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PERCEPTION AND REALITY: AN EMPIRICAL ASSESSMENT OF NAVY LEADERSHIP STYLES AND BUSINESS PROCESS REENGINEERING OUTCOMES

By

Andre D. Murphy

A dissertation submitted in partial fulfillment of the requirement for the degree of

Doctor of Education

University of San Diego

2002

Dissertation Committee

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ABSTRACT

Seeking to improve mission readiness and organizational effectiveness while reducing expenditures, the Department of the Navy (DoN) eliminated and reconstructed many of its business practices. Reconstruction of the military's business practices was accomplished through business process reengineering (BPR). Business process reengineering is a change strategy that provides organizations the opportunity to do "more with less." Although doing more with less is not a new concept in military settings, the organizational change construct of business process reengineering is new.

Most organizations in the private sector that attempt reengineering do not attain their intended results; the literature reveals that 50-70% of organizations that undertake a reengineering effort fall short of their objectives. BPR's high failure rate in the private sector makes an organizational change process of this type, in a military setting, an important topic for study.

It seemed especially important to investigate what relationship, if any, exists between perceived leadership behaviors and business reengineering process outcomes in a Department of Defense environment. This study explored this relationship. In particular, it examined the

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relationship between perceived leadership styles (as measured by the Multifactor Leadership Questionnaire (MLQ)), as well as measures of employee satisfaction, employee effort, employee effectiveness, and organizational effectiveness. (The first three of these variables were measured by additional items on the MLQ; organizational effectiveness was assessed through the use of additional items developed by the researcher based on Mott's index.) The study also related MLQ leadership style ratings with actual goal attainment; goal attainment data were gathered from DoN reports. Linear regression was the principle analytical tool employed.

Results indicate that relationships exist between followers' perception of their supervisors' leadership styles, on the one hand, and perceptions of employee satisfaction, employee effort, employee effectiveness, and organizational effectiveness, on the other. More specifically, the data suggest that there is a positive relationship between transformational leadership and the variables listed above. No relationship, however, was detected when actual goal attainment was used as the dependent variable. The dissertation considers various possible explanations for this apparent anomaly.

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This study should be useful to the Department of the Navy, the business community and academics interested in BPR. This research provides information about an under-investigated topic: the role of leadership in BPR goal attainment.

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DEDICATION

To my life-mate and wife Christina for her endless love, tolerance, patience, support and empathy throughout this project. Without her support, this project would have not been possible. Also, to my son and daughter, Tyler and Kayla for their hugs and kisses at just the right moment. You guys are the best!

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TABLE OF CONTENTS

CHAPTER ONE INTRODUCTION.....1
Background to the study.....2
Purpose of the study.....4
Research Questions.....5
Research Hypotheses.....5
Brief Methods Overview.....6
Significance of the Study.....7
Delimitations and Limitations.....8
Definition of terms used in the study.....9

CHAPTER TWO REVIEW OF THE LITERATURE.....12
Brief history perspective of reengineering.....12
Business process reengineering (BPR) types.....15
Business process reengineering success factors.....18
Business process reengineering failure factors.....22
Leadership.....24
Transactional leadership.....25
Transformational leadership.....28
Vision and transformational leaders.....28
Bass and Avolio's Theory of transformational Leadership.....30
Organizational change and reengineering.....34
Organizational learning.....36
Organizational Effectiveness.....38

CHAPTER THREE RESEARCH AND DESIGN METOHOLOGY.....41
Sample-Respondent Sites and Respondents.....43
Respondents.....44
Sampling Methods.....45
Access.....50
Instrumentation and Other Measures.....52
Multiple Leadership Questionnaire (MLQ).....52
Reliability and Validity of MLQ.....55
Determining leadership style.....57
Measuring perceptions of employee effort, effectiveness, satisfaction with the MLQ.....59
Measuring organizational effectiveness.....59
Measuring demographic variables.....60
Determining BPR success.....60
Data Analysis and Hypothesis Testing Methods.....65
Answering research question 1.....66
Answering research question 2.....67
Leadership dummy variables.....68
Answering research question 3.....72
Analysis and Methods Summary.....73

