected frequencies squared each divided by the expected value (Freund, 1979). It is derived by

computing the cell frequencies which would be expected if no relationship existed between the variables given the existing row and column totals (marginals). The expected cell frequencies are then compared to the actual values found in the table. The greater the discrepancies between the expected and actual frequencies, the larger chi-square becomes. We interpret small values of chi-square to indicate the absence of a relationship, often referred to as "statistical independence". Conversely, a large chi-square implies that a systematic relationship of some sort exists between the variables (Freund, 1979). The use of the Chi-Square Goodness-of-Fit statistic was considered appropriate for this research because of the nominal discrete characteristics exhibited by the data elements of leadership style and output/input normalized productivity ratios.

Two-Tailed T-Test Analyses

The eighth program written to assess the stated null hypotheses was a Two-Tailed T-Test.

Because of the "actual derived" nature of the normalized productivity ratios, null hypothesis testing was performed through the parametric Two-Tailed T-test (Tuccy, 1975).

In many investigations, primary interest is in discovering and evaluating differences between effects, rather than the effects themselves (Tuccy, 1975). The most common of this type analysis is the comparison of two groups, with the group mean as the basis of comparison (Tuccy, 1975).

Since it is often impossible, or at least impractical, to compute a group mean based on all members of the group, a sample should be used (Tuccy, 1975). The true but unknown mean for a group is called the "population mean", it is estimated by the "sample mean" (Tuccy, 1975). The comparison of two group means is thus a problem of comparison of the "sample means" (Tuccy, 1975).

Because it is highly probable that two samples from the same population would be different due to the natural variability in the population, it is clear that a difference in sample means does not necessarily imply that the populations from which they are drawn actually differ on the characteristic being studied (Tuccy, 1975).

The goal of the Two-Tailed T-test, as employed in this dissertation, was to establish whether or not a difference between two sample means is significant. Tuccy, 1975, points out that given two populations with means μ_1 and μ_2, respectively, and common variance σ^2, all unknown, the t-test of significance is used to determine if $\mu_1 = \mu_2$.

This dissertation employed a systematic approach when using the T-test statistic to assess whether a relationship of significance exists between leadership style and the normalized productivity ratio. The following describes the methodology employed:

- A precisely stated null hypothesis was formulated with the alternative hypothesis being implicitly implied.
- A significance level was selected ($\alpha = .05$).

. Through the T-Test statistic, variable populations were sampled; means $\bar{x}_1$ and $\bar{x}_2$, variances s_1^2 and s_2^2 were computed, based on samples of sizes n_1' and n_2^2 respectively. From this analysis, the "pooled variance" was computed as well as the "t" corresponding to the difference in sample means. The probability associated with "t" was computed whereas the probability for the occurrence of a value equal to or larger than "t" was assessed, sign ignored (Tuccy, 1975).

The Two-Tailed T-test was considered appropriate for examination of this dissertation's null hypotheses because actual data elements could be derived and there was no implied assumption that "t" was either positive or negative. Additionally, the implicitly implied alternate hypotheses specified inequality.

Level of Significance

Hinkle, Wiersma, and Jurs (1979) suggest that the level of significance used may be based upon the seriousness of the consequences of making a Type I or a Type II error. "A type I error is made when the researcher rejects a true hypothesis; a type II error is made when the researcher fails to reject a false hypothesis" (p. 115). When the consequences of making such errors are not considered serious, investigators test a relationship with a moderate level of significance (.05). If

the consequences of error were life threatening, as they could be in the case of drug abuse, or if a large amount of money was at risk, then a more conservative (.001 or .01) level of significance would be employed.

Respondents' Characteristics

House (1976) states that subordinates' characteristics are important variables to consider in attempting to understand the relationship between leader behavior and outcomes. Pfeffer and Moore (1980) found organization rank and length of service to be predictor variables in their study of the length of tenure of department heads. Miskel et al., (1973) found levels of experience, levels of education and sex of the individual group members to be correlated with job satisfaction and perceived organizational effectiveness. These factors could directly or indirectly affect the criterion variables. In this exploratory study, five respondent characteristic items were included on the survey questionnaire instrument to provide a description of respondent characteristics. These characteristics were: organization position, sex, age, level of education, and length of employment.

Methodological Assumptions and Limitations

The successful conduct of the aforementioned methodological approach was dependent upon many assumed events occurring. The first of these was that sufficient responses to the survey instrument would be generated and that data collected was usable as test records. The second was that the

null hypotheses could be adequately assessed using the statistical test stipulated (Spearman Rank Correlation Coefficient, Partial Correlations, Chi-Square Goodness-of-Fit, and Two-Tailed T-test Statistic).

In addition to these basic assumptions, there were anticipated limitations to the methodological approach. This study afforded all members of the XYZ Corporation the opportunity to participate in the survey. Because this segment of the corporation was regional in context, the results could not be generalized throughout the remainder of the corporation. There were also tendencies for individuals not to respond to the survey instrument. Demographic, psychographic, and behavioralistic characteristics influenced, to a great extent, response rate.

The educational background of each organizational respondent and his/her familiarity with survey forms were a determining factor on whether or not they responded. This undoubtedly effected the external validity of the survey.

Rating systems, in general, are unsatisfactory predictors of leader success systems due to the confusion over terminology and bias of those doing the rating, as well as the level of the person being rated (Norton et al., 1980). Self-perceived behavior could not be excluded from this consensus and, therefore, was considered a study limitation.

No attempt was made to determine the causation of transformational and/or transactional leadership styles on productivity. Only an attempt to determine if association

exists between the leadership styles and group productivity when measured by the proposed survey instrument and normalized output/input productivity ratios.

Summary

The design used to test for dependent variable independence from the independent variable were the Spearman Rank Correlation Coefficient, Partial Correlation Coefficient, Chi-Square Goodness-of-Fit, and Two-Tailed T-test Statistic. A cross-tabulation analysis was conducted and contingency tables generated for each set of variables from the survey questionnaire. The subjects for the study were organizational members of the XYZ Corporation, working within a diversified aviation services organization. All members were afforded the opportunity to complete the survey questionnaire instrument.

Transformational and transactional leadership styles and perceived group productivity were measured by a survey instrument. Quantitative measurement of productivity was measured through the ratio of output divided by input (items processed divided by man-hours expended).

The information collected was considered nominal discrete and interval in nature, sorted accordingly, and subjected to statistical analyses. Null hypotheses were tested by the Spearman Rank Correlation Coefficient, Partial Correlation, Chi-square Goodness-of-Fit Statistic, and Two-Tailed T-test Statistic.

Results of the study could not be generalized to the total XYZ organization as a whole because those surveyed belong to an

organization unique in its cultural makeup.

CHAPTER IV

ANALYSES OF HYPOTHESES, TEST AND RESULTS

Introduction

The purpose of this exploratory study was to investigate the associative relationship between the styles of transformational and/or transactional leadership and group productivity. These three major variables, along with four leadership style sub-components, were measured via a survey questionnaire instrument. The instrument was administered to approximately 475 members of the XYZ Corporation's Patuxent River, Maryland, aviation maintenance support site. Group productivity was measured through two methods: (1) a survey questionnaire which measured respondents' perception of group productivity and, (2) an objective measurement ratio of output divided by input. Output was measured by the number of maintenance action forms (MAF's) and support action forms (SAF's) completed during a given period of time. Input was measured through the number of manhours required to produce this output. Data was collected for a fiscal year covering the last half of 1986 and the first half of 1987 (April, 1986 - March, 1987).

Data Analyses

In this chapter, the results of the data analysis will be presented in sections. The first section will address the survey response rate. The second section will contain the survey summary statistics with a discussion of central tendencies. The third section will contain correlation runs through all major files and sub-files. The fourth section will consist of a cross-tabulation analyses of major survey components. The fifth section will be a computation of output/input productivity ratios for the fiscal year's data collected. The sixth will be a hypotheses section with sub-sections corresponding to each of the three major hypotheses undergirding the study. The seventh and final section will be a summary of survey respondents' characteristics. All statistical data compiled from the employment of these analysis instruments are contained in Appendix F.

Survey Response Rate

Following the survey instrument pre-test verification of a 10% (48 individuals) random sample, the survey questionnaire was administered to the remainder of the XYZ Corporation (N_{total} = 427).

From this administration of the survey questionnaire, a total of 311 survey forms were returned for a response rate of 73%. Of these 311 survey questionnaires, 12 were discarded because the respondent had provided inaccurate information or had failed to complete the survey form.

Construction of the studies aggregate database consisted

of the 48 pre-test survey questionnaires and the remaining 299 full survey questionnaire forms. From this 347 questionnaire response rate total, 45 were identified as being respondents in a managerial position (GM, EG, LM). These 45 records were excluded from the aggregate database and from all data analyses except for the respondent characteristic identification analyses. The remaining 302 survey questionnaire responses were considered principal data records and were used in testing the null hypotheses.

Survey Statistical Measurements

Survey Summary Statistics with Central Tendencies

The fundamental descriptive statistics of mean, median, and standard deviation were tabulated for the survey instruments major files and sub-files. Tables three through five present these data. Table six presents summary statistical data for the original divisional output/input ratios and their normalized values.

Mean Scores

As the most common measure of central tendency for variables measured at the interval level (Allen and Yen, 1979), the mean ($\bar{x}$) scores for the transformational and transactional leadership sub-components and perceived group productivity were computed.

Because the mean is a relatively stable statistic, Freund,

1979, it was used in this research to assess respondents' response point average for the leadership style sub-components and group productivity components.

The transformational leadership sub-components' mean response points, table three, ranged from 1.88 to 2.62 for the charismatic sub-component and from 1.74 to 2.48 for the individualized consideration sub-component. Summated scale averages were a steady 2.15 and 2.25 for the charismatic and individualized consideration sub-components, respectively.

The transactional leadership components of contingent reward and management-by-exception, table four, exhibited mean response point ranges of 1.08 to 2.27 for the contingent reward sub-component and from 1.60 to 2.62 for the management-by-exception sub-component. These summated scale averages were somewhat less than those of the transformational with a 1.49 and 2.13 for the contingent reward and management-by-exception sub-components, respectively.

Since the summated scale employed contained evenly intervaled integers, the derived fractional responses were interpreted as movement towards the next integer. In this research, the range of respondent responses ranged from scale point 1 (once in a while) to 2 (sometimes). Of the two leadership style components measured, transformational and transactional, the transformational leadership sub-components illustrated more fractional movement toward scale point integer 3 (fairly often).

Perceived group productivity mean point scores, table five, ranged from 2.25 to 3.45 with a scale point average of

integer 3 (fairly often).

Median Scores

Median scores which, as described by Allen and Yen, 1979, reflect the numerical value of the middle case or the case lying exactly on the 50th percentile, were dominated by the transformational leadership sub-components. Scale point averages for this independent variable ranged from 2 (sometimes) to 3 (fairly often), see table three.

Perceived group productivity point scores illustrated a scale point average of 3.3. This showed a strong respondent perception of group productivity accomplishments (see table five).

Standard Deviation Scores

As a final measure of dispersion about the mean of an interval level variable, Allen and Yen, 1979, the standard deviation was calculated for the transformational and transactional leadership sub-components and perceived group productivity component.

The transformational leadership sub-components of charisma and individualized consideration, table three, showed standard deviations ranging from 1.26 to 1.44 and 1.00 to 1.42, respectively, above the mean.

The transactional leadership sub-components of contingent reward and management-by-exception, table four, showed standard deviations ranging from 1.22 to 1.35 and 1.19 to 1.37,

respectively, above the mean.

Perceived group productivity, table five, showed standard deviations of .70 to 1.38 above the mean.

Again the transformational leadership sub-components illustrated a higher variability about the mean than that of the transactional leadership sub-components. Perceived group productivity additionally illustrated a wider variance about the mean. But, of particular interest among each of these variables is the notable disparity between the standard deviation and their related mean scores.

Output/Input Summary Statistics

Summary statistics for the raw output/input organizational productivity ratios, table six, exhibited little relationship to the survey questionnaire responses. However, there was indication from the normalized output/input productivity ratios that divisional productivity disparities existed.

The data presented in table six indicates that the Force Warfare division, with a mean of .49, performed better over the 12 month period evaluated, with the Rotary Wing Aircraft Test Directorate following with a mean of .31. Both the median and standard deviation of the aforementioned divisions support this ranking.

Correlations Between Leadership Style Sub-components and Perceived Group Productivity

To provide a preliminary view of the relationships among leadership styles and perceived group productivity, correlation

matrices were developed. The derived correlation coefficients provided a normalized and scale-free measure of association between the variables analyzed (Freund, 1979). Since the correlation coefficients were calculated from a relatively small sample of data, moderate r's of plus or minus (0.35) at $p<.05$ were considered to be noticeably associated (Allen and Yen, 1979). Tables seven and eight present the correlation matrix runs for the leadership style sub-components and the perceived group productivity component.

