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THE RELATIONSHIP BETWEEN TRANSFORMATIONAL AND TRANSACTIONAL
LEADERSHIP AND JOB SATISFACTION IN AN AEROSPACE ENVIRONMENT

By
Patricia Catalano

A DISSERTATION

Submitted to
Wayne Huizenga Graduate School of Business and
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Nova Southeastern University

in partial fulfillment of the requirements
for the degree of

DOCTOR OF BUSINESS ADMINISTRATION
WITH A SPECIALTY IN HUMAN RESOURCE MANAGEMENT

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A Dissertation
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THE RELATIONSHIP BETWEEN TRANSFORMATIONAL AND TRANSACTIONAL
LEADERSHIP AND JOB SATISFACTION IN AN AEROSPACE ENVIRONMENT

By

Patricia Catalano

We hereby certify that this dissertation submitted by Patricia Catalano conforms to acceptable standards, and as such is fully adequate in scope and quality. It is therefore approved as the fulfillment of the Dissertation requirements for the degree of Doctor of Business Administration with a specialty in Human Resource Management.

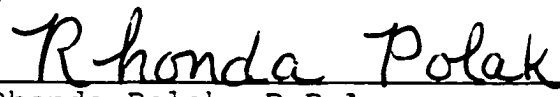
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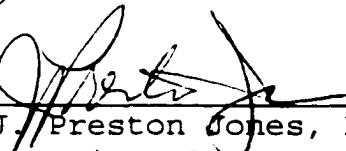
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CERTIFICATION STATEMENT

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ABSTRACT

THE RELATIONSHIP BETWEEN TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP AND JOB SATISFACTION IN AN AEROSPACE ENVIRONMENT

by

Patricia Catalano

The objective of this research was to provide an empirical assessment of Transactional and Transformational leadership and its relation to the job satisfaction of subordinates in an aerospace environment. The hypotheses of this study suggests that the independent variables, transactional leadership and transformational leadership would be positively correlated to the three dependent variables, overall job satisfaction, satisfaction with supervision, and work satisfaction.

The participants of this study, engineers and technical support staff employed at a aerospace company, were assessed utilizing two instruments: the MLQ and the JDI. Leadership behavior was assessed on the MLQ of Bass and Avolio (2000). This instrument posits a three factor construct of transactional leadership (contingent rewards, passive management by exception, and active management by exception) and a three factor construct of transformational leadership (intellectual stimulation, inspirational motivation, and individual consideration). Job satisfaction was assessed using three subscales of the JDI—satisfaction that included: job satisfaction, satisfaction with supervision, and satisfaction with work.

The major findings of the study were:

(a) transactional leadership was not positively related to job satisfaction with the following exception: contingent reward was significantly and positively related to satisfaction with supervision; (b) transformational leadership was related to job satisfaction in the following ways: satisfaction with the job in general was weakly correlated with intellectual stimulation; satisfaction with supervision was moderately-to-strongly correlated with all three variables of transformational leadership; satisfaction with work was weakly related to intellectual stimulation and individual consideration.

The findings demonstrated that leadership in the aerospace industry generally follows similar leadership trends as in other organizations, whether the goal is the production of commodities for sale or the provision of services. It also shows that leadership in high-tech industries influences job satisfaction similarly to traditional industries.

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CHAPTER I
INTRODUCTION

Introduction and Background

Today's changing work environment calls for greater understanding of the behavioral aspects of leadership and its effects on job satisfaction. Companies are compelled to meet demands within the organization and seek out new approaches in leadership effectiveness. In responding to these needs, the research and theories of two distinct leadership styles have emerged - transactional and transformational leadership (Bommer, 1996).

Transactional leadership is based on an exchange between manager and employee (Bass, 1997). It promotes a structured, bureaucratic environment whereby subordinates achieve work responsibilities through leader directed goals, tasks, and required performance levels. The leader promotes an understanding of the relation between organizational needs and wants, and links this to goal achievements. Transactional leaders act in conventional ways and maintain the status quo of organizational systems and processes (Bass, 1997). These leaders are reactive, meeting problems as they surface, as opposed to being

proactive and utilizing strategy in anticipating and planning future needs.

For the transactional manager, effective leadership is based on a contingent reward system resulting in an exchange between leader and follower (Bass, 1985). The transactional managerial processes achieve organizational goals by providing those who perform well with rewards such as pay increases, recognition, and employee advancements. Non-performers are penalized by threat or discipline. Leaders under this management style, resort to disciplinary actions to achieve organizational goals (Bass, 1985).

This supports a management-by-exception (Bass, 1985) concept of leadership. The transactional manager practices a passive management style, intervening primarily by exception, that is, the manager intervenes when work procedures and standards are not aligned with the task.

The transformational leaders support a more unstructured and turbulent environment (Bass, 1985). The manager promotes innovation, (new ideas and concepts), and a vision for the future. The transformational leaders bring about major changes and are continually interacting with their followers to create this change.

This leadership method is associated with charisma (Bass, 1985). According to Dow (1969) "charisma involves a unique relationship between the leader and follower, rather than the personality of the leader" (Marriner-Tomey, 1993).

The transformational leader motivates his followers to create new paradigms. He inspires subordinates to concentrate on intrinsic as opposed to extrinsic factors and the achievement of extraordinary missions.

The transformational leader supports an active management style providing individual consideration and intellectual stimulation (Bass, 1985). Charisma is a dominant characteristic of this manager. This leadership approach develops the subordinate's capabilities through empowerment. Leaders are attentive to their subordinates needs and are mindful of the human elements of interaction. Intellectual stimulation utilizes forms of innovation and problem analysis from diverse perspectives. It is a leadership style that fosters creative thinking.

Purpose of the Study

The purpose of this research is to conduct a study of Bass and Avolio's (1990) Augumentation Model of Transactional and Transformation leadership and its

relation to subordinate job satisfaction in an aerospace environment.

Results from this study shall provide information regarding effects of leadership style for an aerospace environment. It will provide an analysis of the multi-factor model of transformational and transactional leadership in relation to job satisfaction in an aerospace environment.

Definition of Terms

To assist in the understanding of terms used in this research study the following operational definitions are presented:

Transformational Leadership

Transformational leadership is a leader-follower relationship that inspires followers to perform at higher than expected levels. The transformational leader motivates followers by (1) raising their level of awareness, (2) getting them to transcend their personal interest for the sake of the team, and (3) moving followers to address their higher order needs (Bass, 1985).

Transactional Leadership

Transactional leadership is a leader-follower process that includes an exchange of rewards characterized by three factors, contingent rewards, passive management-by-exception, and active management-by-exception. The exchange occurs based on follower's satisfactory effort and performance (Bass, 1985).

Subordinates' Satisfaction

Subordinates' satisfaction is operationally defined as the respondent's self-report of satisfaction regarding overall job satisfaction, the supervisor, and work, within the aerospace environment, as measured by the Job Descriptive Index (JDI) by Smith, Kendall, and Hulin (1969).

Charisma

Charisma refers to the ability of the leader to instill within the follower characteristics such as pride, trust, and loyalty. This leader has the ability to envision the future, decipher what is really important and transmit a sense of the mission to the follower (Hater & Bass, 1988).

Inspirational Motivation

Inspirational motivation refers to the ability of the leader to arouse and inspire the follower by creating a strong sense of purpose and aligning individual and organizational needs (Bass and Avolio, 1990).

Individualized Consideration

Individualized consideration refers to a dimension whereby subordinates are mentored and motivated on an individual basis (Hater & Bass, 1988).

Intellectual Stimulation

Intellectual stimulation occurs when the leader arouses the follower to be innovative in reasoning and problem solving (Hater & Bass, 1988).

Idealized Influence

Idealized influence refers to utilizing demonstrated leadership behaviors such as inspiration, individualized consideration, and intellectual stimulation, to promote identification and emotional attachment with the leader (Avolio, Waldman, & Yammarino, 1991).

Contingent Rewards

Contingent rewards are rewards that are contingent upon agreed performance standards between the leader and follower (Bass, 1985).

Management-by-Exception

Management-by-exception refers to leadership behavior whereby the leader intervenes by exception, that is, when standards are not aligned with the task (Hater & Bass, 1988).

Laissez-faire Leadership

Laissez-faire leadership is a leadership style that lacks leader/follower interaction and minimal attention is given to subordinate's motivational and satisfaction needs (Bass & Avolio, 1990).

Structure of the Study

This study is composed of five chapters. Chapter I, the introduction, is an overview of the subject matter, background of the subject, purpose of the study, and definition of terms. Chapter II is the review of literature, which describes the manner in which the

leadership theory evolved. It also summarizes research on charismatic leadership theories, transactional and transformational theories, and on relationships between leadership and job satisfaction. Chapter III contains information about the method and design, describing the research design, the hypotheses, variables, instruments, sample, procedures of data collection and data analysis, and research limitations. Chapter IV reports the findings of the study. Chapter V, the concluding chapter, summarizes the study, analyzes the findings in light of leadership theory, the prior literature, and limitations of the study, draws implications for future practice, and presents recommendations for future research.