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CHAPTER FOUR RESULTS.....75
Characteristic of the reengineered organizations and respondents.....76
Description of the Data.....78
Findings Related to Research Questions/Null Hypothesis.....84
Results related to research question 1.....84
Results related to research question 2.....85
Correlation coefficient matrix.....86
Employee satisfaction.....87
Employee effectiveness.....89
Employee effort.....91
Organizational effectiveness.....93
Results related to research question 3.....95
Actual organizational success.....95
Testing the significance of leadership.....97
Overall summary.....99

CHAPTHER FIVE DISCUSSION.....101
Review of the study's purpose and methods.....101
Summary of findings.....102
Is there a predominant leadership style.....102
Leadership style and perceived outcome Variables.....103
Leadership style and actual organizational Success.....104
Discussion of Findings.....105
Anomalies with prior research.....105
Anomalous findings within study.....109
Implications for Practice and Policy.....111
Practice.....111
Policy.....113
Implications for Future Research.....114
Conclusion.....116

LIST OF TABLES

Table 1 Types of Organizations Used For Sampling and Response Percentages.....49

Table 2 Leadership Characteristics.....56

Table 3 Transactional Leadership Score for Leader 1 (example).....57

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Table 4 Comprehensive Target Example.....62

Table 5 Comprehensive and Primary Target Formulas.....63

Table 6 Primary Target Example.....64

Table 7 Descriptive Statistics for Sample.....79

Table 8 Perceived Leadership Style Percentages and Standard Deviations by Organization (Unit of Analysis).....81

Table 9 Perceived Outcome Variable Percentages and Standard Deviations.....82

Table 10 Actual Success Percentages by Organization...84

Table 11 Leadership Style Proportions.....85

Table 12 Coefficient Correlation Matrix.....87

Table 13 Regression Results for Employee Satisfaction.....88

Table 14 Regression Results for Employee Effectiveness.....90

Table 15 Regression Results for Employee Effort.....92

Table 16 Regression Results for Organizational Effectiveness.....94

Table 17 Regression Results for Actual Organizational Success.....96

Table 18 Restricted and Unrestricted Regression Results For Dependent Variables.....98

APPENDECIES

Appendix A Letter Requesting To Conduct Study.....119

Appendix B Data Call Letter 121

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Appendix C Cover Letter to Respondents.....123

Appendix D Multifactor Leadership Questionnaire.....125

Appendix E Demographic and Organizational
Effectiveness Questionnaire.....127

References.....131

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CHAPTER 1 INTRODUCTION

The private sector, driven by today's globally competitive business environment, is faced with the challenge of improving its services while at the same time reducing costs. Business process reengineering (BPR) is an organizational cost reduction strategy that presently has considerable currency in business. BPR was brought to the fore by former MIT professor Michael Hammer, whose original *Harvard Business Review* article gave examples of the application of this technique. Hammer (1990) defines BPR as a total rethinking and redesign of an organization's business processes in order to achieve dramatic improvements in critical measures of performance such as cost, quality, and speed. The Hammer (1990) article, "Reengineering work: don't automate, obliterate," uses the example of the Ford Motor Company, which reduced its accounts payable costs and staff by 75% as a result of reengineering.

The success of many organizational BPR efforts is reported in the literature (Hammer & Stanton, 1995; Champy, 1995; Bashein, Markus, and Riley, 1994; GAO, 1997; Keen, 1995). BPR is believed to be essential for survival in an

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environment where doing more with less has become commonplace. As a result, many companies have adopted this innovative business practice to meet customer needs and bolster profit margins (Hammer, 1993; Grover, Jeong, Kittnger and Teng, 1995).

Background to the Study and Problem Statement

Government as well as business has gotten into the BPR act. Congress, in its efforts to improve government performance and generate greater public trust in government through better planning and reporting, enacted the Government Performance Results Act (GPRA) of 1993. In particular, the GPRA requires the Department of Defense (DoD) to generate and disseminate annual performance goals. It also requires the alignment of these goals with organizational budgets and the submission of reports on success in achieving stated goals.