Correlation of the transformational leadership style charismatic sub-component and perceived group productivity exhibited a weak to moderate association with only one coefficient at r=0.35 (see table seven). This occurred through the correlation of the charismatic sub-component and the group C productivity component.

The remaining correlations between the charismatic sub-component and perceived group productivity ranged between r= 0.06 to r=0.34 with eight correlation coefficients above r= 0.30.

The individualized consideration sub-component, as did the charismatic sub-component, showed a weak to moderate association and yielded only one correlation coefficient at r= 0.35. This occurred again through the correlation with the group C productivity component. The remaining correlation coefficients between the individualized consideration sub-components and perceived group productivity ranged from r=-0.02 to r=0.31 with four correlation coefficients above r=0.30.

The transactional leadership style sub-component of

contingent reward continued this weak to moderate association trend with two correlation coefficients at the r=0.35, (see table eight). Correlation coefficients of r=0.38 and r=0.39 were recorded against the perceived productivity statements of group A and group C, respectively. The remaining correlation coefficients ranged between r=-0.006 to r=0.34 with a total of four above r=0.30.

The management-by-exception sub-component yielded no significant correlation coefficients at r=0.35. Noted, however, were numerous weak negative correlations against the productivity groups A, B, and C. This sub-component's correlation coefficients ranged from r=-0.27 to r=0.18.

From these correlation analyses one may concluded that the transformational leadership style is more closely related with perceived group productivity than the transactional leadership style. But, the overall strongest correlation coefficients lie with the transactional leadership sub-component contingent reward. Evident also is the weak negative relationship of the management-by-exception sub-component and perceived group productivity. Finally, there is the question of no trend. In neither the transformational or transactional leadership style sub-components is there a trend of correlations to perceived group productivity.

Cross-Tabulation Analyses

Because the data collected on the survey questionnaire instrument contained several classification factors, a cross-

tabulation was employed for each leadership style sub-component and the perceived group productivity component.

The cross-tabulation procedure operates on raw data to obtain frequency counts and generates tables that show frequency and percentage breakdowns (Anastasi, 1982). The cross-tabulation procedure used in this research yielded, in conjunction with the frequency tables, several summary statistics which were used to assess the strength of association between variables (Anastasi, 1982).

The summary statistics selected to assess this research data were the Chi-square statistic, ETA statistic, and Pearson's r. Table nine presents a tabulation of these measures of association.

Chi-Square Statistic

The Chi-Square statistic is a test of statistical significance which assumes that the variables measured are at the nominal level (Anastasi, 1982). It is employed primarily to determine whether a systematic relationship of some sort exists between variables (Anastasi, 1982). Both the transformational and transactional leadership styles were measured against perceived group productivity to explore if such a systematic relationship exists.

The Chi-Square statistics for both the transformational and transactional leadership styles and perceived group productivity yielded relatively moderate scores at a Chi-Square statistic of 26.96 at 16 d.f., $p \leq 0.05$ (see table nine, p. 215).

The transformational leadership sub-component of charisma

yielded the overall highest quantity of χ^2's. Seventeen χ^2's exceeded 40.00 with three exceeding 60.00. Group C accounted for the most significant χ^2's with a total of seven exceeding the significance level of 26.96 (see table nine, p. 215).

The transformational sub-component of individualized consideration additionally demonstrated a large quantity of significant χ^2's. Twelve χ^2's exceeded 40.00 with four exceeding 50.00, (see table nine, p. 215). Groups A and C were comprised of all significant χ^2's.

The transactional leadership style sub-component of contingent reward yielded the highest Chi-Square (78.63). Sixteen χ^2's exceeded 30.00 with seven exceeding 40.00. Group C showed a strong association with the contingent reward sub-component by having all χ^2's of significance (see table nine, p. 216).

The management-by-exception sub-component yielded the least number of significant Chi-Squares with only seven exceeding the significance level of 26.96. The highest (52.23) occurred between the group B component (see table nine, p. 216).

From this Chi-Square analyses one may conclude that the transformational leadership style is perceived by the respondents as dominant and characteristic of those who lead others to the fulfillment of organizational productivity requirements. The charismatic characteristic sub-component is by far perceived as the most dominant among the four sub-components subjected to analysis. However, the strong

contingent reward χ^2 illustrates to this author a possible underlying reliance within the organization's economic reward incentive to meet productivity goals.

ETA Statistic

By itself, the Chi-Square statistic helps only to decide whether variables are independent or related (Winch and Campbell, 1969). It does not tell us how strongly they are related. For this reason, the ETA statistic was employed to measure the association of the means.

ETA is a measure of association used when the independent variable is at the nominal level and the dependent variable is interval or at the ratio level (Barclay, 1968). It is basically an indication of how dissimilar the means on the dependent variable are within the categories of the independent variable (Barclay, 1968). When the means are identical, ETA is zero. If the means are very different and the variances within the categories of the independent variable are small, ETA increases toward its maximum of one. When ETA is squared, it has an intuitive interpretation as the proportion of variance in the dependent variable explained (accounted for) by the independent variable. ETA-Squared is often referred to as the 'correlation' ratio.

The ETA statistics for this research were calculated with the leadership style serving as the independent variable and the perceived group productivity serving as the dependent variable.

Mean variation among the leadership style sub-components

and perceived group productivity appeared, through the ETA statistic, minimal (see table nine, p. 217). The transformational leadership style sub-components yielded little mean variation while the transactional sub-components yielded six notable mean variations. One occurred between the contingent reward sub-component and the group B component and five occurred between the management-by-exception sub-component and group C component.

None of the mean scores approached the variation maximum of 1. Of mention here is the consistently higher mean scores of the transformational sub-components and the transactional sub-component of contingent reward against the group C component.

From this statistical analyses methodology no conclusive evidence was found to either support or reject the influences of the leadership styles on perceived group productivity.

Pearson's R

As a final measurement of association used on the responses to the survey questionnaire, the Pearson Coefficient of Correlation was employed. Pearson's r is used to assess the goodness-of-fit of the linear regression to the data variables and the data strength of that linear relationship (Anastasi, 1982).

The Pearson r measures the strength of relationship between two interval variables (Anastasi, 1982). As used within this research, where the data is considered nominal discrete and interval in nature, it was employed to assess linear

relationship correlations between the leadership styles and perceived group productivity. Because of the sample nature, Pearson r's at plus or minus 0.35 were considered noticeably associated.

The transformational leadership sub-components yielded several significant r's (0.36, 0.35, 0.35, 0.40) with the majority of those correlating with the group C component (see table nine, p. 219). Thus, illustrating a group effort to meet productivity goals. The transactional sub-component of contingent reward recorded two significant r's of 0.38 and 0.35 with the groups A and C, respectively. The transactional leadership sub-component of management-by-exception exhibited no significant Pearson r's but, did contain many negative relationships with the group B component illustrating the reluctance of group members to openly initiate productivity improvements.

Of mention from this analyses is the large quantity of correlation coefficients approaching the significance level and the trend of those. The transformational leadership sub-components exhibited a relatively moderate and consistant relationship with group productivity. While the transactional leadership sub-components showed a weaker and inconsistant relationship with the perceived group productivity component. Therefore, one might conclude that there is a respondent's perception of a relationship between the leadership style and perceived group productivity. From the data presented thus far, this relationship exhibits more transformational leadership style characteristics than those of transactional.

Hypotheses Testing

Leadership Style and Group Productivity As Measured by Normalized Output/Input Ratios

The first null hypothesis proposed in this exploratory study was as follows: There is no difference in efficiency, as measured by output/input ratio, as a result of one management style - transformational and/or transactional.

The second null hypothesis proposed in this exploratory study was as follows: There is no difference between the influencing effects of the charismatic and individualized consideration sub-components, as measured by output/input ratio, given the transformational style of leadership is associated with group productivity.

The third null hypothesis proposed in this exploratory study was as follows: There is no difference between the influencing effects of the contingent reward and management-by-exception sub-components, as measured by output/input ratio, given the transactional style of leadership is associated with group productivity.

Tables ten through twelve present the data from the statistical methods employed to test these null hypotheses.

Spearmans Rank Correlation Coefficient

Of the 27 Spearman Rank Correlation Coefficients calculated (table ten) between the leadership style sub-components and the normalized output/input ratios, none showed statistical association at rho = plus or minus 0.35 at $p<.05$. A

total of four coefficients showed weak rho's above the 0.10. The highest (0.12) was between the contingent reward sub-component and the normalized output/input productivity ratio.

The transformational leadership style sub-components showed relatively no relationship with the normalized output/input productivity ratios using this statistical measurement. The charisma sub-component had one weak rho of 0.10 while the individualized consideration showed an absence of relationship with two negative rho's of -0.03 and -0.07 when correlated with the normalized output/input productivity ratio.

The transactional leadership style sub-components also showed relatively no relationship with the normalized output/input productivity ratios using this statistical measurement. The contingent reward sub-component did show both the high positive and low negative coefficients with the rho's of 0.12 and -0.18. The management-by-exception sub-component showed two weak rho's of association above the 0.10 level (0.10 and 0.11).

One may conclude from this analyses that the rank ordering of the data yielded no significant correlations between the respondents' perception of leadership style and the actual productivity levels within their respective divisions.

Partial Correlations

Partial Correlation Coefficients (table eleven) of the leadership style sub-components and the normalized output/input productivity ratio showed minimal significance at r = plus or minus 0.35 at $p \leq .05$. The results from this analyses supported

the findings from the Spearman Rank Correlation Coefficient analysis in that the respondents' perception of leadership style is minimally associated with the actual divisional productivity rates.

The transformational leadership style sub-component charisma showed weak r's of 0.21 as its highest and -0.17 as its lowest correlations. The individualized consideration sub-component additionally showed a weak association with no high r's but did show one relatively low r of -0.14.

The transactional leadership style sub-components illustrated even less relationship than the transformational sub-components using this statistical method. The contingent reward sub-component yielded only one weak negative correlation of mention (-0.11) with the management-by-exception sub-component remaining neutral.

From this analyses, one may conclude that the isolation of other intervening variables during the correlation process did not serve to uncover underlying relationships. The perceptive association of leadership style to group productivity, as measured on the survey questionnaire was moderately strong; however, when these perceived data are compared to the actual output/input productivity data elements, relationships tend to be spurious and erratic.

The results of these two correlation analyses methodologies indicates that the influencing effects of the transformational and/or transactional leader on organizational productivity efficiency are indeed latent and differ from those

perceived by organizational members. However, as Freund, 1979 stresses, there are several pitfalls in the interpretation of the coefficients of correlation. The first being that the basic r measures only the strength of a relationship; second, a strong or weak correlation does not necessarily imply a cause-effect relationship (p.396).

In an effort to clarify the underlying perceived leadership/productivity relationship demonstrated by the survey questionnaire instrument and to assess the actual output/input ratio association, the author employed two more exacting hypotheses testing statistics.

Chi-Square Goodness-of-Fit Statistic

Employment of the Chi-Square Goodness-of-Fit Statistic (table twelve) indicated that there was an underlying relationship and moderate statistical dependence between the leadership style sub-components and the normalized output/input productivity ratios.

The transformational leadership style sub-components showed three statistically significant Chi-Squares at χ^2.05, 26.296, d.f.16.

The charismatic sub-component had one χ^2 of 27.25 with another approaching the significance level at 23.26. The individualized consideration sub-component showed a strong χ^2 of 35.36 and another near the significance level at 26.00.

The transactional leadership style sub-components demonstrated no Chi-Squares of statistical significance. However, the contingent reward sub-component did show several

approaching the significance level of 20.60, 22.87, 23.09.

From this statistical analyses, one may conclude that an association between leadership style, as perceived by the respondents, and the normalized output/input productivity ratio is existent, but latent. However, there is still the question of which leadership style exhibits the most influence on the productivity ratio. The survey questionnaire instrument pointed to the transformational leadership style as being slightly influential on group productivity. But, the results thus far using the normalized output/input productivity ratios have been inconclusive.

Two-Tailed T-Test Analysis

The use of a Two-Tailed T-Test analysis (table thirteen) provided the needed information to further address the question of an associative relationship. With the deviation of variances between the two samples (leadership style sub-components and normalized output/input ratio) minimal, 19 of the 27 T-Test statistics derived called for the rejection of two of the three null hypotheses, as stated, at $p \leq .05$, critical value of plus or minus (1.96).

The transformational leadership style sub-components of charisma and individualized consideration had T-Test statistical values ranging from -2.72 to 12.20 with individualized consideration having 8 of the 11 total significant values.

The transactional leadership style sub-components of

contingent reward and management-by-exception had T-Test statistical values ranging from -7.00 to 7.37 with 7 of the 11 total significant values occurring between the contingent reward sub-component and the normalized output/input productivity ratio.

From this analysis, one may conclude a slight association between leadership style and group productivity is present. Statistically, the transformational leadership style appears to be more of an influencing factor on group productivity than the transactional leadership style. But, only to a weak extent.