Conclusion

A great deal of research has been conducted on leadership and its relation to job satisfaction. However, to date, no data is available on transformational/transactional leadership behavior and job satisfaction in an aerospace environment. This study will explore these variables and findings will provide correlational information.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This survey of the literature summarizes previous research relevant to this study of transformational and transactional leadership and their relationships to subordinate job satisfaction. This chapter proceeds in this order: leadership evolution, transformational leadership theory, Bass and Avolio's (1990) Augmentation Model, job satisfaction studies, transformational leadership and job satisfaction, and conclusion.

Leadership Evolution

The behavioral aspects of management have been studied for many years. This section discusses the evolution of leadership studies as follows: trait approach, style approach, situational approach, contingency theory, path-goal theory, leader-member exchange theory, team leadership theory, and transformational leadership evolution.

Trait Approach

Early studies on leadership investigated the psychological characteristics of successful leaders. The trait approach was a systematic study of leadership that identified the qualities and characteristics of great leaders (Northouse, 1997). According to Bass (1990), until the early 1940's research on leadership primarily examined personality traits, identifying differences between leaders and non-leaders, and the extent of those differences. Findings of this research revealed that leaders did not fit a personality profile. In identifying successful leaders both the person and situation much be considered (Stogdill and Shartle, 1948).

Northouse (1997) reported that major findings regarding the study of traits resulted from Stogdill's studies. Results of Stogdill's first study conducted in the mid-1900s concluded that there was no consistent set of traits and that leaders differed across situations. In a later study, traits were associated with leadership and included 10 characteristics: self-confidence, achievement, persistence, insight, initiative, responsibility, influence, sociability, cooperativeness, and tolerance. Northouse concluded that after a century of research on traits it can be stated that intelligence, self-confidence,

determination, integrity, and sociability are necessary for a person to be perceived as a leader.

Style Approach

Following this period of inquiry, the style approach emerged which emphasized the behavior of the leader, rather than the personality. Northouse (1997) reported that this approach included two kinds of behaviors, task and relationship. The task behaviors help individuals reach their goals, and the relationship behaviors help subordinates feel comfortable in the process. In utilizing the style approach, the leader combines these behaviors to influence the subordinate. In the 1940s, studies were conducted on the style approach at Ohio State University utilizing a survey that included over 1,800 items. Results indicated that answers clustered around two leader behavior types, initiating structure and consideration.

Slightly modifying the Ohio State studies, research conducted at the University of Michigan investigated leadership behavior with an emphasis on small group performance. Results identified two types of leadership behaviors, employee orientation and production orientation. Along with these findings a well-known model of managerial behavior emerged, the Managerial Grid, later renamed the

Leadership Grid. According to Hersey and Blanchard (1996) this grid is an attitudinal model which measures the values and feelings of a manager and was designed to assist the leaders in attaining their goals by balancing concern for production and the people. Scores plotted on this grid show five leadership styles: Authority-Compliance, Country Club Management, Impoverished Management, Middle-of-the-Road Management, and Team Management. The style approach reminds the leaders that their actions should consider relationships.

Situational Approach

Subsequently, the situational approach became the topic of research and suggests that the leader's behavior is an outcome of situational factors. According to Northouse (1997) the situational approach was developed by Hersey and Blanchard in 1969 and was based on Reddin's 3-D Management Style Theory of 1967. This approach supports the concept that different situations require different types of leadership. Therefore, the leader must be adaptable. The situational approach involves two dimensions, directive and supportive. Similar to the style approach, the components were classified into four leadership styles by dichotomizing the two dimensions, the

high directive-low supportive style, the high directive-high supportive or coaching style, the high supportive-low directive style, and the low supportive-low directive style. The developmental level of the subordinate is also a consideration; employees are classified into four levels of development ranging from low to high. Currently, situational leadership is widely practiced within the workplace and is perceived as being effective.

Contingency Theory

Contingency theory states that the leader's behavior must be matched to the appropriate situation; the leader's behavior and effectiveness is contingent on matching leader behavior to situational variables (Bass, 1990). Fiedler has the most widely recognized contingency theory, also called the leader-match theory. To determine effectiveness, Fiedler studied styles of leaders in many different contexts. The framework for his theory included the style and the situation. Fiedler developed the Least Preferred Co-worker Scale to identify high and low scorers. High scorers were relationship motivated and low scorers were task motivated. Situational variables were characterized through the assessment of three factors, leader-member relations, task structure, and position

power. This approach further supported the need to consider the situation in determining leadership needs (Fiedler & Chemers, 1974).

Path-Goal Theory

Research on the path-goal theory describes the manner in which a leader's behavior can positively influence the subordinate's motivation and job satisfaction. This theory suggests that successful leaders link followers to the rewards that are available to them and clarify the path to those rewards (Bass, 1990; Filley, House & Kerr, 1976). Leaders are responsible for clarifying the goals of the organization to the followers. The goal clarification process helps employees understand the organization by making the goals explicit. This process improves the psychological state of the followers, consequently, job satisfaction results.

The path-goal theory differs from the situational and contingency approaches in that it emphasizes the relationship between the leader and the subordinate and the environment. In order to provide motivation, the leader must use a style that best fits the needs of the employee. Theory suggests that this may be accomplished by increasing the number or kinds of rewards in the work situation. This

orientation draws on the expectancy theory of motivation and includes different leadership behaviors such as directive, supportive, participative, and achievement-oriented leadership, and subordinate and task characteristics. The path-goal theory has helped to explain how task and employee characteristics affect leadership and impact performance (Bass, 1990; Filley et al., 1976; Northouse, 1997).

Another theory is the multiple-linkage model by Yukl (1971). This theory describes the leader's initiation of structure and relationship to followers. It proposes that in a given situation, the subordinate's satisfaction is linked to the leader's concern for the follower's welfare. Also, it differentiates leadership requirements for both short and long term effectiveness (Bass, 1990).

Leader-Member Exchange Theory

The leader-member exchange theory (LMX) includes the dyadic relationship between leaders and their followers and supports mutual influence and obligation between them (House, 1997). Early studies of the exchange theory, initially called the vertical dyad linkage theory, focused on vertical relationships that the leader formed with their followers. These included in-groups and out-groups. The

in-group consisted of those who maintained dedicated behavior and was involved in expanded responsibilities and greater levels of communication; the out-group would only do what was required of them. Later studies went beyond these group characteristics to investigate their relationship to organizational effectiveness or how the quality of leader-member exchanges resulted in positive outcomes. Currently, attention is being given to determine how these exchanges can be used to assist in the making of a leader. The leader-member exchange theory describes and prescribes leadership, with the dyadic relationship being the central concept (Northouse, 1997). It is maintained that this relationship results in positive organizational outcomes such as lower turnover, increased productivity, employee satisfaction and commitment (House, 1997).

Team Leadership Theory

Team leadership theory involves the leadership functions that are necessary for group effectiveness such as monitoring versus taking action. Focus is on internal versus external group issues. Within this framework, leadership is viewed as an ongoing process, with a continual goal of meeting the needs of the team. Research in this area has identified criteria that impact group

effectiveness and include: clear and elevating goals, results-driven structure, competent team members, unified commitment, collaborative climate, standards of excellence, external support and recognition, and principled leadership. Bass (1990) reported that research on leader-group relationships include group structure and the members' relative positioning, along with the effects of reaching group goals. This research evolved to studies of leader-follower relationships, focusing on the growth and development of followers on an individual basis.

Transformational Leadership Evolution

Burns (1978) associates the roles of leaders and followers from the perspective that leaders and followers may have started as separate but related, and become fused as "power bases [that] are linked not as counterweights but as mutual support for common purpose" (p. 20). Yukl (1989) observed that different uses of power demonstrated by the leader affects the behavior of followers.

Other theories also related to humanistic research include theories of McGregor (1966), Argyris (1957), Likert (1967), Blake and Mouton (1986), Maslow (1954), and Hersey and Blanchard (1969). They focus on the employee's growth and development, maintaining that the leader should create

an environment in which employees can realize their potential and contribute to accomplishing organizational goals (Bass, 1990).

Burns (1978) observed that although extensive research has been conducted on transactional leadership, not all leadership was based on transactions between the manager and subordinate. He recognized that transformational leaders provide strength in the area of planning and strategy and motivate their employees in a charismatic manner.

In the late 1800s, Max Weber (1978) related charisma to leadership. He identified three types of authority: traditional, rational-legal, and charismatic. Traditional authority was defined as that authority that is legitimated on the basis of appeals to tradition. Rational-legal authority is based upon adherence to a codified legal structure. Charismatic authority is based upon the personal attributes of the leader and the leaders' ability to achieve the goals of the followers. He described charisma as a quality of an individual's personality, which distinguishes them from others. These leadership qualities are identified by their followers (Bass, 1985). Building on Weber's model, Dow (1969) theorized that Weber is too idealistic and describes charisma more simply. He stated

that charisma is not related to personality traits, but a routine observable phenomenon between leader and follower (Bass, 1985).