In response to the above legislation, the DoD has articulated six fundamental goals. One of these goals involves reengineering of organizational infrastructures in order to reduce costs and improve military capabilities. As a result of this cost reduction initiative and directive, the Navy is reengineering its shore establishments -- through what is referred to as

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regionalization -- by restructuring installation management functions in areas such as San Diego, California, where a significant concentration of Naval installations exist.

While many BPR projects have been implemented in the private sector, not all reengineered organizations achieve their intended results. A survey conducted by CSC Consulting revealed that more than 70% of BPR projects fail (Stanton, Hammer, and Power, 1992, p.7). Similarly, Hammer and Champy (1993) estimate that between 50% and 70% of organizations that reengineer, fall short of their objectives.

In the private sector, a lack of appropriate senior leadership involvement is one factor that has been cited as a reason for BPR failure (Grover et al., 1995). Leadership is presumably an important factor in Naval efforts as well. In fact, commentary about problems within the Navy's reengineering effort in the San Diego area already has begun to surface (R. Berlin, personal communication, November 19, 1999). However, since this managerial strategy is new to the military, a lack of literature exists regarding the Department of Defense and BPR. There is a need, therefore, to explore the relationship between leadership behavior and BPR success -- or lack of success -- in a Naval context.

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Purpose of the Study

Most assessments of BPR program effectiveness focus on the presence or absence of the basic planning and analysis steps: defining and clarifying program goals and objectives, developing indicators for program outcomes and collecting data to determine whether goals and objectives have been met. All of these steps require leadership for implementation and follow through. Therefore, research should be extended in order to establish if a connection exists between BPR outcomes and perceived leadership styles.

The literature clearly shows that BPR has become an important organizational efficiency tool, yet, in some contexts, it has not achieved the organizational successes sought (Andrews and Stalick, 1994).

Within the military business organizations, the DoD has invested thousands of man-hours and millions in tax dollars implementing business process reengineering; therefore, it is important to understand how the benefits from those expenditures might be maximized. In particular, shrinking DoD budgets and a reduction in military force make it imperative to understand the relationship between leadership behaviors and DoD BPR project outcomes so that training dollars can be wisely spent.

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The purpose of this study, therefore, was to investigate the relationship between BPR outcomes and employee perceptions of Navy leaders' behaviors, in particular, perceived differences in leadership.

Research Questions

The following questions functioned act as catalysts for this study:

(1) Is there a predominant leadership style among Department of the Navy (DoN) BPR program leaders?

(2) Is there a relationship between leadership style and employee effort, employee satisfaction, employee effectiveness, and organizational effectiveness in DoN BPR environments?

(3) Is there a relationship between leadership style and success of DoN BPR program outcomes?

Research Hypotheses

The following research hypotheses were tested in this study:

H_0: (1) No predominant statistically significant leadership style exists among DoN BPR program leadership.

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H_0: (2a) There is no statistically significant relationship between a DoN BPR program leader's leadership style and perceptions of employee satisfaction.

H_0: (2b) There is no statistically significant relationship between a DoN BPR program leader's leadership style and employee effectiveness.

H_0: (2c) There is no statistically significant relationship between a DoN BPR program leader's leadership style and employee effort.

H_0: (2d) There is no statistically significant relationship between a DoN BPR program leader's leadership style and organizational effectiveness.

H_0: (3) There is no statistically significant relationship between leadership styles of DoN BPR program leaders and success of BPR program outcomes.

Brief Methods Overview

This section briefly explains the source of each of the variables used to test the research questions.

The survey method, which was selected for this study, allowed for ease in quantitative analysis of data gathered. A survey was preferable to an experimental method in this study because it would have been next to impossible to identify and control experimental groups. In addition to

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survey data, overall BPR success was determined by examining established organizational metrics attainment. These data were obtained directly from unit records. It is the expectation of the researcher that this information was accurate and unbiased, and provided a means to compare survey data about organizational effectiveness with actual effectiveness measures. Both perceived (survey) organizational effectiveness outcomes and data generated from organizational records about actual organizational outcomes were employed in regression models.