Null Hypotheses Testing Results

Emory, 1985 states, "In classical testing of significance and association, two kinds of hypotheses are used. The 'null hypothesis' is used for testing. It is a statement that no difference exists between the parameter and the statistic being compared to it. A second, or 'alternative hypothesis', holds that there has been a change" (p.352).

In this exploratory research, three null hypotheses were presented. Each of these addressed the no association relationship between the independent variables of transformational and/or transactional leadership styles, their sub-components, and the dependent variable, group productivity.

It is argued that a null hypothesis can never be proved and, therefore, cannot be 'accepted'. Therefore, the decision criteria should be either to 'reject' or 'fail to reject' them as stated (Emory, 1985, p.352). Figure 18 illustrates the statistical analyses methods employed in testing this

exploratory study's null hypotheses. Indicated are the author's decision interpretations of whether to 'reject' or 'fail to reject' them as stated. If the null hypotheses is rejected, the alternate hypothesis is deemed acceptable for this research.

Figure 4. Null Hypotheses Decisions

Statistic Employed	Null Hypotheses		
	One	Two	Three
Spearman Rank Correlation Coefficient	fail to reject	fail to reject	fail to reject
Partial Correlation	fail to reject	fail to reject	fail to reject
Chi-Square Goodness-of-Fit	reject	reject	fail to reject
Two-Tailed T-Test	reject	reject	reject

The first null hypothesis is rejected. This decision is based principally upon the statistical data from the parametric Two-Tailed T-Test analysis with support from the non-parametric Chi-Square Goodness-of-Fit statistic.

The decision to reject the first null hypothesis and accept its alternate, that there is an association between the leadership styles and group productivity, takes into

consideration the predominantly weak and/or nonexistant association derived from the Spearman Rank and Partial Correlation test. However, the presence of statistically significant χ^2's and the statistical significance of 19 of the 27 T-Test statistics demonstrates a moderate dependent association exists between the leadership styles under analysis and group productivity.

The second null hypothesis is also rejected. This decision is based principally upon the statistical data from the parametric Two-Tailed T-Test analysis with support from the non-parametric Chi-Square Goodness-of-Fit statistic.

The decision to reject the second null hypothesis and accept its alternate, that being that since the transformational leadership style is moderately predominant, its sub-component, individualized consideration, appears to be more closely associated with organizational productivity. This decision takes into consideration the weak, but existent correlations. Neither the Spearman Rank or Partial Correlation statistics yielded significant association measures between the leadership style, their sub-components, and group productivity. They did, however, indicate an underlying weak association between the variables which, as the strength of statistical measures was increased, were brought out.

The Chi-Square statistic illustrated both the moderate strength of the transformational leadership style and its sub-component, individualized consideration. The three statistically significant χ^2 's, with the strongest derived between the individualized consideration, support the

conclusion that this sub-component has a more moderate influence over group productivity than does the charismatic sub-component.

This moderate association, of the individualized consideration sub-component and group prodcutivity, is further supported through the results of the Two-Tailed T-Test analysis.

With 5 of the 8 transformational leadership styles statistically significant T-Test values occurring between the individualized consideration sub-component and the productivity ratio, a moderate but important association clearly exists.

The third null hypothesis is not rejected. This decision is based principally upon the findings from the correlation tests, the nonparametric Chi-Square test, and the parametric Two-Tailed T-Test analysis.

The decision not to reject the third null hypothesis, that is that the transactional form of leadership style is not associated with group productivity, and accept its alternate, is supported by each hypotheses test employed with the exception of the slight association exhibited through the Two-Tailed T-Test analysis.

Indications from the Spearman Rank and Partial Correlation Coefficients indicated a very weak association between the transactional leadership style and group productivity. While the Chi-Square Goodness-of-Fit statistic indicated no statistically significant association between this independent variable and the dependent variable, group productivity. There

was, however, an indication through the Two-Tailed T-Test analysis that a slight association, weak to moderate, did exist between these variables. This led the author to view the association issue as inconclusive.

With 7 of the 11 transactional leadership style statistically significant T-Test values occurring between the contingent reward sub-component and group productivity, one cannot ignore the possibility of a latent association. The author suggests that this particular sub-component is perhaps indigenous to the organization under study and could indicate the use of economic reward incentives to achieve productivity goals.

Respondent Characteristics

The personal characteristics of the XYZ Corporation members who responded to the survey questionnaire are presented in Table fourteen.

The majority of the organizational respondents (107 or 31%) were members of the Station Aircraft Test Directorate (SATD). The majority of the respondents, by organizational position, (148 or 43%) were journeyman specialist (JS). Male respondents made up 314 or 92% of those surveyed while females (26 or .08%) madeup the remainder. The majority of those surveyed (194 or 56%) were between the ages of 21 and 30 with 205 or 60% of the organizational members possessing at least a high school diploma. The majority of those surveyed (115 or 34%) had worked for the organization from 4 to 6 years with the second largest number (72 or 21%) working for the organization

from 2 to 4 years.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Hypothesized Relationships

This exploratory study was designed to investigate the associative relationship between three primary variables: the independent variables of transformational and transactional leadership styles and the dependent variable - group productivity. The investigation of these variables occurred within the XYZ Corporation's Patuxent River, Maryland, aviation maintenance support site. Five divisions within the support organization were surveyed.

Each of the primary variables were measured through a survey questionnaire instrument. This instrument was structured so as to separate the independent variables of transformational and transactional leadership styles into four leadership characteristic sub-components: charismatic and individualized consideration for the transformational leadership style and contingent reward and management-by-exception for the transactional leadership style variable.

The dependent variable, group productivity, was measured through six, grouped by two, statements. The three groups

measured: (1) group innovativeness, (2) group communications, and (3) group goal achievement.

As a measure of organizational productivity effectiveness and efficiency, a quantitative measurement of productivity was derived from an output/input formula. Data was obtained on the number of Maintenance Action Forms (MAFs) and Support Action Forms (SAFs) processed through each division for a fiscal year (six months into one year, six months into another year). Monthly totals of MAFs and SAFs were divided by the number of man-hours required to complete them. The ratio derived from these served as productivity measurements for each division within the organization under analysis. Because organizational members' productivity measurements were not able to be assessed, these division ratios were normalized and assigned to survey respondents by division. These served as individualized productivity measurements and were used in conjunction with the perceived leadership style responses from the survey questionnaire and the normalized productivity ratios to test the null hypotheses.

The sample for this exploratory study was comprised of the organizational members of the XYZ Corporations' Patuxent River, Maryland, aviation maintenance support site. Survey questionnaires were distributed to all organizational members within the five divisions indigenous to the support site (N_{total} =475). Excluded from the aggregate database were the organizational members currently holding a managerial position (N_{total}=45).

Organizational members' survey questionnaire mean scores

for the transformational leadership style suggest that divisional members perceive this type leadership to be predominant within the organization, and the individualized consideration sub-component to be characteristic of the leaders themselves. In contrast, mean scores for the transactional leadership style suggest divisional members perceive this style as being utilized less. Of the two transactional sub-components measured, organizational members perceived the contingent reward to be the dominant characteristic of their leaders.

The survey questionnaires group productivity mean scores suggest organizational members perceive their divisions as being communicative, supportive of individual initatives, and consistant in goal achievement. However, as shall be discussed later, results from the analyses of perceived leadership styles and the quantitative measurement of organizational group productivity differed from these results.

Perceived productivity was influenced more by the transformational leadership style than the transactional leadership style. The transformational leadership style sub-component, individualized consideration, was perceived as being a determining factor in maximizing group productivity. But, in contrast to the survey questionnaire results, the transactional leadership style actually exhibited a stronger than perceived influence over actual productivity. Here, the contingent reward sub-component was noted to have the stronger effect over the achievement of organizational productivity than did the management-by-exception sub-component.

The hypotheses proposed to test the association among the variables in this exploratory study were as follows:

Ho: There is no difference in efficiency, as measured by output/input ratio, as a result of one management style - transformational and/or transactional.

Ho: There is no difference between the influencing effects of the charismatic and individualized consideration sub-components, as measured by output/input ratio, given the transformational style of leadership is associated with group productivity.

Ho: There is no difference between the influencing effects of the contingent reward and management-by-exception sub-components, given the transactional style of leadership is associated with group productivity.

In this exploratory study, leadership style (transformational and transactional) was found to be moderately associated with the organizations' group productivity. The use of four statistical measurement methods were employed to examine the associative relationships and test each null hypothesis: the Spearman Rank Correlation Coefficient, the Partial Correlation Coefficient, the Chi-Square Goodness-of-Fit, and the Two-Tailed T-Test Analysis.

The two correlation measurement methods, Spearman Rank and Partial Correlation, indicated a very weak association between the perceived leadership styles and group productivity (as measured by output/input ratio). The more stringent statistical methods, Chi-Square Goodness-of-Fit and Two-Tailed T-Test analysis, illustrated moderate associations between the leadership styles and the quantitative group productivity measurement.

Though the statistical measurement test differed in establishing an association between the leadership styles under

study and group productivity, the first null hypothesis was rejected. The association, though moderate and in some cases latent, was considered to be statistically significant.

The second null hypothesis, inferring that the influences of the transformational leadership style sub-components of charisma and individualized consideration did not differ, was also rejected. Both correlation measurement instruments, Spearman Rank and Partial Correlation, again illustrated very weak associations with the organizations at $p \leq .05$. Here again, the more stringent statistical measurement methods, Chi-Square Goodness-of-Fit and Two-Tailed T-Test analysis, brought out the moderate but statistically significant association.

The Chi-Square Goodness-of-Fit statistic established that the transformational leadership style sub-components, charisma and individualized consideration, were moderately associated with the organizations' group productivity (as measured by output/input ratio). Chi-Squares of 27.45 for the charismatic sub-component, and 35.36 for the indivdualized consideration were of statistical significance. The strength and significance of the individualized consideration sub-component, $\chi^2 = 35.36$, illustrates its use by organizational leaders in meeting group productivity goals.

The Two-Tailed T-Test analysis supported this conclusion through the significant T-Test statistics of -2.72, 3.88, 12.20, 5.35, and 2.62, at $p \leq .05$, for the individualized consideration sub-component.

The third hypothesis, inferring that the influences of the transactional leadership style sub-components of contingent

reward and management-by-exception did not differ given the transactional leadership style was found associated with group productivity, was not rejected.

Again, the correlation measurement methods, Spearman Rank and Partial Correlation, failed to establish a significant association. Of the two more stringent measurement methods, Chi-Square Goodness-of-Fit and the Two-Tailed T-Test analysis, only the Two-Tailed T-Test illustrated a moderate, statistically significant, association. Thus, the author viewed the association between this independent variable and group productivity as inconclusive.

The transactional leadership style sub-components of contingent reward and management-by-exception demonstrated eleven statistically significant T-Test statistics, (-7.00, 3.15, -6.17, -2.80, -10.26, -9.20, -6.07, 3.28, 5.44, 7.37, -4.36), at $p \leq .05$.

From this analysis, the contingent reward sub-component with seven of the significant T-Test values shows more of a moderate association to group productivity than does the management-by-exception sub-component. This would indicate a probable use of economic incentives to influence group members towards productivity maximization.

Major Finding Conclusions

The results of this exploratory study can be generalized and summarized through six major findings. These are listed and explained below:

There is a Difference in Group Efficiency, as Measured by Respondents' Perception and Output/Input Ratio, as a Result of Management Style(s)

The purpose of this study was to assess the association between the leadership styles of transformational and/or transactional and group productivity. This study was consistant with recent research efforts which also suggest an association between the variables (Burns, 1978; Bass, 1985; Bennis and Nanus, 1985; Tichy and Devanna, 1986; Tichy and Ulrich, 1985; Goddard, 1986; and Horton, 1985).

The perception of a particular leadership style influencing group productivity is evident from the survey questionnaire. The transformational leadership style sub-components of charisma and individualized consideration indicated moderate association with eleven correlations of r=0.30 through r=0.41 the two highest between the charismatic (r=0.36) and individualized consideration (r=0.41). Both these transformational leadership style sub-components were moderately correlated with the perceived group productivity statement, "We meet our productivity requirements."

The transactional leadership style sub-components of contingent reward and management-by-exception, illustrated a weaker association than did the transformational sub-components. Four correlations above r=0.35 were deemed statistically significant with the contingent reward sub-component (r=0.39) moderately associating with the perceived group productivity statement, "We meet our productivity requirements."

Noticeable, too, from the survey questionnaire responses,

were the strong perceived associations of both the charismatic and individualized consideration sub-components to perceived group productivity through the Chi-Square Goodness-of-Fit statistic. Again, as was evident in the correlation analysis, the organizations' group leaders are perceived as assisting the group members towards the accomplishment of organizational productivity goals.

The transactional leadership style sub-components of contingent reward and management-by-exception also illustrated a similar association, but not to the same extent as did the transformational sub-components.