According to House (1977) charisma is related to the effects of leader on follower including trust, obedience, and emulation. House explained that charismatic leaders have a strong desire to influence others.

In 1987, Bradley studied the structure of charisma in communal groups. He maintained that charisma is a social relationship between leaders and their followers. He supported the theory that the charismatic social organization evolves to meet the needs of group members within the situational context (McDaniel, 1993).

Conger and Kanungo (1987) maintain that charisma is an attribute of the leader, which is identified by followers. In this model contextual factors are influential in the development of charismatic leadership. McDaniel (1993) describes two essential characteristics: (a) commonality among leaders to include ability, interest and personal traits; and (b) leaders have strong referent power; that is, followers are compelled to identify with the leaders (Bass, 1985).

A leadership continuum ranges from laissez-faire to transactional to transformational. Nonleadership utilizes

laissez-faire or nontransactional methods. The transactional leader encompasses most leadership strategies that involve an exchange between the leader and follower. The transactional leader relies on contingent rewards and constructive transactions and manages by exception, active and passive corrective transactions. Bass (1985) reported that the transformational leader motivates followers by raising their consciousness levels about goals, getting them to transcend their own interests for the sake of the team, and moving them to address higher level needs. The transformational leader provides charisma and idealized influence, inspirational motivation, intellectual stimulation, and individual consideration (Bass; Northouse, 1997).

Transformational Leadership Theory

Transformational leadership theory is based on Max Weber's (1978) theory regarding the formal organization and its legitimate hierarchical power structure. Hierarchical positions are assigned responsibilities and powers to fulfill those responsibilities (Blau & Scott, 1962) and Weber (1978) refers to this structure, as bureaucracy. Bureaucracy includes positions that are organized into an authority structure with rules and regulations to govern

action. The transformational leader, within this authority structure, must transform positional power into legitimate power and authority, rather than leading with coercion.

According to Weber (1978) three methods of transforming power into legitimate authority are traditional, rational-legal, and charismatic. Traditional legitimization occurs when authority is exercised based on history and custom. For example, in a royalty environment the king reigns with an authority that is traditionally handed down through generations. Rational legal authority is exercised within legal statutes. This type of authority is found within hierarchical positions of an organization. In this case, the office rather than the officeholder is the holder of the authority. Alternatively, the charismatic leader inspires followers voluntarily to adhere to the leader's authority.

Burns (1978) described the relationship between leader and follower as leaders and followers working in collaboration to achieve higher levels of motivation; therefore, their motives become identical. This process raises the level of aspirations and improves output. Also, he noted the manner in which charismatic leaders utilize conflict as a positive force by exploiting tension to achieve balance and equality (McDaniel, 1993).

Bass (1985) built on Burns' theory, transferring his concepts into the organizational environment. He identified three factors of transformational leadership: (a) charisma; (b) individualized consideration; and (c) intellectual stimulation. The first factor, charisma, is a characteristic found in leaders who create strong emotional reactions and arouse follower motivation and compliance. For Bass, the transformational leader combines charisma with intellectual stimulation and individual consideration, to organize subordinates and achieve the goals of the organization. The second factor, individualized consideration, describes the leader as demonstrating respect for followers by maintaining good communications levels, delegating projects, and recognizing the employees' needs. Also, the leader may demonstrate individualized consideration by acting in a mentoring capacity. The third factor, intellectual stimulation, is developed through encouraging innovation and problem solving activities. This process allows for proactive thinking.

Bass and Avolio's Augmentation Model

According to Bass and Avolio (1990) transactional leadership is the very structure of leadership that

provides the basic tools required for effective management, plus the communication of directives to accomplish these goals. Bass and Avolio (1990) suggest that transactional leadership is directed towards maintaining the status quo. It contains three dimensions: (a) contingent reward, an exchange process between leader and follower which involves providing subordinates rewards for effort and recognizing accomplishments; (b) management by exception (active), refers to leadership behavior that is directed at monitoring employees for deviation from normal performance, then takes action to bring productivity back to standard levels; (c) management by exception (passive), leadership intervention is taken only when standards are not met (Bass & Avolio, 1990). Bass & Avolio's (1995, 2000) studies indicate that contingent rewards are positively correlated with transformational leadership variables such as extra effort, effectiveness, and satisfaction. Management-by-exception (active) is not significantly correlated with extra effort or satisfaction. Further, this research links management-by-exception (passive) along with Laissez-faire leadership, and indicates that both are negatively correlated with the transformational leadership variables.

The Augmentation Model suggests that effective organizational functioning will utilize transactional

behavior in accomplishing basic goals and objectives. However, if the company seeks to reach beyond basic goals and objectives, transactional leadership should be supplemented with transformational leadership (Bass & Avolio, 1990).

Job Satisfaction Studies

Bass (1990) suggests that a favorable association between employees and supervisors is one factor that contributes to employees' satisfaction. Studies further indicate that not only do leaders affect subordinate satisfaction and performance, but also can have an effect on organizational success.

According to Katz and Kahn (1966) structure also impacts job satisfaction. They found that subordinate/followers are constrained by technology, rules, and job requirements. Consequently, the capabilities of the leader become limited. Wofford (1971) found that unstructured as opposed to structured tasks result in more achievement orientated tasks. Filley, House, and Kerr's (1976) research indicates that task structure affected the relationship between participation and performance and between participation and the attitudes of subordinates. Participative leadership was constrained in a highly task

structured environment. However, when tasks were unstructured, the effects of participative leadership was consistently positive (Bass, 1990).

Bass (1990) indicates that role clarity is another influential factor in job satisfaction. It was found that people, in particularly those that have a need for structure, prefer to work in clear settings. Another finding of job satisfaction and its relation to role clarity is that students were more productive with directive teachers when role clarity was low - not high as one might believe. Siegall and Cummings (1986) endorse this construct with their stand that initially if a subordinate's role is ambiguous and role clarification and directions follow, satisfaction with the supervisor is enhanced (Bass, 1990).

Other factors influencing job satisfaction include autonomy and discretionary opportunities and routineness versus variations in tasks. Bass, Valenzi et al. (1974) found that if leaders were perceived as being delegative and negotiative, their subordinates felt as though they possessed more discretionary opportunities. And with regards to routineness versus variations in tasks, although management-by-exception can be viewed with a negative connotation, Griffin (1980) supports a slightly different

approach. His studies indicate that employees in low-scope jobs prefer a low maintenance routine by their supervisor, that is, they enjoy work autonomy.

Gruneberg (1979) suggests that overall job satisfaction is determined by subordinates' needs, values, and expectations of their job. For example, some employees have a need for stability, while others have a need for achievement.

Transformational Leadership and Job Satisfaction

This section reviews studies investigating the relationships between transformational leadership and job satisfaction in non-social service contexts. Russell (1996), in a study of workers in a financial institution and a medical center, found that transformational leadership was negatively related to employee intention to terminate employment at that particular institution. Similarly, the higher the level of contingent reward by the manager, the lower the intention to leave. However, intent to leave was positively related to passive management by exception. Data from this study suggests that management style influences employee turnover.

In studies conducted by Bommer (1995) 723 employees were surveyed in five manufacturing firms using the MLQ of

Bass and Avolio (1990). Indicators of employee maturity, cynicism, sensitivity to expression, behavior changeability, self-managing, and shared values, were conceived as substitutes for transformational leadership, and the outcome variables of trust, job satisfaction, commitment, in-role job performance, overall performance, altruism, civic virtue, courtesy, and sportsmanship.

Although the relationships were less strong than predicted, transformational leadership accounted for a significant portion of the variance in the outcome variables. The substitute variables did not moderate the relationships between transformational leadership and employee outcomes. Rather, they added to the variance accounted for by transformational leadership.

Kessler (1993) examined the relationship between transformational leadership and job satisfaction in a research environment. Results of Kessler's study indicate that transformational leadership behaviors were particularly adaptable to a research environment. This was attributed to transformational leaders facilitating and promoting the intellectual stimulation of their subordinates. Transformational leaders were perceived by their followers as innovators who frequently take alternative courses of action that justifiably break away

from established concepts and procedures. In contrast, transactional leaders were less likely to stimulate subordinates' feelings associated with overall job satisfaction, work-environment satisfaction, or satisfaction with supervision. Also, the findings confirmed that while transactional leadership provides some basis for effective leadership, even greater satisfaction is possible when transactional and transformational leadership attributes are combined.

Butler, Cantrell, and Flick (1999) examined relationships among transformational leadership behaviors, upward trust, and job satisfaction. Research was conducted at a large manufacturing firm in the southeastern US with a sample of 79 members of self-directed work teams. Team members' trust in the leader mediated the relationships between four of six leadership behaviors and team members' satisfaction with their work. All six leadership behaviors moderated the relationship between team members' trust in their leader and satisfaction with their work. Results of the study suggest that transformational leadership behaviors affect employee satisfaction by increasing trust in their leaders.