Significance of the Study

The significance of this study is twofold. Currently, a void exists regarding research on DoN BPR outcomes and leadership behaviors. This study should help fill that void.

In addition, before a reengineering initiative is undertaken, it is important for stakeholders to understand the effects of a changing organizational environment on employees. In particular, leaders should have a fundamental understanding of the potential leadership activity barriers during BPR. For this reason, empirical research results about leadership styles and DoN reengineering outcomes should help leaders improve their

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performance and, in the process improve DoN BPR project results.

Delimitation and Limitations

One delimiting factor may be the generalizability of this study. Since 1998, the DoD has aggressively taken on several BPR projects worldwide. Therefore, in a culture vastly different from that of the United States, one may find different perceptions of senior leadership behaviors in a similar work environment. In particular, BPR projects in the Far East may be primarily staffed by Japanese Nationals. If this study were replicated in Japan, results may vary. Study results could differ because this study will be primarily based on perceptions and it is believed that "culture" provides the "lenses" through which our perceptions are shaped and viewed. Therefore, senior leadership behaviors in Japan that are similar to those in the United States may be perceived (assessed) differently by Japanese employees.

One limiting factor is that this study did not use a stratified sample because the sort of information about the population required to do this could not be obtained from manpower reports, consequently, the sample may not be completely representative of the population.

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Another limiting factor may be that many employees view the reengineering project in an undesirable manner because they see it as a means of downsizing the workforce rather than improving organizational effectiveness. In this regard, survey results could potentially have reflected disgruntled feelings toward senior leadership, such feelings may have in appropriately skewed respondents' input as they consider senior leadership behavior.

Definition of Terms Used in the Study

Activity-Based Costing: a set of accounting methods used to identify and describe costs and required resources for activities within processes.

Business Process: a collection of related, structured activities -- a chain of events -- that produces a specific service or product for particular customers.

Business Process Reengineering: in government, a systematic disciplined improvement approach that critically examines, rethinks, and redesigns mission-delivery processes and sub-processes within a process management approach.

Process Improvement: an ongoing method to improve how products and services are provided and internal operations are conducted.

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Government Performance and Results Act (GPRA): legislation enacted by Congress in 1993 that seeks to focus federal government attention on program outcomes. The GPRA required agencies to develop strategic plans prior to FY 1998, agree upon desired annual performance goals beginning in FY 1999, and to report annually on actual performance compared to goals.

Outcome: the ultimate, long-term, resulting effects -- both expected and unexpected -- of the customer's use or application of the organization's outputs.

Regionalization: As defined by the Department of the Navy, is a strategy of reengineering shore installation support management in fleet concentration areas designed to reduce infrastructure costs and redundancy of effort in quality of life areas, such as, supply, public safety, acquisition support, facilities maintenance, and information technology.

Stakeholder: an individual or group with an interest in the success of an organization in delivering intended results and maintaining the viability of the organization's products and services. Stakeholders influence programs, products, and services. Examples include: Commanding Officers and staff of relevant, authorizing, and oversight organizations; representatives of central management and

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oversight entities such as Commander, Naval Bases for the Southwest Region; Commanding General, Camp Pendleton; and representatives of a key interest group (including those groups that represent the organization's customers and interested members of the public).

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CHAPTER 2 REVIEW OF LITERATURE

This chapter begins with a historical review of BPR. Next, an overview of varying types of BPR is provided. The third section reviews literature dealing with BPR successes and failures. The chapter continues with an overview of leadership theories and research. Finally, the chapter concludes with a synthesis of literature on organizational change.

Since reengineering is a new concept to military organizations and their restructuring, the literature that follows will primarily drawn from organizational reengineering in the private sector.