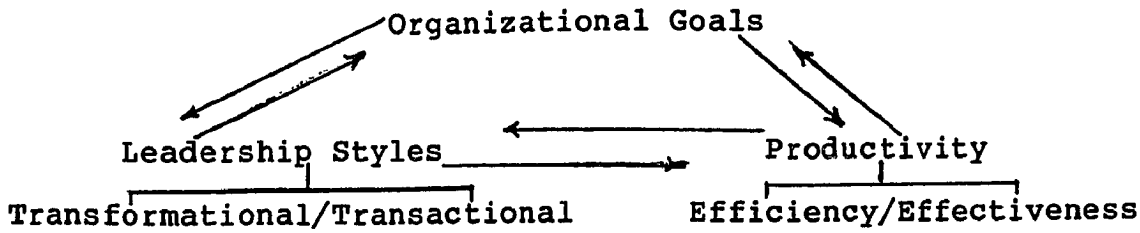
These perceived associations between leadership style and perceived organizational group productivity were moderately confirmed through the quantitative output/input measurement employed. Data from the Chi-Square Goodness-of-Fit and Two-Tailed T-Test statistic confirm that a moderate association exists between the independent variables of transformational and transactional leadership styles and the dependent variable, group productivity.

The Major Variables of the Study are Interactive

In assessing the associative relationships among the variables of this exploratory study, an interactivity was noted whereas each variable, whether independent or dependent acted reciprocally upon each other to influence the organizations goals, leader effectiveness, and productivity achievement. Figure 19, illustrates the authors perception of this

reciprocal influence relationship:

Figure 5. Leadership Styles, Productivity Efficiency/Effectiveness and Organizational Goals: An Interactive /Model



The interactivity process depicted in figure 5, is in haramony with other research efforts which also suggest an interaction between similar variables (Kerr, et al., 1974; Coughlan and Cooke, 1974; Miskel, 1977; Ellett and Walberg, in Walbery, 1982), and Yukl's Integrating Framework for Research on Leader Effectiveness (1981).

One indication that the variables are interactive is the absence, in the current literature, of a single typology or classification system for describing these specific leadership styles. The more complex leader style typologies specify only limited leader characteristics and productivity goal achievement (Yukl, 1981).

In this exploratory study, the sub-scales selected for inclusion into the survey instrument, which were used to measure the leader's characteristics, are conceptually similar. Similarity also exists between the survey instruments selected for this study and other instruments. The charismatic and

individualized consideration sub-scales are, for example, conceptually similar to the more narrowly defined Leader Behavior Description Questionnaire (LBDQ) consideration/involvement sub-scale (Kerr et al., 1974; Yukl, 1981; Bass, 1981). The contingent reward and management-by-exception sub-scales are similar to the LBDQ's initiating structure/task-orientation sub-scales (Kerr et al., 1974; Yukl, 1981; Bass, 1981).

The results of this exploratory study provide further evidence of variable interaction. The correlation measures employed illustrated very weak associations and characteristically did not indicate any directionality. The moderate strength of association and the results of the Chi-Square Goodness-of-Fit and Two-Tailed T-Test analysis indicates a moderate directional association strong enough to provide the needed interaction association with organizational goal achievement and productivity accomplishments.

A Two-Factor Theory of Leader Behavior is Applicable to the XYZ Corporation's Patuxent River Aviation Maintenance Support Site

Halpin, 1957, presented a two-factor theory of leader behavior; a person-orientation and a task-orientation which he concluded were associated with leader effectiveness. In much of the research (Bass, 1981; Yukl, 1981), researchers report that the most effective leaders are perceived by subordinates and superordinates to be concerned with both individuals and organizational productivity. Additionally, there is evidence

that productivity and worker satisfaction are related to a leader's task-orientation (Stogdill, 1974; Kerr et al., 1974; Bass, 1981; Yukl, 1981) and to reductions in turnover and absenteeism (Fleishman and Harris, 1962 in Yukl, 1981).

In this exploratory study, the leader behavior was interpreted to be synonymous with leadership style. Leaders were perceived and were found to be quantitatively associated with the group productivity efficiency and effectiveness. When leaders were found to exhibit the transformational style of leadership, perceived optimism towards the group achieving higher levels of productivity were noted. The transactional leadership style, especially the contingent reward, appears to exhibit some association with the communicative group sub-scales.

In this exploratory study, when leaders exhibited either transformational and/or transactional leadership style characteristics, explicit and predictable responses occurred in the organization. These findings suggest that changes in leadership style might improve productivity efficiency and effectiveness.

The Organizations Perceived and Actual Group Productivity Differ

Organizational group members perceived their work groups to be 'frequently if not always effective' and 'sometimes' effective in the accomplishment of organizational goals. The consistant correlations between each major leadership style sub-component; charismatic, individualized consideration,

contingent reward, and management-by-exception, with group productivity sub-scales, "Our group does what it is supposed to do and does it well," and, "We meet our productivity requirements" illustrates a goal accomplishment attitude of moderate strength. But, when one compares the perceived production data with actual productivity data normalized through the output/input ratio by division, it becomes clear that the organizations' group production is actually less. Such disparities are not uncommon as pointed out by Stogdill, 1956, when organizations are highly influenced by either individuals or environmental characteristics or both. Actual productivity measurements illustrate that the organizations' divisions (groups) 'sometimes' meet productivity goals.

Organizational group members perceive their productivity levels to be moderately high. Actual productivity ratios, when measured by normalized output/input ratios, indicates productivity levels to be less.

Communications and Group Productivity. Organizational group members perceived communications are moderately influenced by three of the four leadership style sub-components. The transformational leadership style sub-components, charismatic and individualized consideration, appear to have more influence on open communications than does the transactional leadership style sub-components, contingent reward and management-by-exception. Of the two transformational leadership style sub-components, individualized consideration has more positive influence on open communications. Both

communicative group productivity sub-scales illustrate moderately high associations with this transformational leadership style. Both the charismatic and contingent reward leader characteristics influenced the openness of group communications with moderately high associations between group productivity sub-scales, "When problems occur, people in my work group talk openly in an honest effort to resolve them." Lack of association between the transactional sub-component, management-by-exception, indicates the organizational members disregard for this leader characteristic.

The perceived group productivity sub-scales indicate that organizational members perceive the transformational leadership style sub-component, individualized consideration, to have more positive influence on open communication. It should be noted that both the charismatic and contingent reward sub-components have some moderate positive influence on group communications with the management-by-exception having virtually none.

Innovation and Group Productivity Levels. Organizational members are more likely to exhibit innovative measures to improve productivity, when a perceived transformational leadership style is employed. Of the two transformational style sub-components, the charismatic characteristic illustrates the most perceived influence over group innovativeness. The individualized consideration sub-component closely follows with a close association with both group B sub-scales. Both transactional leadership style sub-components illustrate minor

associations with group innovativeness. The contingent reward sub-component illustrates somewhat more association than does the management-by-exception with neither contribution significant.

When leaders within the organization are perceived to exhibit a transformational leadership style with either charismatic and/or individualized consideration characteristics, perceived group innovativeness appears to be moderately increased. Additionally, organizational members appear less influenced by fear of criticism when these types of leadership characteristics are perceived present in group leaders.

Goal Accomplishment and Group Productivity Levels. Organizational members by far, perceive their groups goal accomplishment to be moderately higher when the transformational style of leadership in employed. Correlations between the charismatic and individualized consideration sub-components ranged from r=0.36 for the charismatic sub-component to r=0.35 for the individualized consideration sub-component. The transactional leadership style sub-components, contingent reward and management-by-exception, illustrated one relatively moderate association with the contingent reward correlation of r=0.39. The management-by-exception sub-component appears again to have little association with perceived group productivity and specifically perceived group goal accomplishment.

Perceived group goal accomplishment is perceptually enhanced when the transformational leadership style is

employed. The moderate associations exhibited by the charismatic and individualized consideration sub-components illustrate an almost equal influence on group goal achievement.

Organizational Environment Positively Influences the Leadership Style Perceived and Actually Employed in the Accomplishment of Group Productivity Objectives

The leaders' perceptions of efficiency/effectiveness and of subordinate expectations are based on feedback from the work environment (Moos, 1976). Howell and Dipboye (1982) included this feedback from the work environment in their leaderless theory of leader behavior. They suggest that the effectiveness of the leader's group influences not only the leader's behavior but also the subordinates' assignment of leadership styles to the leader. Katz and Kahn, 1978, discuss an environmental role set concept where peer, subordinate, and superordinate expectations for the leader influences leader behavior.

Holland, 1977 maintains that individuals of a particular personality type are the most successful in an occupation with the same model personality types. He recommends a person-environment congruence as a requisite for individual and group satisfaction and success.

The emergence of a positive transformational leadership style relationship in this exploratory study illustrates the organizational members' perception of leader characterisitics and their influence on a positive work environment. The moderate associations between the charismatic and individualized consideration sub-components establish the

person-environment link professed by Holland, 1977.

Social climate research has often focused on the interaction between the individual and the work environment. There is evidence through this exploratory research that organizational environment has a positive influence on leadership styles and on group members' perceived productivity levels. The illustrated use by leaders of a transformational style of leadership, both perceived and actual, illustrates an open and harmonistic association with group members and the organization environment.

Organizational Member Characteristics Influence the Leadership Style Perceived and Actually Employed in the Accomplishment of Group Objectives

The moderately strong association between the transformational leadership style and group productivity can be partially attributed to the age, organization position, education level, and length of employment of the organization members who responded to the survey questionnaire.

Organizational members are relatively young, between the ages of 21 and 30 (194 or 56%). With this youth comes the expectations of challenge and creativeness. Each of these 'individuals' and the author uses 'individuals' to emphasize the method by which each organizational member should be handled, requires an `individual' challenge.

The majority of those surveyed (148 or 43%) occupy an organizational position poised for growth - the Journeyman Specialist. The transforming style of leadership is well suited to provide the environment and opportunity for this growth.

The education level (205 or 60% possess a high school diploma) illustrates a work force ready to meet the future. The level of those having some college (115 or 34%) would indicate to the manager that leader style and work environment must remain atuned to change and provide them with increasing opportunities.

The average length of service (115 or 34%) has been 4 to 6 years for the majority of employees. This means that individuals have growing families and responsibilities to contend with. The organization environment should provide members the necessary tools to advance in positions of responsibility. The leadership style employed on these members should be ones that nurture future employees.

As to the organization's divisions and sex, the author makes no generalizations about either. As mentioned early in this study, no comparisons of divisions can be made because of diverse work peculiarities. As to the sex, it it evident, male dominance (314 or 92%) would have an impact on the type leadership style employed and the type leader characteristics exhibited by group managers.

Respondent characteristics are concluded by the author to have an effect on the perceived and actual leadership style and leader characteristics espoused within the organization. The relatively young and educated work force would tend to support the need for a more transformational leadership style. The organization position and length of employment would also tend to indicate the challenging nature and individual attention

that is normally exhibited by a transforming leader.

Recommendations for Further Research

The purpose of this exploratory study was to explore the associations between three variables in a diverse aviation maintenance support organization. These variables were: leadership styles - transformational and/or transactional, and group productivity. Based on the results from this exploratory research, the following recommendations for further research are proposed.

The interactivity model proposed for this exploratory study, postulates reciprocal relationships among the variables; however, further research is needed to address the question of directionality. Although interactivity appears to exist, the relationships are not equally strong, with the variables of a transformational leadership style and perceived and actual productivity bearing a modest relationship. Research is needed to investigate these differences.

Innovation, as measured through the group productivity sub-scale, seems to be present, but at an actual low level within the organization. Perceived innovation is associated positively with the transformational leadership style. Further research is needed to determine how innovation can be improved and to investigate the specific relationships between it and the characteristics of a transformational leadership style. The relationship in this exploratory study suggest that the individualized consideration sub-component contributes to innovativeness and the personal growth of employees within the

work environment. In times of fiscal cutbacks, such as may be the nature of this organization's environment, there may be a tendency for leaders to increase restrictions on this personal innovativeness. Longitudinal studies are needed to indicate what changes in the work environment variables, especially control, occur over time and how these changes are related to changes in leadership style and leader characteristic. Interventions may then be planned to increase innovation, and studies then designed to investigate the amount and direction of this change in innovation and the relationship of these changes to changes in leadership style.

This exploratory study was based partially on respondents' perceptions of leadership style and group productivity. A logical and likely fruitful extention would be the measurement of the same variables based on the perceptions of the managers. Organizational leaders, for example, could complete the survey questionnaire describing their own behavior. Results could then be compared and any discrepancies could be discussed.

Further research studies could be designed which use a different definition of organizational productivity. Perceived and actual productivity, in this exploratory study, was moderately associated with the transformational leadership style sub-components. Specific research is needed to investigate the levels of this association in comparison to other organizations within the context of a similar environment.