Deluga (1991) surveyed 157 advanced US Navy officers using the MLQ and the Profiles of Organizational Influence

Strategies. Transformational leadership and subordinate use of a rational approach were the behaviors most strongly associated with perceived higher levels of leader effectiveness and subordinate satisfaction with the leader.

Data within this section suggests that in non-social service occupations, the relationship between transformational leadership and job satisfaction and satisfaction with leadership continues to be valid. Relationships between transformational leadership and satisfaction indicators are similar in manufacturing, military, and financial organizations. Most of the literature on transformational leadership has been conducted in social service organizations, such as schools, hospitals, and social service agencies. The data in this section suggests that the effects of transformational leadership can be generalized to non-social service environments, such as aerospace manufacturing.

Conclusion

This review of literature provides a view of the evolution of leadership studies. Previous research focused successively on a range of variables as relevant to leadership which included the trait approach, style approach, situational approach, contingency theory, path-

goal theory, leader-member exchange, and team leadership. Most recently, transformational leadership delineates a range of behaviors from nonleadership (laissez-faire) to transactional leadership to transformational leadership. Thus research has gone from simply studying the personality of the leader and their behavior, to including situational factors, and finally relationship factors. The current research focus goes beyond the transactional leadership approach, which characterizes most previous leadership models that focus on exchanges between leaders and followers, and brings forth the addition of the New Leadership paradigm or the transformational approach, which encompasses the transformation of individuals. This focus goes beyond the assessment and fulfillment of employee needs and attempts to be more attentive to the human elements of interaction.

This review also provides a composite of research from various sources that determine if there is a relationship between perceived leadership behavior and job satisfaction. Findings bring forth earlier research as well as present-day studies on leadership and their relation to job satisfaction. The literature reveals a transition from a transactional, or status quo type of leadership to a transformational, or higher level leadership style.

Studies lean towards a leadership with charisma, individualized consideration, and intellectual stimulation. Kessler (1993) reported that although transactional leadership was related to job satisfaction, transformational leadership was even more positively correlated with it. In other words, leaders who advocate a vision, provide for personal growth and development, and foster creative thinking tend to foster job satisfaction, if they also provide transactional leadership in the form of contingent rewards. This relationship between transformational leadership and employee satisfaction seems to transcend industrial sectors and can be applied to manufacturing, military, and financial institutions as well as social service organizations. This study will provide information regarding the relationship between transactional and transformational leadership and job satisfaction variables.

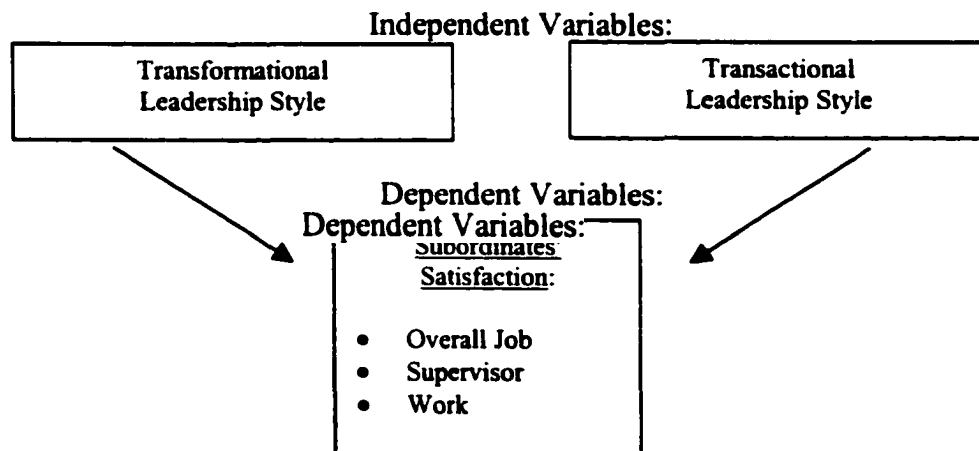
CHAPTER III

METHODOLOGY

Introduction

The purpose of this study is to analyze the relationships between leadership behaviors and job satisfaction among aerospace engineers. This chapter describes the research methods and includes the following sections: research questions; hypotheses; population sample; limitations of the study; the instruments; survey procedures; and data analysis. The independent variables are transactional leadership and transformational leadership. The three dependent variables are: (1) overall job satisfaction; (2) satisfaction with supervision; and (3) work satisfaction. A graphical depiction of the variables and interactions appears in Figure 1.

Figure 1: Variables and Interactions



Research Questions

Three research questions guide the study:

1. What are the relationships between transformational and transactional leadership and subordinates' overall job satisfaction in an aerospace environment?
2. What are the relationships between transformational and transactional leadership and subordinates' satisfaction with the supervisor in an aerospace environment?
3. What are the relationships between transformational and transactional leadership and subordinates' satisfaction with the work in an aerospace environment.

Hypotheses

Six hypotheses are presented in both the null and directional formats. The relationships between two independent variables, perceived transactional and transformational leadership behaviors, and three dependent variables, overall job satisfaction, satisfaction with supervisors, and work satisfaction are analyzed.

H°_1 : There is a negative correlation, or no correlation, between subordinates' perception of their

supervisors' transactional leadership and subordinates' overall job satisfaction in an aerospace environment.

H₁: There is a positive correlation between subordinates' perception of their supervisors' transactional leadership and subordinates' overall job satisfaction in an aerospace environment.

H^o₂: There is a negative correlation, or no correlation, between subordinates' perception of their supervisors' transactional leadership and subordinates' satisfaction with the supervisor in an aerospace environment.

H₂: There is a positive correlation between subordinates' perception of their supervisors' transactional leadership and subordinates' satisfaction with the supervisor in an aerospace environment.

H^o₃: There is a negative correlation, or no correlation, between subordinates' perception of their supervisors' transactional leadership behavior and subordinates' satisfaction with the work in an aerospace environment.

H₃: There is a positive correlation between subordinates' perception of their supervisors' transactional leadership and subordinates' satisfaction with the work in an aerospace environment.

H^o₄: There is a negative correlation, or no correlation, between subordinates' perception of their supervisors' transformational leadership and subordinates' overall job satisfaction in an aerospace environment.

H₄: There is a positive correlation between subordinates' perception of their supervisors' transformational leadership and subordinates' overall job satisfaction in an aerospace environment.

H^o₅: There is a negative correlation, or no correlation, between subordinates' perception of their supervisors' transformational leadership and subordinates' satisfaction with the supervisor in an aerospace environment.

H₅: There is a positive correlation between subordinates' perception of their supervisors' transformational leadership and subordinates' satisfaction with the supervisor in an aerospace environment.

H^o₆: There is a negative correlation, or no correlation, between subordinates' perception of their supervisors' transformational leadership behavior and subordinates' satisfaction with the work in an aerospace environment.

H₆: There is a positive correlation between subordinates' perception of their supervisors' transformational leadership and subordinates' satisfaction with the work in an aerospace environment.

Population and Sample

The population for this study consists of technical staff employed by an aerospace company. Subjects for this study include a convenience sample of 120 employees, comprised primarily of engineers, or employees having engineering-related responsibilities requiring engineering experience and/or an engineering degree. For example, some participants are engineers assigned to the design or testing of high-tech aeronautical parts, while other participants for this survey are involved with contracts and change requests, which also require engineering disciplines.

Prospective study participants were recruited from a list of employees with background information such as name, job titles, and job description obtained from the Chief Engineer. This list was reviewed and sorted according to supervisory and non-supervisory positions to ensure that the surveys were distributed solely to non-supervisors. The researcher contacted

eligible participants after receiving cooperation from Management. They were asked to attend small group meetings where the survey packet was distributed. Those willing to participate but unable to attend the meetings were mailed the research packet.

The sample size was determined using a power analysis based upon the work of Cohen (1988). For a correlational analysis with an alpha level of .05 and a medium effect size, 85 subjects are needed for a power of .80. In application to this study, the sample size ($N = 120$) was more than adequate for a medium effect size.

Scientific inquiry requires the proposal of a theory and empirically testing the theory. The theory remains false until proven true, beyond a reasonable doubt, or a significant level; and the null hypothesis, which contradicts the theory, is true until proven false. In testing a theory, factors such as the research design, measurement tools, and sample size are considered. These factors affect the likelihood that findings are convincing beyond a reasonable doubt; or the power of the trial (Kraemer & Thiemann, 1987). The purpose of the power analysis is to determine the power or strength of the design before the study begins.

Limitations

A great deal of research has been conducted on leadership and its relation to job satisfaction. However, to date, no data are available on transformational/transactional leadership behavior and job satisfaction in an aerospace environment.