A Brief Historical Perspective of Reengineering

BPR is part of a long tradition of attempting to improve organizational efficiency and performance. This tradition began in the 1800s with the work of Frederick Taylor and his view of structural specialization. Taylor argued that managers should begin by studying work behavior to determine more efficient ways to accomplish employee objectives; then, existing processes should be reconstructed (reengineered) to optimize productivity

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(Shafritz and Ott, 1996). Taylor's ideas are commonly known as scientific management. Scientific management is not actually a set of theories or procedures that can be used by anyone at every step of an improvement effort; rather, scientific management is more of a trial and error or evolutionary process. In all cases, practice precedes theory in improvement processes, which can be labeled scientific management efforts (Shafritz and Ott, 1996).

In the early 1900's, Henri Fayol, (Shafritz and Ott, 1996) originated the concept of process improvement, a concept which is roughly equivalent to the current term, reengineering. According to Fayol, the term refers to steering an undertaking toward its objectives by seeking to derive an optimum advantage from all available resources. Although the technological resources of our era have dramatically changed the nature of process improvement, the concept is still viable and, in a sense, has been resurrected in the literature on Total Quality Management (TQM) and BPR. Like Fayol's notion of process improvement, BPR stresses the radical change of processes in order to use resources most efficiently and effectively within an organization.

Hammer and Champy (1993) are considered by many to be the pioneers of modern BPR. Hammer and Champy (1993)

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emphasize that BPR is not a fad. Nor does it offer a single, narrow technique to solve all problems. It is a massive undertaking that entails rethinking every aspect of an organization. Hammer and Champy (1993), in fact, define BPR as "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed" (p.19). In BPR, organizational structures are defined only after the processes necessary to produce products and services for the organization's customers are designed. The organizational structure is then designed so it best supports that process.

The process part of business process reengineering is a group of business activities (tasks) that create value for a customer or the transformation of inputs to outputs (Hammer, 1996). Hammer (1996) adds, "You can have the most efficient organization in the world, but unless it effectively serves its customers, in essence, accomplishes its mission, it is still of no value" (p.57). Reengineering is about creating value for the customer and performance is measured by "how well the product or service is received by that customer, not how well one activity is performed within the process" (Caudle, 1994, p.4).

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Hammer and Champy stress that in BPR the emphasis is on the outcome and the customer, not the mechanism. To state this another way, the bottom-line in BPR is what gets done rather than how it is done.

A number of problems with BPR have emerged over recent years. A survey by the consulting firm, Booz, Allen & Hamilton (1997), for example, suggested that when organizations reengineer, they often overlook the fact that leaders need appropriate leadership tools to implement change successfully. If an organization's leadership is unwilling or unable to turn the spotlight on its own existing management or control processes, this will inevitably diminish the returns possible from the BPR initiative. A leader must be open to contrasting experiences or points of view in order to engage in the learning process of BPR. The relationship between a leader's style and BPR success were the focal point of this study.

BPR Types

Since its inception BPR has continued to evolve. As a result of his study on reengineering scopes an objectives Cypress (1994) describes two types of BPR. In his study, he describes first generation BPR as customer value-

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oriented which attempts to redesign small processes. In contrast, second generation BPR is stakeholder value-oriented and involves more dramatic organization-wide change.

Second generation BPR, according to Cypress (1994) is a four stage organization-wide process consisting of: (1) modeling analysis - to build a model of business processes as they currently are (the "as-is" model) and to show the interconnections between processes; (2) activity based costing - which shows the cost of each process activity in terms of resources and time; (3) graphical simulation modeling - to show the to-be model and provide for what-if analysis; (4) and enabling processes - planning out the overall strategy for implementation and executing a BPR program throughout the organization.

Field research on organizations by Davidson (1993) also reveals BPR as a phase-driven process. Phase One BPR emphasizes operational excellence, starting with automation projects. Phase Two builds on the capabilities and infrastructures developed in Phase One in order to expand the range of services and or products offered to end-users. Phase Three is designed to provide potential for creation of new units within the organization as a result of expanded services and products.