The lack of external validity, discussed as a limitation

in this exploratory research, necessitates further research. Inquiry should also focus on differences within and between divisions for each variable and sub-component/sub-scale so that, subtle but significant variations can be identified. A large-scale study, using the entire organization as the unit of analysis, is also needed to add to the knowledge base of leadership styles and group productivity in an organizational setting. The leadership style and group productivity survey questionnaire employed in this exploratory study appears to be applicable for this research. However, it is noted that other instruments exist which have been designed to measure similar constructs in these different settings. Research is needed to determine the differences and similarities across instruments.

Leadership behavior/style theories are complex. To date, many different intervening variables have been included in an effort explain these theories. Further research is needed to identify important intervening variables in the XYZ Corporation's organizational environment and the relationship among those variables which are found to be related to organizational outcomes and leader behavior/style. The interactive model proposed, appears to be a viable model for research, but different instruments or a model with additional components could serve as a basis for further research.

The number of male respondents in this exploratory study (92%) suggests a male-dominated work environment. One focus of further research would be an analysis of the difference in perceptions of male and female organizational members.

The moderate sizes of the standard deviations and Two-

Tailed T-Test statistics in this exploratory research indicates variances within divisions and among respondents. Research is needed to investigate the sources of these variances. Large standard deviations and T-Test statistics suggest that a variable not examined in the exploratory study exists in the organization's environment.

Theoretical understanding of the transformational and transactional leadership styles and their association to group productivity can be improved through continued research. A systematic, sequenced inquiry is needed to expand the knowledge base pertainig to the leader's style and productivity effectiveness and efficiency. This exploratory research is among the first to quantitatively assess these leadership styles in a field experiment.

APPENDIX A

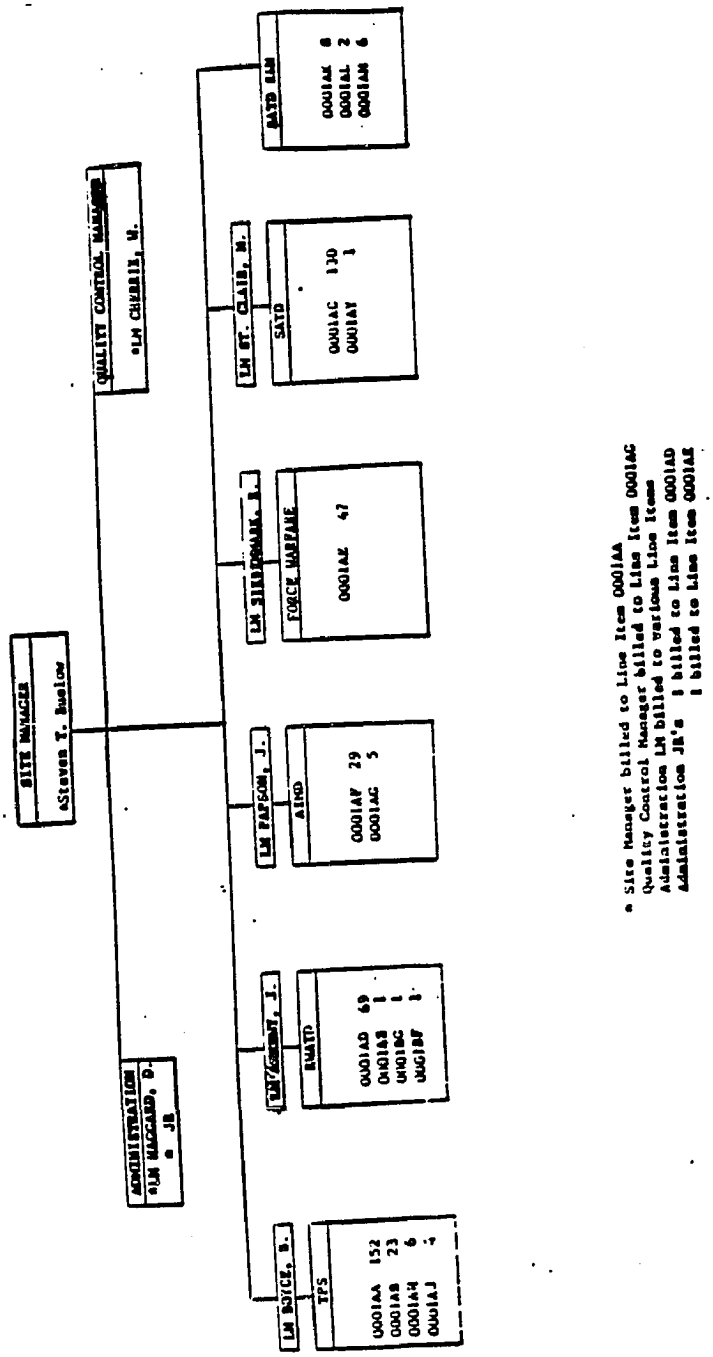
LEADERSHIP STYLE MODELS

APPENDIX B

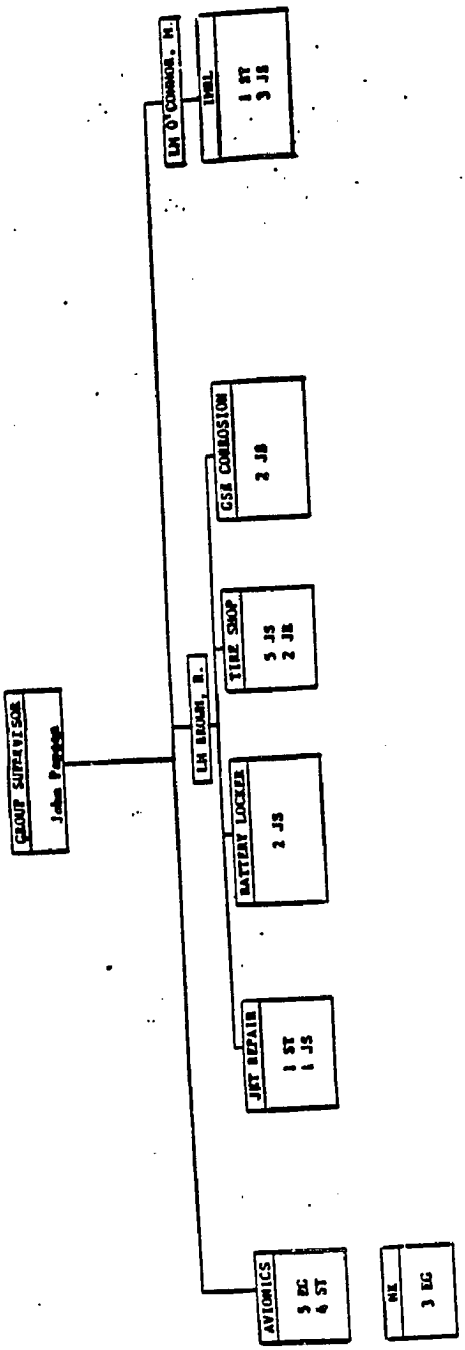
THE TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP PROCESS MODELS

APPENDIX C

THE XYZ CORPORATION ORGANIZATION CHARTS

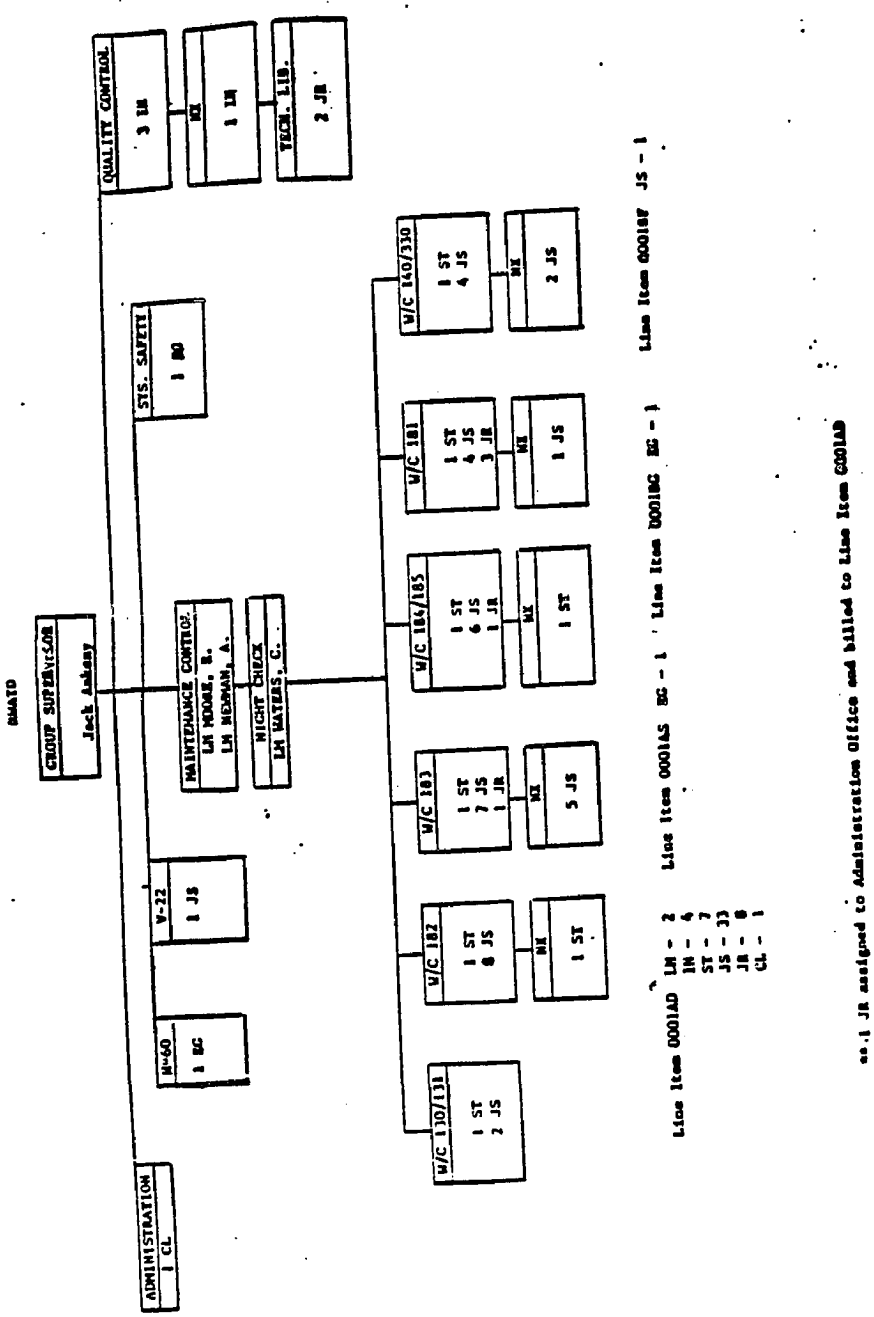


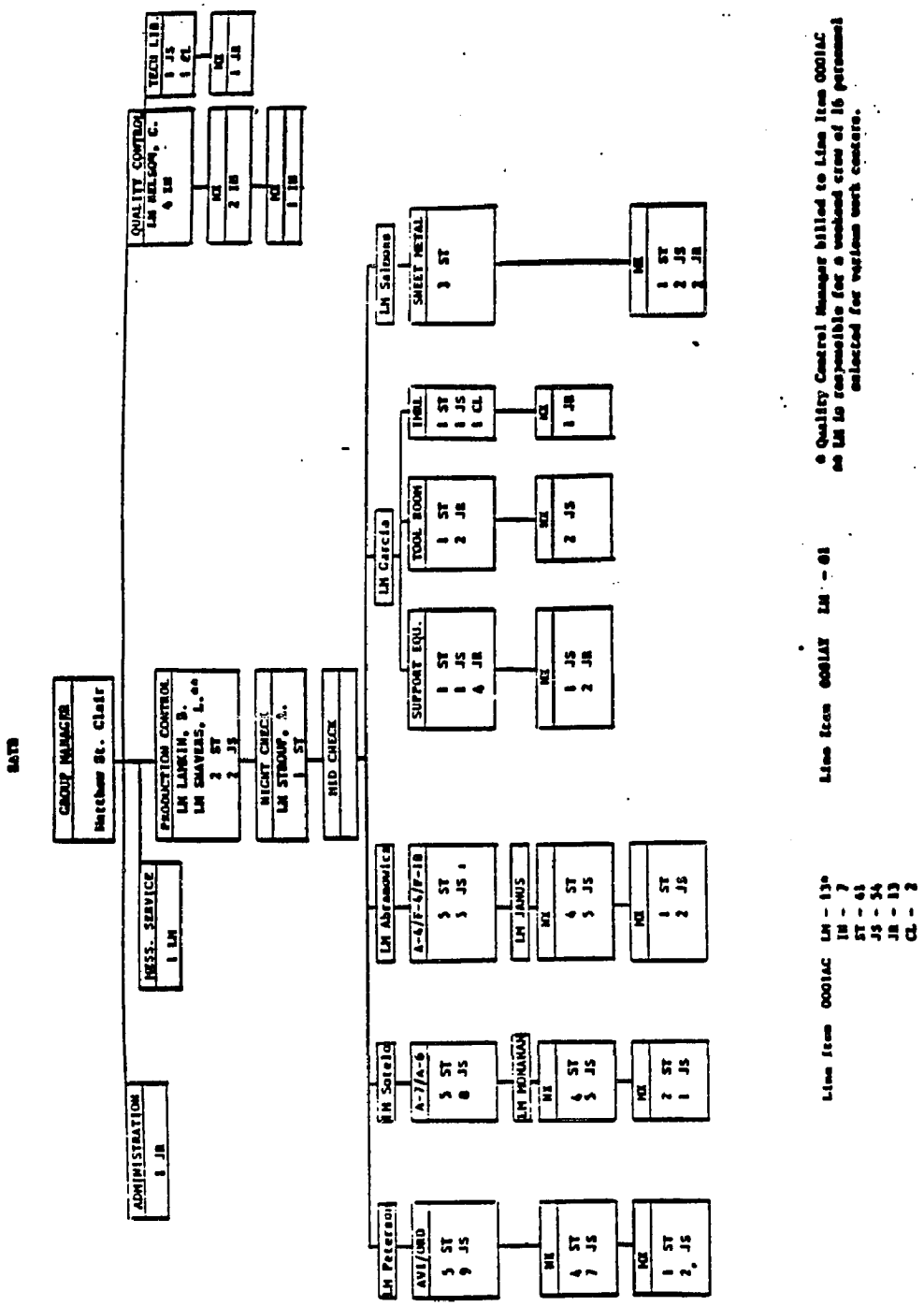
* Site Manager billed to Line Item 0001AA
Quality Control Manager billed to Line Item 0001AC
Administration LM billed to various Line Items
Administration JR's 1 billed to Line Item 0001AD
1 billed to Line Item 0001AK