With regard to this study, data gathering was limited to a single organization. Although this was intended, it should be known that the organizational culture of an aerospace corporation might differ from that of other companies and, therefore, findings may not generalize to a general population. Since this study utilized only volunteer subjects on an availability basis it is possible that the findings may not generalize to a larger population. Possible limitations of this study also include volunteer bias, sample selection, subject group size, and geographic location. Findings may also be due to factors unaccounted for. Since variables will not be directly manipulated, causality is not implied, and results may be viewed as exploratory in nature. Extraneous variables such as test reactivity and accuracy of self-reporting, might be present and unaccounted for.

Instruments

Instruments to collect data for this study include the Multi-factor Leadership Questionnaire, Form 5x-Short (MLQ-5) and the Job Descriptive Index (JDI). The MLQ-5 measures the transactional and transformational leadership behavior variables. The JDI measures the dependent variables, which include overall job satisfaction, supervisor satisfaction, and work satisfaction.

Multi-factor Leadership Questionnaire

The MLQ-5 was developed by Bass (1985) and refined by Bass and Avolio (1990). The revised version improved upon the previous MLQ forms by expanding their dimensions, and providing a concise computerized feedback form that could be utilized more effectively by/for individuals, teams, and organizational development (Clark, 1992).

When comparing the different types of instruments currently available for leadership assessment, the MLQ-5 generates more data for extensive and comprehensive analysis (Goodstein, 1999). The MLQ-5 is comprised of 45 items rated on a five-point scale on frequency of occurrence. This instrument measures seven

factors of leadership in relation to two leadership styles: transactional and transformational.

The three transactional leadership dimensions include Contingent Reward and Management-by-Exception (active and passive). Contingent Rewards are rewards based on performance, in meeting objectives. The leader's expectations are associated with the rewards. Management-by-Exception is based on exceptions. The leader becomes involved when performance goals are not met. According to Bass (1997) active management-by-exception means that managers monitor employees' performance for deviation from performance standards and provide prompt feedback. Passive management-by-exception refers to a management style that intervenes when performance standards are not met. Bass and Avolio's (1995, 2000) studies indicate that contingent rewards are positively correlated with outcomes related to transformational leadership in the MLQ such as extra effort, effectiveness, and satisfaction with leadership. Management-by-exception (active) is not significantly correlated to extra effort or satisfaction. Further, this research links both management-by-exception (passive) and Laissez-faire leadership, negatively with the transformational leadership variables.

The transformational dimension includes four factors: Charisma, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration. Charisma is a relationship found between leader and follower and includes the leader's attributes and perceptions of the follower. Inspirational Motivation includes reaching organizational objectives by shared goals and communicating a vision. Intellectual Stimulation engages followers to think creatively in problem solving and reasoning (Clark, 1992). The last transformational dimension is Individual Consideration. This is a dimension whereby the followers are mentored and motivated individually.

Internal consistency reliability for the MLQ was assessed by coefficient alphas in several studies. For example, Hater and Bass (1988) reported internal consistency reliability data from a study of 251 business leaders and Yammarino and Bass (1990) reported data from a sample of 169 Naval officers and senior managers of several large corporations. Coefficient alphas ranged from .60 and .92, with a median of .86 for transformational leadership and between .62 and .93, with the median of .83 for transactional leadership. Bass and Avolio (1990) reported test-retest reliability estimates from a study of 33 middle and upper level managers in a Fortune 500 company

that range from .42 to .79, with a median of .66 for transactional leadership, and a range from .44 to .74, with a median of .56. The results indicate sufficient internal consistency reliability and stability over time.

Bass and Avolio (1995) assessed the MLQ-5 for factorial, concurrent, and discriminant validity. Confirmatory Factor Analysis was used to demonstrate factorial validity. This confirmatory analysis tests for convergent and discriminant validity. Samples used for the confirmatory analysis were collected from several independent researchers such as for doctoral dissertation purposes. Several fit criteria, including chi-square, adjusted goodness of fit index AGFI, and RMSR were used for the analysis with a number of 1,394 resulting from leastwise deletion of a total sample of 2080. The goodness of fit index (GFI) resulted in a coefficient of .91 for the full model (Bass & Avolio, 1995). Previous findings from preliminary convergent and discriminant tests by Howell and Avolio in 1993, were replicated to examine factor loadings of indicators on latent variables, compute a variable's composite scale reliability (internal consistency), and examine the average variance found by the construct variables from indicators (average cut-off variance of .60 is recommended). Findings

showed that average variance extracted for each of the constructs exceeded the criterion cut-off of .50, except MBEA which was .46. Composite scale reliability indices showed that all constructs met minimum cut-off requirements of .70 (MBEA was .76). Questions 6, 18, 22, and 44 were below the .70 cut-off but were retained since overall scales met reliability criteria (Bass & Avolio, 1995).

Several studies assessed the discriminant validity of the MLQ-5. Hater and Bass (1988) reported that managers who were rated high on their performance evaluations also scored higher on transformational leadership than managers who were not rated as highly. Bass and Yammarino (1991) reported similar findings on the relationship between early promotion and transformational leadership while in Navy shipboard officers. Avolio et al. (1988), in a semester-long business simulation exercise of 27 teams of MBA students, found that team success correlated positively with transformational leadership, while it was not correlated with management-by-exception, and was negatively correlated with laissez-faire leadership. Onnen (1987) reported positive correlations between transformational leadership and church attendance and membership growth in a sample of Methodist ministers.

In summary, the MLQ-5 has demonstrated sufficient evidence of factorial, concurrent, discriminant, and construct validity. Its major weakness is that self-reported behavior tends to be influenced by the social acceptability of responses (Bass & Avolio, 1990).

Job Descriptive Index

The JDI has been in use for over 30 years (Smith, Kendall, & Hulin, 1969) and was modified in 1985 by JDI Research Group. This instrument consists of 72 items and measures five aspects of employee satisfaction: work, pay, promotion, supervision, co-workers, and overall satisfaction (Kihm, 1997). For each construct, the JDI presents a list of adjectives and asks the respondent to indicate whether it describes the aspect of the job or not using three alternatives: yes, no, and ?. For work on present job, for example, such adjectives as fascinating, routine, satisfying, and boring are offered. Positive responses to positive adjectives, such as fascinating, are scored "3," "?s" are scored 1, and negative responses are scored 0. Negative responses to negative adjectives, such as boring are scored "3," "?s" are scored 1, and positive responses are scored 0.

Therefore, the higher the score, the greater the satisfaction with aspects of the job.

The Work on Present Job Scale contains 18 adjectives. Therefore, it has a theoretical range from zero to 54, with zero indicating low satisfaction and 54 indicating high satisfaction. The Supervision Scale also has 18 items and the same theoretical range. However, the Supervision Scale includes short phrases, such as, "hard to please," along with adjectives, such as "annoying and stubborn." The Job in General Scale, containing 18 items and the same theoretical range, is similar to the Supervision Scale, in that it contains both adjectives, such as "pleasant, bad, and ideal," and phrases such as, "waste of time."

Survey Procedures

The researcher combined the MLQ-5 and the JDI into a single survey instrument along with the following demographic background questions: gender, age, racial/ethnic background, highest degree, occupational category, years of engineering experience, and years at present job. A copy of the instrument is in Appendix A. The survey instrument is accompanied with a cover letter that explains the purposes of the research, the

sponsorship, the rights of participants, and the number to call if they have any questions about the study. A copy of the cover letter is in Appendix B.

The researcher received verbal approval from management at the aerospace corporation. With their cooperation, the researcher set up several small group meetings in which the administration of the surveys took place. In the meetings, each potential participant was handed a survey instrument, a cover letter, an unmarked envelope and free pen with which to answer the survey instrument. The researcher told the participants that the pen was a small token of appreciation for taking their time to answer the survey instrument. The researcher also explained the purposes of the study and advised participants of their rights of confidentiality and refusal to participate without fear of retribution. The researcher pointed out that their participation would help understand the kind of leadership that aerospace engineers experience and appreciate.

Participants were instructed that each survey instrument was to be answered independently and anonymously in order to preserve the confidentiality of responses. Upon completion of the surveys, respondents were instructed to place them in the

unmarked envelopes, seal them and place them in a box at the front of the room in which the administration took place.

Respondents who were unable to attend meetings, were handed the cover letter and survey questionnaire with a stamped, self-addressed envelope and asked to complete it at their first opportunity and mail it to the researcher in the envelope provided.

Data Analysis

Descriptive statistics, including means, standard deviations, and frequency distributions were used to present sample characteristics. Correlational analysis were used to test the six hypotheses.

Correlation determines the degree in which two variables vary together, such as with the study of individual differences and job performance. The Pearson product-moment correlation coefficient or "r" is the most commonly used to measure the association of two quantitative variables characterized by a linear relationship (positive or negative). It determines how well bivariate data points stay within the assumed straight line of best fit (Minium, King, & Bear, 1993). This statistic will

examine the relationship between the leadership styles and measures of satisfaction.

Conclusion

The purpose of this study is to analyze the relationships between leadership behaviors and job satisfaction among aerospace engineers. The population for this study includes engineers and technical staff employed by an aerospace company; subjects include a convenience sample of 120 employees. Although using one organization for the study of these variables yielded limited information, findings provided useful data that can augment the research conducted in related organizational settings.

CHAPTER IV

ANALYSIS AND PRESENTATION OF FINDINGS

Introduction

This chapter presents the statistical analysis of the data collected for this study and provides related interpretations. The chapter is comprised of two major sections: 1) preliminary analysis, and 2) hypothesis testing. The first section contains descriptive statistics on the sample, and the second section presents testing of the hypotheses.

Preliminary Analyses

Descriptive statistics on the occupational background variables are presented in Table 1. Participants of this study are technical staff, primarily engineers employed by an aerospace company. The sample consisted of 97 respondents - (78.4%) engineers, and (21.6%) technical support staff. Most (57.7%) had between 11 and 20 years of experience in aerospace, with more than a quarter (26.8%) having more than 20 years of experience. Only 15.5% had 10 or fewer years of experience. Nearly four-fifths (78.3%) had between 2 and 10 years of experience in their present position; 13.4% had more than 10

years of experience in the present position, and 8.2% had fewer than two years of experience.

Table 1:

Frequencies and Distributions on Occupational Variables (N = 97)

Variable	n	%
Present Job Title		
Engineer	76	78.4
Technical Support	21	21.6
Years of Aerospace Experience		
< 6	6	6.2
6-10	9	9.3
11-15	43	44.3
16-20	13	13.4
21+	26	26.8
Years in Present Position		
< 2	8	8.2
2-3	21	21.6
4-5	28	28.9
6-10	27	27.8
11-15	7	7.2
16-20	2	2.1
21+	4	4.1

Hypothesis Testing

The hypotheses of the study were tested using a series of Pearson correlations. The first three hypotheses specified

positive correlations between supervisors' transactional leadership and job satisfaction. The dependent variable for Hypothesis 1 was subordinates' satisfaction with the job in general, for Hypothesis 2 was subordinates' satisfaction with supervision, and for Hypothesis 3 was subordinates' satisfaction with work on present job. The correlation coefficients used in hypothesis testing are presented in Table 2.

Table 2:

Correlations of Transactional Leadership Variables with
Satisfaction Variables (N = 97)

Transactional Leadership	Job Satisfaction		
	General	Supervision	Work
Contingent Reward	.15	.53**	.06
Management by Exception -- Passive	-.10	-.42**	-.23*
Management by Exception -- Active	-.01	-.06	-.03

* $p < .05$. ** $p < .01$.

Hypothesis 1, which stated that there would be a positive correlation between subordinates' perception of their supervisors' transactional leadership and subordinates' overall job satisfaction in an aerospace environment, was not supported by the findings. No significant correlations were found between the three transactional leadership variables (Contingent Reward,

Management by Exception -- Passive, and Management by Exception - Active) and general job satisfaction.

Hypothesis 2, which stated that there would be a positive correlation between subordinates' perception of their supervisors' transactional leadership and subordinates' satisfaction with the supervisor in an aerospace environment, was supported for contingent reward ($r = .53, p < .01$). The hypothesis was not supported for management by exception, either active or passive. The data indicate a negative correlation ($r = -.42, p < .01$) between passive management by exception and satisfaction with supervisor. That is, satisfaction with supervision increases with the increasing use of contingent reward's and decreases with the increasing use of passive management by exception; there is no correlation between active management by exception and satisfaction with supervision.

Hypothesis 3, which states that there is a positive correlation between subordinates' perception of their supervisors' transactional leadership and subordinates' satisfaction with work in an aerospace environment, was not supported by the findings. No significant correlations were found between any of the transactional leadership variables and satisfaction with work.

Table 3 contains the correlations between the three transformational variables (intellectual stimulation, inspirational motivation, and individual consideration) and the three job satisfaction variables (subordinates' satisfaction with the job in general, satisfaction with supervision, and satisfaction with work). These correlations are used to test Hypotheses 4, 5, and 6.

Table 3:

Correlations of Transformational Leadership Variables with Satisfaction Variables (N = 97)

Transformational Leadership	Job Satisfaction		
	General	Supervision	Work
Intellectual stimulation	.22*	.42**	.23*
Inspirational motivation	.16	.52**	.16
Individual consideration	.03	.50**	.24*

* $p < .05$. ** $p < .01$.

Hypothesis 4, which stated that there would be a positive correlation between subordinates' perception of their supervisors' transformational leadership and subordinates' overall job satisfaction in an aerospace environment, was supported for intellectual stimulation ($r = .22$, $p < .05$). It was not supported for inspirational motivation or individual consideration.

Hypothesis 5, which stated that there would be a positive correlation between subordinates' perception of their supervisors' transformational leadership and subordinates' satisfaction with supervision in an aerospace environment, was supported for all three transformational leadership variables: intellectual stimulation ($r = .42, p < .05$); inspirational motivation ($r = .52, p < .01$); and individual consideration ($r = .50, p < .01$).

Hypothesis 6, which stated that there would be a positive correlation between subordinates' perception of their supervisors' transformational leadership and subordinates' satisfaction with work in an aerospace environment, was supported for intellectual stimulation ($r = .23, p < .05$) and for individual consideration ($r = .24, p < .05$). Hypothesis 6 was not supported for inspirational motivation.

Conclusion

The major findings of this study were as follows:

- (a) transactional leadership was not positively related to job satisfaction with the following exception: contingent reward was significantly and positively related to satisfaction with supervision;
- (b) transformational leadership was related to job

satisfaction in the following ways: satisfaction with the job in general was weakly correlated ($p < .05$) with intellectual stimulation; satisfaction with supervision was moderately-to-strongly correlated ($p < .01$) with all three variables of transformational leadership; satisfaction with work was weakly related ($p < .05$) to intellectual stimulation and individual consideration.

Results indicate that leadership in the aerospace industry generally follows similar leadership trends as in other industries - whether product or service, technical or traditional. The findings are discussed in Chapter V.

CHAPTER V

SUMMARY AND CONCLUSIONS

The concluding chapter consists of four sections: a summary of the study, discussion of the findings, implications for practice, and recommendations for future research.

Summary of the Study

The purpose of this research was to conduct a study of Bass and Avolio's (1990) Augmentation Model of Transactional and Transformational leadership and its relation to the job satisfaction of subordinates in an aerospace environment. The concepts of transformational and transactional leadership are thoroughly researched. A review of the literature indicated that leaders who advocate a vision, provide for personal growth and development, and foster creative thinking tend to foster job satisfaction if they also provide transactional leadership in the form of contingent rewards. The relationship between transformational leadership and employee satisfaction seems to transcend industrial sectors and can be applied to manufacturing, military, and financial institutions as well as social service organizations. The research on the relationship between leadership styles and job satisfaction have tended to be

conducted primarily in non-manufacturing work environments, such as schools, hospitals, social service agencies, banks, and retail sales organizations. Fewer studies have been conducted in organizations that produce products, such as the aerospace industry. The findings from this study can be used to augment the research conducted in production industries.

The hypotheses of the study, briefly stated, suggest that there will be positive relationships between transactional leadership and job satisfaction and between transformational leadership and job satisfaction. The transformational leadership was assessed using the MLQ of Bass and Avolio (2000), which posits a three factor construct of transactional leadership (contingent rewards, passive management by exception, and active management by exception) and a three factor construct of transformational leadership (intellectual stimulation, inspirational motivation, and individual consideration). Job satisfaction was assessed using three subscales of the JDI—satisfaction with the job in general, satisfaction with supervision, and satisfaction with work.

In order to test the hypotheses of the study, 97 engineers and members of the engineering technical support team working for a aerospace company who volunteered to participate in the

study were assessed utilizing two instruments - the MLQ and the JDI. The major findings of the study were: (a) transactional leadership was not positively related to job satisfaction with the following exception: contingent reward was significantly and positively related to satisfaction with supervision;

(b) transformational leadership was related to job satisfaction in the following ways: satisfaction with the job in general was weakly correlated with intellectual stimulation; satisfaction with supervision was moderately-to-strongly correlated with all three variables of transformational leadership; satisfaction with work was weakly related to intellectual stimulation and individual consideration.

Discussion

The findings of the study are in congruence with prior studies that have suggested that the transactional leadership factor of contingent reward is positively related to job satisfaction, whereas management by exception is either unrelated or negatively related to job satisfaction. For example, Russell (1996), in a study of workers in a financial institution and a medical center, found that contingent reward was negatively related to workers' intention to leave and management by exception was positively related to workers

intention to leave. Kessler (1993) found mixed and weak relationships between transactional leadership and job satisfaction, but much stronger positive relationships between transformational leadership and job satisfaction.