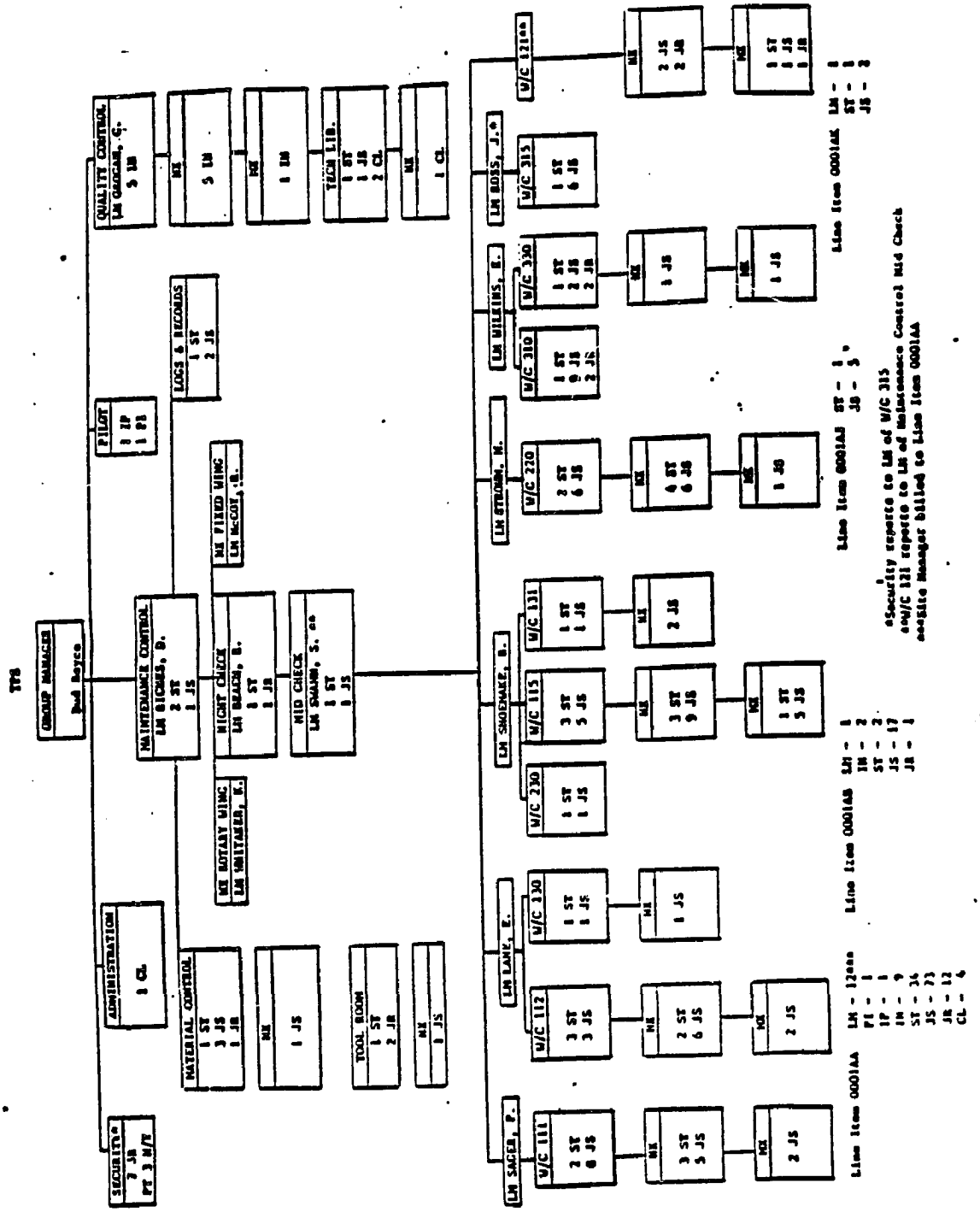


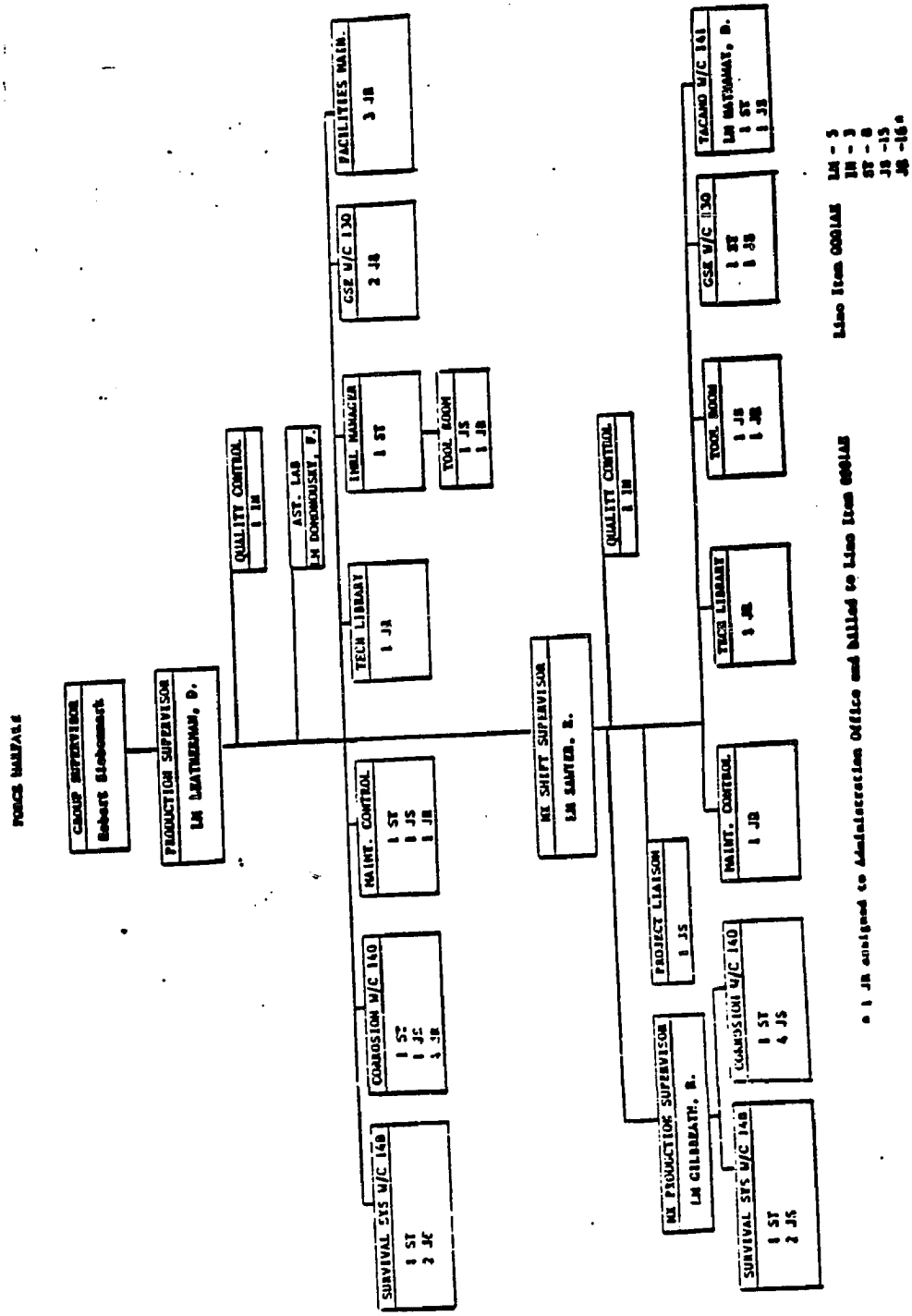
Line Item 0001AB EG - 8
LN - 3
ST - 6
JS - 11
JS - 2

Line Item 0001AC JS - 2









APPENDIX D

THE XYZ CORPORATION LETTER OF CONSENT

The XYZ
CORPORATION
AEROSPACE
OPERATIONS
6801 Calmont Avenue
P.O. Box 12087

21 April 1987

Captain John Longshore
Bachelor Officers Quarters
Room 246
Naval Air Station
Patuxent River, MD 20670

Dear Mr. Longshore:

In review of your proposal of 19 March 1987 to conduct a study within Dynalectron which will provide you a field foundation for a doctoral dissertation leading to a Doctorate in Business Administration. Dynalectron tentively agrees at this time to allow your sampling to be conducted based on your initial proposal. There are some conditions which must be met before your project can be initiated.

1. Dynalectron must be guaranteed the company's complete anonymity will be safeguarded throughout your report and that the opinions and findings are your own and not necessarily that of Dynalectron's.

2. Dynalectron reserves the right to review, accept or reject the research instrument prior to it's use within the organization.

3. It must be completely understood that Dynalectron employee participation in this study is entirely voluntary and the time at which the survey is conducted will be that other than the employee's working hours.

4. Following the completion of your study a complete report of your findings will be provided to Dynalectron and shall become the property of the company.

In addition to the aforementioned, Dynalectron requires that all procedures, conditions and survey instruments be completely agreed upon with the local Patuxent River Dynalectron (team 10-4E) authority prior to the start of the project.

We, at Dynalectron, hope these conditions and requirements are amenable to you and wish you complete success in obtaining your personal educational goals.

Sincerely,

Steven T. Buelow

Steven T. Buelow
Site Manager

APPENDIX E

SURVEY QUESTIONNAIRE INSTRUMENT

Date_____.

Dear Survey Participant:

The purpose of this study is to discover what effect leadership styles may have on group productivity.

Your participation in this study is ENTIRELY VOLUNTARY. However, please consider the fact that your responses to the attached survey questionnaire affords you and others in your organization the opportunity to make your opinions known on a completely confidential basis. Additionally, your patricipation will aid the Corporate Education and Training Staff in its implementation of a Management Development Program.

Your anonymity will be safeguarded because the survey results will be reported in summary form only. Your individual responses will be STRICTLY CONFIDENTIAL, USED FOR RESEARCH PURPOSES ONLY, AND WILL NOT BECOME A PART OF ANY OFFICAL RECORD.

Upon completion of the research project, results will be accessible to all participants. Should you desire your own copy of these results, please send the undersigned your name in a separate envelope to assure confidentiality.

An even more complete report will be available at a future date when the findings become part of my doctoral dissertation for the degree of Business Administration.

Please take the few minutes necessary to complete the survey questionnaire and return it in a sealed envelope to the collection person.

Thank-you for your time and participation.

Sincerely,

John Longshore

Privacy Act Statement

Public Law 95-579 called the Privacy Act of 1974 requires that you be informed of the purposes and uses to be made of the information collected.

Part I

Directions: The following questions concern your general background and are necessary in order to group people in similar categories. Unless a written response is required, please circle the number which corresponds to the most appropriate answer.

A. Division:
1. TPS 2. RWATD 3. AIMD 4. SATD
5. SATD R&M 6. Force Warfare

B. Organization position:
1. GM 2. EG 3. LM 4. IN
5. ST 6. JS 7. JR 8. CL

C. Sex: 1. male 2. female

D. Age:
1. 18-20 2. 21-30 3. 31-40
4. 41-50 5. 51-60 6. 61-70

E. Education Level:
1. some high school
2. high school diploma
3. some college
4. bachelor's degree

F. Length of Employment
1. less than 1 year
2. 1 to 2 years
3. 2 to 4 years
4. 4 to 8 years
5. 8 to 12 years
6. greater than 12 years

Part II

Directions: Group performance can either aid the organization's productivity or hold it back. This area assesses some of the dimensions that contribute to group effectiveness. REMEMBER to consider your IMMEDIATE WORK GROUP when responding to these questions.

Use the following for the five possible responses

Key:	4	3	2	1	0
	Frequently if not always	Fairly often	Sometimes	Once in a while	Not at all

G.___ When problems occur, people in my work group talk openly in an honest effort to resolve them.

H.___ We meet our productivity requirements.

I.___ Our group does what it is supposed to do and does it well.

J.___ People are criticized in my work group if they try to improve things.

K.___ I would be criticized by members of my work group if I were to work harder than they do.

L.___ Our work group discusses ways to get more done.

SURVEY CONTINUED ON REVERSE SIDE

Part III

Directions: Listed below are descriptive statements about supervisors. For each statement judge how frequently your CURRENT IMMEDIATE SUPERVISOR has displayed the behavior described.

Use the following for the five possible responses

Key:	4	3	2	1	0
	Frequently if not always	Fairly often	Sometimes	Once in a while	Not at all

M.___ Makes me proud to be associated with him/her.

N.___ Tells me what to do if I want to be rewarded for my efforts.

O.___ Gives personal attention to members who seem neglected.

P.___ As long as the old ways work, he/she is satisfied with my performance.

Q.___ I have complete faith in him/her.

R.___ There is close agreement between what I am expected to put into the group effort and what I can get out of it.

S.___ Finds out what I want and tries to help me get it.

T.___ He/She is content to let me continue doing my job in the same way as always.

U.___ Is a model for me to follow.

V.____ Gives me what I want in exchange for showing my support for him/her.

W.___ You can count on him/her to express his/her appreciation when you do a good job.

X.___ As long as things are going all right, he/she does not try to change anything.

Y.___ Inspires loyalty to the organization.

PLEASE CONTINUE SURVEY ON NEXT PAGE

Use the following for the five possible responses

Key:	4	3	2	1	0
	Frequently if not always	Fairly often	Sometimes	Once in a while	Not at all

Z.___ Whenever I feel like it, I can negotiate with him/her about what I can get from what I accomplish.

AA.___ Is satisfied when I meet agreed upon standards for good work.

BB.___ Asks no more of me than what is absolutely essential to get the work done.

CC.___ Is an inspiration to us.

DD.___ Talks a lot about special commendations and promotions for good work.

EE.___ I earn credit with him/her by doing my job well.

FF.___ It is alright if I take initiatives but he/she does not encourage me to do so.

GG.___ Inspires loyalty to him/her.

HH.___ Assures me I can get what I personally want in exchange for my efforts.

II.___ Treats each subordinate individually.

JJ.___ Only tells me what I have to know to do my job.

KK.___ Encourages me to express my ideas and opinions.

LL.___ I decide what I want; he/she shows me how to get it.

MM.___ Makes me feel we can reach our goals without him/her if we have to.

END OF SURVEY

APPENDIX F

DATA ANALYSES TABLES

TABLE 1
INTER-CORRELATIONS BETWEEN LEADERSHIP STYLE
COMPONENTS AND SUB-COMPONENTS SUB-SCALES
N = 48

Transformational
Leadership Style

Charismatic Sub-Component

	char1	char2	char3	char4	char5	char6	char7
char1	1						
char2	.72	1					
char3	.63	.62	1				
char4	.40	.35	.56	1			
char5	.72	.70	.83	.62	1		
char6	.76	.69	.66	.51	.79	1	
char7	.53	.51	.69	.45	.73	.60	1

Idividualized Consideration Sub-component

	indcon1	indcon2	indcon3	indcon4	indcon5	indcon6	indcon7
indcon1	1						
indcon2	.46	1					
indcon3	.51	.67	1				
indcon4	.27	.35	.46	1			
indcon5	.34	.46	.44	.29	1		
indcon6	.46	.46	.50	.48	.33	1	
indcon7	.21	.36	.45	.13	.23	.27	1

$p \leq .05$

TABLE 1
continued
INTER-CORRELATIONS BETWEEN LEADERSHIP STYLE
COMPONENTS AND SUB-COMPONENTS SUB-SCALES
N = 48

Transactional
Leadership Style

Contingent Reward Sub-component

	conre1	conre2	conre3	conre4	conre5	conre6	conre7
conre1	1						
conre2	.26	1					
conre3	.33	.21	1				
conre4	.46	.33	.56	1			
conre5	.48	.40	.34	.46	1		
conre6	.42	.28	.55	.48	.49	1	
conre7	.30	.49	.32	.63	.49	.34	1

Management-by-Exception Sub-component

	mgtexp1	mgtexp2	mgtexp3	mgtexp4	mgtexp5	mgtexp6
mgtexp1	1					
mgtexp2	.22	1				
mgtexp3	.08	.01	1			
mgtexp4	-.15	.20	.36	1		
mgtexp5	.10	.31	.07	.51	1	
mgtexp6	-.03	-.32	-.03	.04	.18	1

$p \leq .05$

TABLE 2
INTER-CORRELATIONS BETWEEN RESPONDENTS'
PERCEIVED GROUP PRODUCTIVITY SUB-SCALES
N = 48

Productivity Perception

Perceived Productivty	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
groupa1	1					
groupa2	.29	1				
groupb1	-.15	.27	1			
groupb2	.12	.24	.45	1		
groupc1	-.02	.48	.01	-.13	1	
groupc2	.46	.43	.17	.04	0	1

$p \leq .05$

TABLE 3
SUMMARY STATISTICS WITH CENTRAL TENDENCIES
FOR THE TRANSFORMATIONAL LEADERSHIP COMPONENT
AND ITS SUB-COMPONENTS
N = 302

Transformational Leadership

Charismatic Sub-component

	char1	char2	char3	char4	char5	char6	char7
Mean	2.3	2.4	1.9	2.6	1.9	1.8	2.1
Standard Deviation	1.26	1.32	1.36	1.30	1.35	1.32	1.44
Median	2	3	2	3	2	2	2

Individualized Consideration Sub-component

	indcon1	indcon2	indcon3	indcon4	indcon5	indcon6	indcon7
Mean	1.7	2.1	2.3	2.9	1.9	2.5	2.2
Standard Deviation	1.24	1.35	1.31	1	1.42	1.34	1.38
Median	2	2	2	3	2	3	2

$p \leq .05$

TABLE 4
SUMMARY STATISTICS WITH CENTRAL TENDENCIES
FOR THE TRANSACTIONAL LEADERSHIP COMPONENT
AND ITS SUB-COMPONENTS
N = 302

Transactional Leadership

Contingent Reward Sub-component

	conre1	conre2	conre3	conre4	conre5	conre6	conre7
Mean	1.4	2.3	1.4	1.7	1.1	1.2	1.4
Standard Deviation	1.23	1.32	1.28	1.35	1.23	1.22	1.34
Median	1	2	1	2	1	1	1

Management-by-Exception Sub-component

	mgtexp1	mgtexp2	mgtexp3	mgtexp4	mgtexp5	mgtexp6
Mean	2.3	2.5	2.6	2.0	1.6	1.8
Standard Deviation	1.23	1.23	1.19	1.29	1.22	1.37
Median	2	3	3	2	2	2

$p \leq .05$

TABLE 5
SUMMARY STATISTICS AND CENTRAL TENDENCIES
FOR GROUP PRODUCTIVTIY AS MEASURED BY RESPONDENT' PERCEPTION
N = 302

Productivity Perception

Statistical Measurement	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Mean	2.6	3.5	2.6	3	3.5	2.2
Standard Deviation	1.38	.71	1.31	1.28	.70	1.36
Median	3	4	3	4	4	2

$p \leq .05$

TABLE 6
SUMMARY STATISTICS AND CENTRAL TENDENCIES
FOR GROUP PRODUCTIVITY AS MEASURED BY OUTPUT/INPUT RATIO
(FISCAL YEAR'S DATA FROM APRIL 1986 - MARCH 1987)

Output/Input Productivity Measurements	TPS	RWATD	FORWAR	SATD	AIMD
Mean	.26 (2)	.31 (2.4)	.49 (4.1)	.10 (1)	.15 (1.4)
Standard Deviation	.017	.038	.044	.012	.022
Median	.22	.31	.49	.09	.15

( ) Normalized Value

TABLE 7
CORRELATIONS BETWEEN RESPONDENTS' PERCEPTIONS OF
PRODUCIVITY AND THE TRANSFORMATIONAL LEADERSHIP STYLE
N = 302

Transformational Leadership Style	Productivity Perceptions					
	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Charismatic Sub-component						
char1	.25	.22	.23	.11	.14	.26
char2	.31	.26	.26	.18	.15	.31
char3	.30	.22	.33	.16	.15	.32
char4	.21	.17	.24	.06	.13	.22
char5	.30	.20	.31	.12	.11	.36
char6	.21	.15	.22	.07	.07	.23
char7	.30	.17	.33	.14	.08	.35
Individualized Consideration Sub-component						
indcon1	.31	.23	.18	.08	.15	.35
indcon2	.31	.25	.23	.10	.16	.41
indcon3	.24	.22	.26	.10	.17	.31
indcon4	.21	.25	.17	.02	.20	.25
indcon5	.19	.22	.13	-.02	.16	.22
indcon6	.20	.24	.19	.12	.19	.23
indcon7	.21	.12	.09	.02	.10	.18

$p \leq .05$

TABLE 8
CORRELATIONS BETWEEN RESPONDENTS' PERCEPTIONS OF
PRODUCTIVITY AND THE TRANSACTIONAL LEADERSHIP STYLE
N = 302

Transactional Leadership Style	Productivity Perceptions					
	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Contingent Reward Sub-component						
conre1	.23	.08	.10	-.01	.06	.28
conre2	.38	.34	.26	.15	.24	.39
conre3	.17	.17	.09	-.02	.16	.14
conre4	.23	.25	.12	.01	.13	.30
conre5	.23	.06	.12	-.01	.03	.30
conre6	.18	.04	.08	-.04	.01	.20
conre7	.20	.16	.15	.04	.10	.32
Management by-Exception Sub-component						
mgtexp1	.07	.13	-.09	-.04	.18	-.05
mgtexp2	-.02	.07	.02	-.06	.15	.02
mgtexp3	-.01	.06	-.08	-.13	.09	-.05
mgtexp4	.09	.04	-.04	-.09	.10	.04
mgtexp5	-.10	-.01	-.21	-.15	.02	0
mgtexp6	-.01	0	.27	-.11	.04	-.05

$p \leq .05$

TABLE 9
CROSS-TABULATION ANALYSIS OF LEADERSHIP STYLE AND GROUP PRODUCTIVITY AS MEASURED BY RESPONDENTS' PERCEPTION
N = 302

Transformational Leadership Style

Productivity Perception

Chi-Square Statistic

	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Charismatic Sub-component						
char1	41.82	26.71	31.02	18.43	16.39	44.33
char2	62.63	46.53	40.02	27.67	19.93	51.22
char3	44.96	27.46	49.60	24.86	20.39	55.64
char4	32.97	26.93	53.34	17.96	19.52	38.77
char5	44.24	24.72	47.32	26.96	16.16	59.76
char6	33.87	25.48	24.89	11.76	19.97	42.95
char7	44.58	37.98	61.70	18.22	18.97	64.65
Individualized Consideration Sub-component						
indcon1	33.61	35.00	26.11	13.59	21.42	49.20
indcon2	44.80	44.01	32.60	29.98	35.84	65.77
indcon3	39.62	30.48	50.39	21.29	27.74	50.59
indcon4	27.79	49.52	28.87	8.22	50.14	39.59
indcon5	26.17	31.01	30.79	25.01	42.97	46.86
indcon6	41.61	38.58	41.82	28.37	41.97	38.27
indcon7	43.16	14.35	27.74	14.22	20.54	35.55

$p \leq .05$

TABLE 9
continued
CROSS-TABULATION ANALYSIS OF LEADERSHIP STYLES AND GROUP PRODUCTIVITY AS MEASURED BY RESPONDENTS' PERCEPTION
N = 302

Transactional Leadership Style	Productivity Perception Chi-Square Statistic					
	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Contingent Reward Sub-component						
conre1	38.64	22.06	14.32	34.19	32.89	43.44
conre2	48.63	53.63	39.60	19.35	43.17	59.54
conre3	29.12	18.64	29.23	26.11	20.53	35.36
conre4	33.00	29.91	32.27	17.36	22.20	58.70
conre5	25.92	12.02	24.77	14.16	14.75	40.99
conre6	23.00	12.63	19.69	18.86	7.58	32.85
conre7	22.46	25.65	28.03	11.57	15.44	51.58
Management-by-Exception Sub-component						
mgtexp1	10.89	21.65	28.05	17.00	28.62	22.25
mgtexp2	42.62	16.80	16.28	20.05	40.07	15.21
mgtexp3	14.65	11.19	16.93	22.26	19.30	15.96
mgtexp4	15.87	15.40	22.43	13.72	35.49	16.58
mgtexp5	17.69	17.20	52.02	38.30	9.85	24.32
mgtexp6	19.91	19.82	47.54	17.93	21.36	16.00