The research on transformational leadership and job satisfaction remains consistent. Butler et al. (1999), Bommer (1995), Deluga (1991), Kessler (1993), and Russell (1996) found positive relationships between transformational leadership and various indicators of job satisfaction in a variety of work environments.

Why does transformational leadership lead to greater job satisfaction? In this study, the data indicated that leadership style did not strongly influence overall job satisfaction; it seemed to specifically influence satisfaction with supervision, with relatively small overlaps with satisfaction with work and general job satisfaction.

The theoretical literature (Bass & Avolio, 1990; Katz & Kahn, 1966) has suggested that leadership style is one of several influences on job satisfaction, other factors being compensation and remuneration, nature of the work, and role relationships within the workplace. According to Bass (1990), transformational leadership provides workers with a clear sense

of mission, how their work fits with the overall goals of the organization, and a sense of commitment to those goals. In addition, workers are made to feel that they are an important part of the organization and they are given sufficient autonomy to achieve their goals.

Transformational managers provide leadership and direction to their staff (Bass, 1990). They are also able to motivate their subordinates in an effort to achieve the goals of the organization. In so doing, they are also able to generate an esprit de corps. Job satisfaction is increased because workers feel that they are part of a team that is directed toward the achievement of organizational goals. They feel that they are valued by the organization and that the leadership cares about them.

Contingent reward is an important influence on job satisfaction (Russell, 1996). This aspect of transactional leadership is important because it provides workers with a sense that they are rewarded for good effort. It is an important factor in the exchange process between leadership and followership (Blau & Scott, 1962). Contingent reward gives workers a sense of being treated justly and fairly by their

supervisors. It provides them a sense of self-worth and gives them recognition within the organization.

Passive management by exception was found in this study to be negatively related to job satisfaction. Conceptually, a passive manager is one who fails to provide leadership and support for the staff. Passive managers do not engage in exchange relationships with staff members; rather, they avoid interaction. Depending on one's theoretical perspective, this avoidant style leads to several consequences: contingency theory posits that managerial behavior is flexible and various according to the situation (Bass, 1990). That is, effective managers vary their behavior according to their interpretation of the situation and their assessment as to what needs to be done to solve a given problem.

The passive manager, however, does not engage in contingent behavior, but consistently avoids involvement in the decision-making process. For the staff, the result is loss of effectiveness and role conflict. It leads to role ambiguity because passive managers abdicate their roles as leaders of their staff, which makes the staff attempt to fill the void without clear direction as to how to go about doing it. In addition, it creates a power vacuum into which persons

exercising informal authority can step in and exercise non-legitimate forms of control (Homans, 1950).

Another problem with passive managerial styles is that they lead to organizational ineffectiveness (Bass, 1990; Filley et al., 1976). When an organization is ineffective, workers' morale and job satisfaction decline, increasing the likelihood that they will leave the organization (March & Simon, 1966).

This study has shown that leadership in the aerospace industry follow similar leadership trends as in other organizations, whether the goal is the production of commodities for sale or the provision of services. It also shows that leadership in high-tech industries influence job satisfaction similar to non-technical industries. That is, transformational leadership and contingent reward enhance satisfaction with supervision primarily and work and general satisfaction secondarily. Passive management by exception is associated with declines in satisfaction with supervision primarily, and satisfaction with work secondarily. Active management by exception was not significantly related to job satisfaction either in this study or in the data presented by Bass and Avolio (2000).

When generalizing the findings of this study, the following limitations should be considered: first, the data from the study come from a single aerospace employer; second, the study participants were volunteers and were self-selected on the basis on their willingness to participate in the study. By having a single employer, it is likely that supervision styles are probably narrowed. Each organization has its own culture that generates norms about supervision. A certain supervision style, such as highly intrusive and authoritarian, might be normative in one organization, such as General Motors, but quite deviant in another, such as a university.

The self-selection factor is always a potential issue in social science, because of the necessity to provide all study participants with the right to refuse participation. In addition, the collection of data from a convenience sample introduces unknown biases to the data requiring that the findings be held contingent until verified by subsequent research.

Implications for Business Practice

Management is an art; as such, it incorporates specific skills that can be taught. In order to be a transformational leader, an individual must be able to have the cognitive

capacity to envision where the organization should be within five to ten years and should plan strategy to implement that vision. If a leader is going to inspire followers to achieve a particular goal, it is incumbent upon that leader to communicate that goal to the followers and to provide them with the appropriate guidelines and resources by which the goal can be achieved. The three factors that constitute transformational leadership -- intellectual stimulation, inspirational motivation, and individual consideration -- focus on the cognitive, emotional, and social aspects of the process whereby leadership motivates followers to engage themselves in behaviors that further the goals of the organization. Intellectual stimulation is the process by which leaders involve their teams in the process of conceptualizing the goals to be achieved and provide the means by which they can be achieved - in collaboration. Inspirational motivation, or charisma, relates to the ability of a leader to generate enthusiasm about the work and to make it a legitimate task of the team. Individual consideration involves the ability to identify strengths of individuals and employ them in the achievement of the goals of the organization, to make people feel they are valued, and to

teach staff members what they need to know to successfully perform their jobs.

Weber (1978) provided the insight that officeholders are accorded a certain amount of power that must be wielded in order to achieve organizational goals. He noted, however, that such power was insufficient, but had to be legitimated, i.e. that officeholders must generate willing compliance to their directives. Blau (1986) described the legitimation process as an exchange of the satisfaction of workers' task and socio-emotional needs for compliance.

Managers must develop not only a vision of the organization and strategy by which that vision can be achieved, but must also have the ability to organize a group of people into a cohesive team directed at achieving the goals of the organization. This aspect of the leadership process requires people skills. As organizational theorists have described since the beginning days of "scientific management," tensions always exist between the individual and the collective, between the ideographic and the homothetic aspects of the organization (Etzioni, 1964). The effective manager must be able to navigate between the individual and the organization. Managers are employed on the assumption that their actions will further the goals of the

organization. However, in order for them to do so, they must organize, motivate, and actualize goal-directed behaviors of the members of their units to achieve those goals.

The research shows that transformational leadership is not sufficient to motivate workers. Managers must be able to engage in transactional exchange processes with their subordinates in order to get the job done. The sanctioning system within the organization is extremely important in motivating workers and in gaining organizational loyalty. The literature shows that positive sanctioning is much more effective than negative sanctioning, the latter of which tends to engender hostility and resistance (Blau, 1964; March & Simon, 1966). Therefore, the use of contingent rewards is important in maintaining worker morale and loyalty and ensuring that work is of high-quality.

The recruitment and training of managers should involve the assessment of and instruction in management skills, which should include abilities to develop a vision, implement that vision, motivate subordinates, mediate between the individual's needs and organizational demands, engage in positive interaction with subordinates, instigate positive problem solving behaviors, and anticipate problems before they become serious. Although this study was conducted in aerospace environment, the research seems

to indicate that across industries and organizations -- productive vs. nonproductive, private vs. public, smaller vs. larger -- that workers desire transformational leaders who also engage in positive exchange relationships with them.

Recommendations for Future Research

This project examined the relationship between managers' leadership style and subordinates' job satisfaction in aerospace environment. Subsequent research should explore other factors that may influence the job satisfaction of aerospace employees. Such other factors might include issues of remuneration, quality of work, and opportunities for advancement. Also, researchers might wish to explore those organizational factors in the aerospace industry that encourage or discourage effective leadership, such as level bureaucratization, organizational climate, and organizational size.

APPENDIX A

MLQ-5 & JDI

MULTIFACTOR LEADERSHIP QUESTIONNAIRE RATER FORM (5x-SHORT)

Bernard M. Bass and Bruce J. Avolio
Center for Leadership Studies/School of Management
State University of New York, Binghamton
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This is a questionnaire to provide a description about leadership. Please describe the **MANAGER** who is your immediate supervisor and answer the questions by circling the appropriate number on the right of each statement. When the item is irrelevant or does not apply, or where you are uncertain or don't know, leave the answer blank. Make no more than one mark for each question.

Directions: Listed below are descriptive statements about the *manager* you are rating. For each statement, we would like you to judge how frequently your manager has displayed the behavior described. Use the following key for the five possible responses:

Not at all 0	Once in awhile 1	Sometimes 2	Fairly Often 3	Frequently if not always 4
-----------------	---------------------	----------------	-------------------	----------------------------------

1. Provides me with assistance in exchange for my efforts.	0	1	2	3	4
2. Re-examines critical assumptions to question whether they are appropriate.	0	1	2	3	4
3. Fails to interfere until problems become serious.	0	1	2	3	4
4. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards.	0	1	2	3	4
5. Avoids getting involved when important issues arise.	0	1	2	3	4
6. Talks about their most important values and beliefs.	0	1	2	3	4
7. Is absent when needed.	0	1	2	3	4
8. Seeks differing perspectives when solving problems.	0	1	2	3	4
9. Talks optimistically about the future.	0	1	2	3	4
10. Instills pride in me for being associated with him/her.	0	1	2	3	4

11.	Discusses in specific terms who is responsible for achieving performance targets.	0	1	2	3	4
12.	Waits for things to go wrong before taking action.	0	1	2	3	4
13.	Talks enthusiastically about what needs to be accomplished.	0	1	2	3	4
14.	Specifies the importance of having a strong sense of purpose.	0	1	2	3	4
15.	Spends time teaching and coaching.	0	1	2	3	4
16.	Makes clear what I can expect to receive when performance goals are achieved.	0	1	2	3	4
17.	Shows that he/she is a firm believer in "If it ain't broke, don't fix it."	0	1	2	3	4
18.	Goes beyond self-interest for the good of the group.	0	1	2	3	4
19.	Treats me as an individual rather than just as a member of a group .	0	1	2	3	4
20.	Demonstrates that problems must become chronic before taking action.	0	1	2	3	4
21.	Acts in ways that builds my respect.	0	1	2	3	4
22.	Concentrates his/her full attention on dealing with mistakes, complaints, and failures.	0	1	2	3	4
23.	Considers the moral and ethical consequences of decisions.	0	1	2	3	4
24.	Keeps track of all mistakes.	0	1	2	3	4
25.	Displays a sense of power and confidence.	0	1	2	3	4
26.	Articulates a compelling vision of the future.	0	1	2	3	4
27.	Directs my attention toward failures to meet standards.	0	1	2	3	4
28.	Avoids making decisions.	0	1	2	3	4
29.	Considers me as having different needs, abilities, and aspirations from others.	0	1	2	3	4
30.	Gets me to look at problems from many different angles.	0	1	2	3	4
31.	Helps me to develop my strengths.	0	1	2	3	4

32.	Suggests new ways of looking at how to complete assignments.	0	1	2	3	4
33.	Delays responding to urgent questions.	0	1	2	3	4
34.	Emphasizes the importance of having a collective sense of mission.	0	1	2	3	4
35.	Expresses satisfaction when I meet expectations.	0	1	2	3	4
36.	Expresses confidence that goals will be achieved.	0	1	2	3	4
37.	Is effective in meeting my job-related needs.	0	1	2	3	4
38.	Uses methods of leadership that are satisfying.	0	1	2	3	4
39.	Gets me to do more than I expected to do.	0	1	2	3	4
40.	Is effective in representing me to higher authority.	0	1	2	3	4
41.	Works with me in a satisfactory way.	0	1	2	3	4
42.	Heightens my desire to succeed.	0	1	2	3	4
43.	Is effective in meeting organizational requirements.	0	1	2	3	4
44.	Increases my willingness to try harder.	0	1	2	3	4
45.	Leads a group that is effective.	0	1	2	3	4

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JOB DESCRIPTIVE INDEX

Think of the work you do at present. How well does each of the following words or phrases describe your work? In the blank beside each word or phrase below, check *only those words that describe your job*. Otherwise leave the form blank.

Work on Present Job

_____ Fascinating
 _____ Routine
 _____ Satisfying
 _____ Boring
 _____ Good
 _____ Creative
 _____ Respected
 _____ Uncomfortable
 _____ Pleasant
 _____ Useful
 _____ Tiring
 _____ Healthful
 _____ Challenging
 _____ Too much to do
 _____ Frustrating
 _____ Simple
 _____ Repetitive
 _____ Gives sense of accomplishment

Supervision

_____ Asks my advice
 _____ Hard to please
 _____ Praises good work
 _____ Tactful
 _____ Influential
 _____ Up-to-date
 _____ Doesn't supervise enough
 _____ Has favorites
 _____ Tells me where I stand
 _____ Annoying
 _____ Stubborn
 _____ Knows job well
 _____ Bad
 _____ Intelligent
 _____ Poor planner
 _____ Around when needed
 _____ Lazy

Job in General

- _____ Pleasant
- _____ Bad
- _____ Ideal
- _____ Waste of time
- _____ Good
- _____ Undesirable
- _____ Worthwhile
- _____ Worse than most
- _____ Acceptable
- _____ Superior
- _____ Better than most
- _____ Disagreeable
- _____ Makes me content
- _____ Inadequate
- _____ Excellent
- _____ Rotten
- _____ Enjoyable
- _____ Poor

Respondent Profile

Please answer the following questions by circling the number to the left of the appropriate response.

- | | |
|--|--|
| <p>1. My current position is:</p> <p>1 Engineer</p> <p>2 Lead engineer</p> <p>3 Manager</p> <p>4 Other, Please Specify:</p> <p>_____</p> | <p>5. Years in present position</p> <p>1 < 1</p> <p>2 2-3</p> <p>3 3-5</p> <p>4 6-10</p> <p>5 11-15</p> <p>6 16-20</p> <p>7 21+</p> |
| <p>2. My highest earned educational degree:</p> <p>1 High school diploma</p> <p>2 Associate degree</p> <p>3 Bachelors degree</p> <p>4 Masters degree</p> <p>5 Professional diploma</p> <p>6 Doctorate</p> | <p>6. My age:</p> <p>1 Less than 30 years old</p> <p>2 31 - 40</p> <p>3 41 - 50</p> <p>4 51 - 60</p> <p>5 Over 60</p> |
| <p>3. Years of experience in aerospace:</p> <p>1 < 1</p> <p>2 2-3</p> <p>3 3-5</p> <p>4 6-10</p> <p>5 11-15</p> <p>6 16-20</p> <p>7 21+</p> | <p>7. My racial/ethnic background:</p> <p>1 African-American</p> <p>2 Non-African-American black</p> <p>3 Latino</p> <p>4 Asian</p> <p>5 White</p> <p>6 Other, Please Specify:</p> <p>_____</p> |
| <p>4. My sex:</p> <p>1 Male</p> <p>2 Female</p> | |

APPENDIX B

SURVEY INSTRUCTIONS

Memorandum

Date: October 15, 2001
To: Survey Participants
From: Patricia Catalano
Subject: Research Project

I am in the process of conducting a study on leadership for my doctoral dissertation at NOVA Southeastern University. The research is being supervised by Dr. Barbara Dastoor at the Wayne Huizenga Graduate School of Business and Entrepreneurship. The management of this company has approved my request to conduct a study within the organization. I am requesting your participation, which consists of completing the attached questionnaire anonymously and returning it to me in the envelope provided. It should take approximately ten minutes to complete. Please do not discuss your responses with other participants until the assessment is finalized.

As a participant in a scientific investigation, you have the following rights:

1. **Confidentiality of responses** -- your survey questionnaire is to be answered anonymously so that your identity is protected. Once you hand the questionnaire in, there is no way in which to identify any study participant. In addition, all data from the study will be reported in numerical form using aggregated categories.
2. **The right of refusal without fear of retribution** -- you have the right to refuse to participate in the study without fear of negative consequences resulting from your refusal. Whether or not you participate in the study will have no effect on the way you are treated by your employer.
3. **Access to the findings of the study** -- when the study is completed, a summary of the findings will be distributed upon request.

If you have any questions about the conduct of the study, please feel free to call me at extension 6-3194 between the hours of 8 AM and 4 PM.

Thank you in advance for your participation.

Sincerely,

Patricia Catalano
Principal Investigator
Attachments

APPENDIX C

CORRESPONDENCE

Letter to Bowling Green University

Patricia Catalano
P.O. Box 4694
Palos Verdes Peninsula, CA 90274

October 6, 2001

Mr. Craig Crossley
Department of Psychology
Bowling Green State University
Bowling Green, Ohio 43403-0228

Dear Mr. Crossley:

Per our telecon of October 5, 2001, enclosed is a check in the amount of \$175.00 to cover charges for duplicating the Job Descriptive Index - 175 copies @ \$1.00 per copy. As previously stated, I am in the research phase of my dissertation. I will be using the JDI to measure three satisfaction variables: 1) job, 2) supervisor, and 3) work. This instrument will be distributed to approximately 120 employees at an aerospace corporation. Please confirm receipt of the check and include your permission to reproduce 175 copies of the JDI.

Your assistance in this matter is greatly appreciated.

Sincerely,

Patricia Catalano

Letter to Mind Garden

Patricia Catalano
P.O. Box 4694
Palos Verdes Peninsula, CA 90274

October 5, 2001

Mind Garden
Attn: Sugey Jaimez
1690 Woodside Road, Suite 202
Redwood City, California 94061

Dear Ms. Jaimez:

In response to your message of October 1, 2001, I am hereby placing an order from the Mind Garden, Catalog of Products for one MLQ Permission Set (P). The Permission set contains the Sampler Set along with an agreement, which allows me to reproduce up to 200 copies of the instrument for personal and non-commercial use for one year. Enclosed is a check in the amount of \$141.25. This amount includes \$125.00 for the Permission Set, \$8.75 (7% tax), and \$7.50 for Shipping and Handling, Priority Mail. Please refer to the order form for ship to address.

Your assistance in this matter is most appreciated.

Sincerely,

Patricia Catalano

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