$p \leq .05$

TABLE 9
continued
CROSS-TABULATION ANALYSIS OF LEADERSHIP STYLES AND GROUP PRODUCTIVITY AS MEASURED BY RESPONDENTS' PERCEPTION
N = 302

Transformational Leadership Style	Productivity Perception ETA Statistics					
	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Charismatic Sub-component						
char1	.28/.26	.24/.26	.25/.26	.16/.18	.19/.17	.30/.27
char2	.33/.33	.26/.29	.30/.28	.16/.18	.18/.20	.33/.32
char3	.32/.31	.22/.24	.34/.36	.21/.19	.18/.18	.34/.32
char4	.23/.25	.17/.18	.29/.27	.12/.16	.13/.18	.23/.24
char5	.31/.32	.21/.24	.33/.34	.17/.16	.18/.14	.38/.37
char6	.29/.22	.15/.20	.22/.23	.10/.15	.13/.12	.26/.25
char7	.31/.30	.23/.21	.34/.39	.15/.17	.15/.14	.36/.36
Individualized Consideration Sub-component						
indcon1	.31/.31	.26/.25	.21/.21	.10/.14	.20/.16	.35/.37
indcon2	.32/.31	.28/.26	.24/.26	.20/.18	.23/.18	.39/.39
indcon3	.28/.26	.26/.24	.26/.29	.15/.17	.21/.20	.20/.23
indcon4	.22/.24	.26/.29	.18/.20	.07/.08	.25/.25	.30/.31
indcon5	.20/.19	.25/.24	.18/.15	.16/.12	.25/.17	.31/.33
indcon6	.22/.26	.28/.29	.23/.23	.17/.17	.32/.23	.22/.24
indcon7	.24/.28	.12/.14	.13/.16	.10/.11	.14/.16	.35/.35

$p \leq .05$

TABLE 9
continued
CROSS-TABULATION ANALYSIS OF LEADERSHIP
STYLE AND GROUP PRODUCTIVITY AS MEASURED
BY RESPONDENTS' PERCEPTION
N = 302

Transactional Leadership Style	Productivity Perception ETA Statistic					
	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Contingent Reward Sub-component						
conre1	.28/.26	.24/.26	.25/.27	.16/.18	.19/.17	.30/.27
conre2	.41/.40	.38/.38	.27/.28	.17/.20	.26/.26	.39/.39
conre3	.19/.22	.20/.20	.12/.13	.12/.17	.18/.19	.20/.23
conre4	.25/.27	.27/.25	.16/.15	.06/.15	.18/.14	.30/.31
conre5	.22/.25	.09/.10	.14/.14	.07/.08	.12/.09	.31/.32
conre6	.20/.21	.06/.13	.10/.09	.15/.11	.08/.06	.22/.24
conre7	.24/.28	.22/.20	.18/.18	.09/.15	.19/.11	.35/.35
Management-by-Exception Sub-component						
mgtexp1	.07/.11	.16/.15	.15/.11	.11/.11	.19/.16	.05/.14
mgtexp2	.21/.20	.15/.10	.07/.12	.12/.07	.21/.16	.18/.04
mgtexp3	.07/.15	.13/.07	.12/.14	.13/.16	.14/.10	.08/.12
mgtexp4	.16/.10	.16/.06	.14/.11	.14/.12	.27/.10	.08/.15
mgtexp5	.17/.10	.10/.07	.25/.23	.19/.19	.08/.10	.18/.12
mgtexp6	.12/.12	.13/.07	.30/.27	.18/.16	.12/.17	.13/.09

$p \leq .05$

TABLE 9
continued
CROSS-TABULATION ANALYSIS OF LEADERSHIP STYLE AND GROUP PRODUCTIVITY AS MEASURED BY RESPONDENTS' PERCEPTION
N = 302

Transformational Leadership Style

Productivity Perception

Pearson r Statistic

	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Charismatic Sub-component						
char1	.26	.22	.23	.11	.14	.26
char2	.32	.26	.27	.19	.17	.31
char3	.31	.20	.33	.16	.15	.31
char4	.22	.16	.25	.07	.12	.21
char5	.31	.21	.32	.13	.14	.34
char6	.31	.15	.22	.07	.09	.23
char7	.30	.18	.34	.14	.11	.35
Individualized Consideration Sub-component						
indcon1	.30	.23	.19	.08	.15	.35
indcon2	.30	.24	.22	.11	.16	.40
indcon3	.24	.23	.26	.11	.18	.31
indcon4	.21	.24	.17	.04	.21	.25
indcon5	.18	.24	.13	-.02	.16	.23
indcon6	.21	.24	.20	.12	.21	.23
indcon7	.23	.12	.11	.03	.12	.18

$p \leq .05$

TABLE 9
continued
CROSS-TABULATION ANALYSIS OF LEADERSHIP
STYLE AND GROUP PRODUCTIVITY AS MEASURED
BY RESPONDENTS' PERCEPTION
N = 302

Transactional Leadership Style	Productivity Perception Pearson r Statistic					
	groupa1	groupa2	groupb1	groupb2	groupc1	groupc2
Contingent Reward Sub-component						
conre1	.23	.09	.10	-.01	.06	.29
conre2	.39	.35	.25	.15	.24	.39
conre3	.18	.19	.09	.01	.17	.17
conre4	.24	.25	.14	.01	.13	.30
conre5	.22	.06	.11	-.02	.02	.30
conre6	.19	.06	.08	-.05	.01	.22
conre7	.21	.18	.15	.05	.10	.34
Management-by-Exception Sub-component						
mgtexp1	.06	.12	-.10	-.05	.16	-.04
mgtexp2	-.02	.07	.01	-.06	.14	.02
mgtexp3	-.01	.05	-.10	-.12	.08	-.07
mgtexp4	.07	.03	-.07	-.10	.09	.05
mgtexp5	.10	-.01	-.21	-.15	.02	.02
mgtexp6	-.01	-.01	-.26	-.12	.06	-.06

$p \leq .05$

TABLE 10
SPEARMAN RANK CORRELATION COEFFICIENT OF THE
TRANSFORMATIONAL LEADERSHIP STYLE CHARACTERISTICS AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transformational Leadership Style

Spearman Rank Correlation Coefficient

	char1	char2	char3	char4	char5	char6	char7
Charismatic Sub-component	.054	.009	-.006	.043	.104	.067	.063

	indcon1	indcon2	indcon3	indcon4	indcon5	indcon6	indcon7
Individualized Consideration Sub-component	.079	.038	-.030	.011	.006	.026	-.065

$p \leq .05$

TABLE 10
continued
SPEARMAN RANK CORRELATION COEFFICIENT OF THE
TRANSACTIONAL LEADERSHIP STYLE CHARACTERISTICS AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transactional Leadership Style	Spearman Rank Correlation Coefficient						
	conre1	conre2	conre3	conre4	conre5	conre6	conre7
Contingent Reward Sub-component	-.18	.064	.0005	.035	.115	.095	.110
	mgtexp1	mgtexp2	mgtexp3	mgtexp4	mgtexp5	mgtexp6	
Management-by-Exception Sub-component	.010	.102	.109	.053	.049	-.019	

$p \leq .05$

TABLE 11
PARTIAL CORRELATION COEFFICIENTS OF THE
TRANSFORMATIONAL LEADERSHIP STYLE AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transformational Leadership Style	Partial Correlation Coefficients						
	char1	char2	char3	char4	char5	char6	char7
Charismatic Sub-component	.001	-.043	-.166	-.022	.205	.058	.076
	indcon1	indcon2	indcon3	indcon4	indcon5	indcon6	indcon7
Individualized Consideration Sub-component	.069	.052	-.14	.067	-.024	.041	-.090

$p \leq .05$

TABLE 11
continued
PARTIAL CORRELATION COEFFICIENTS OF THE
TRANSACTIONAL LEADERSHIP STYLE AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transactional Leadership Style	Partial Correlation Coefficients						
	conre1	conre2	conre3	conre4	conre5	conre6	conre7
Contingent Reward Sub-component	-.018	.080	-.041	-.027	.030	.092	.067
	mgtexp1	mgtexp2	mgtexp3	mgtexp4	mgtexp5	mgtexp6	
Management-by-Exception Sub-component	-.046	.055	.073	-.046	.010	.014	

$p \leq .05$

TABLE 12
CHI-SQUARE GOODNESS-OF-FIT ANALYSIS
OF THE TRANSFORMATIONAL LEADERSHIP STYLE
AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transformational Leadership style	Chi-Square Statistic						
	char1	char2	char3	char4	char5	char6	char7
Charismatic Sub-component	18.24	16.83	27.45	22.05	23.26	13.06	13.85
Sig. Level	0.31	0.40	0.04	0.14	0.11	0.67	0.61
	indcon1	indcon2	indcon3	indcon4	indcon5	indcon6	indcon7
Individualized Consideration Sub-component	22.70	20.05	35.36	20.47	20.57	26.10	14.83
Sig. Level	0.12	0.22	0.004	0.20	0.20	0.05	0.54

$p \leq .05$

TABLE 12
continued
CHI-SQUARE GOODNESS-OF-FIT ANALYSIS
OF THE TRANSACTIONAL LEADERSHIP STYLE
AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transactional Leadership Style	Chi-Square Statistic						
	conrel	conre2	conre3	conre4	conre5	conre6	conre7
Contingent Reward Sub-component	17.53	20.60	13.03	16.60	22.87	23.09	15.81
Sig. Level	0.35	0.19	0.67	0.41	0.12	0.11	0.47
	mgtexpl	mgtexp2	mgtexp3	mgtexp4	mgtexp5	mgtexp6	
Management-by-Exception component	24.39	16.51	19.47	15.94	19.67	7.51	
Sig. Level	0.08	0.42	0.25	0.46	0.24	0.96	

$p \leq .05$

TABLE 13
TWO-TAILED T-TEST ANALYSIS OF THE
TRANSFORMATIONAL LEADERSHIP STYLE AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transformational
Leadership Style

	T-Test Statistic						
	char1	char2	char3	char4	char5	char6	char7
Charismatic Sub-component	2.96	4.70	-.90	6.70	-.80	-1.03	1.06
Sig. Level	0.003	0.003	0.37	1.0E-8	0.42	0.30	0.29
	indcon1	indcon2	indcon3	indcon4	indcon5	indcon6	indcon7
Individualized Consideration Sub-component	-2.72	1.21	3.88	12.20	-.94	5.35	2.62
Sig. Level	0.007	0.23	0.0001	9.0E-9	0.35	1.0E-7	0.009

$p \leq .05$

TABLE 13
continued
TWO-TAILED T-TEST ANALYSIS OF THE
TRANSACTIONAL LEADERSHIP STYLE AND GROUP PRODUCTIVITY
(AS MEASURED BY NORMALIZED OUTPUT/INPUT RATIO)
N = 302

Transactional Leadership Style	T-Test Statistic						
	conre1	conre2	conre3	conre4	conre5	conre6	conre7
Contingent Reward Sub-component	-7.00	3.15	-6.17	-2.80	-10.20	-9.20	-6.07
Sig. Level	1.0E-8	0.002	4.0E-9	0.005	7.0E-14	2.0E-8	2.0E-9
	mgtexp1	mgtexp2	mgtexp3	mgtexp4	mgtexp5	mgtexp6	
Management-by-Exception Sub-component	3.28	5.44	7.37	.54	-4.36	-1.93	
Sig. Level	0.002	8.0E-8	6.0E-13	0.60	2.0E-5	0.05	

$p \leq .05$

TABLE 14
RESPONDENTS' CHARACTERISTICS
N = 347

Category	Number	Percent
Respondents by Division		
TPS	92	.27
RWATD	72	.21
AIMD	32	.09
SATD	107	.31
Force Warfare	44	.13
Respondents by Organizational Position		
GM	9	.03
EG	9	.03
LM	27	.08
IN	15	.04
ST	83	.24
JS	148	.43
JR	50	.14
CL	6	.02
Respondents by Sex		
Male	314	.92
Female	26	.08

TABLE 14
continued
RESPONDENTS' CHARACTERISTICS
N = 347

Category	Number	Percent
Respondents by Age		
18-20	4	.09
21-30	194	.56
31-40	83	.24
41-50	48	.14
51-60	14	.04
61-70	1	.002
Respondents Education Level		
Some High School	10	.03
High School Diploma	205	.60
Some College	115	.34
Bachelor's Degree	9	.03
Respondents Length of Employment		
Less than 1 year	58	.17
1 to 2 years	57	.17
2 to 4 years	72	.21
4 to 6 years	115	.34
8 to 12 years	26	.08
Greater than 12 years	7	.02

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