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Hall, Rosenthal and Wades (1993) inform us that BPR is based on the scope of reengineering. The purpose of their study was to unearth the relationship between the scope of BPR and its output from cases they examined. On one end of the continuum were companies that reengineered single activities within a single operation, such as, materials issue within a supply department. Organizations in the middle of the continuum reengineered with an eye toward developing a new cross-functional process. For example, the creation of an administrative function that would provide a service to customers through multiple departments within an organization. At the other end of the continuum were organizations that reengineered one or more processes that included critical portions of the organization's purpose. For example, instead of each Proctor and Gamble site depending on one marketing entity as the company's central headquarters, each site would have an independently functioning marketing department. The study of Hall, et al. (1993) indicates that an increase in reengineering comprehensiveness reduced costs across the organization.

The studies reviewed in this section suggest that authors who contribute to the business process reengineering literature use the term *business process reengineering* in different ways. The term can refer to

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anything from minor process improvements to radical changes in management. For the purpose of this study, which involves examination of military business process reengineering initiatives, BPR refers to more radical changes in organizational structure and management of resources.

BPR Success Factors

Hammer and Stanton (1995) identify the ingredients required for a successful BPR undertaking. These key ingredients relate to leadership and the reengineering team. Hammer and Stanton, for example, suggest that reengineering will only succeed when driven from the top-most levels of an organization. They write:

> Only top-level managers have the breadth of perspective and authority needed to see the entire process from start to finish, and only top-level managers can overcome problems that will occur along the way. An effective reengineering leader must be part visionary, part communicator, and part leg breaker (p.48).

The leader makes the decision to reengineer, makes reengineering succeed as an ongoing and visible participant, and creates an environment that will allow for

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the transformation of the organizational climate. "A passionate, committed, engaged executive leadership that uses signals, symbols and systems is absolutely necessary for successful reengineering" (Hammer & Stanton, 1995).

The reengineering team, according to Hammer and Stanton, relates and develops an understanding of old processes and customer requirements, invents a new process design, constructs the new process and sells the new way of working. "The context or environment in which the teamwork is being done is one of extreme uncertainty, experimentation and pressure to perform" (p.57). From these elements, Hammer and Stanton provide critical attributes required for the reengineering team: holistic perspective, process orientation, creativity, enthusiasm, persistence, excellent communication skills, tact and teamwork.

In *Reengineering Management,* Champy (1995) seems to have a different idea about how to engineer success. Champy believes managers must change how they work if they are to realize the full benefits of reengineering. Traditionally, managers most fear loss of control. Modern managers, however, do not command or manipulate, but instead according to Champy, share information and educate. They must replace old ways of thinking with new ideals and

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expectations associated with letting go. These include replacing perfectionist ways of thinking with experimental thinking, and "getting it right" credos with "making it better and better" credos. Champy adds that managers must have faith in human beings to do the right thing. The authority of the organizational chart is giving way to the ability to do a better job for the customer. Champy referred to this as existential authority: "Customers needs, not internal values, should guide the manager's performance" (Champy, 1995). Moreover, managers need to change too in order to successfully support a reengineering effort. Champy (1995) suggests managers need to focus on four questions, and in fact "live them" in order to experience success in reengineering: "(1) What is the business for? (2) What kind of culture do we want? (3) How do we do our work? (4) What kind of people do we want to work with?" (p.33).

Based on BPR consultants' interviews, Bashien et al. (1994) outlined the positive preconditions for BPR success as: senior management and sponsorship; realistic expectations; empowered and collaborative workers; strategic context of growth and expansion; shared vision; sound management practices; appropriate people participating full-time; and a sufficient budget. They

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also identified negative preconditions related to BPR as: the wrong sponsor (leader for the job); cost-cutting focus; narrow technical focus, and, do-it-to-me attitudes. The negative preconditions relating to the organization itself include: unsound financial condition; too many projects under way; fear and lack of optimism; and animosity toward the information systems (which provides feedback data) and human resources personnel. According to the authors, to turn around negative conditions, firms should: do something smaller first; conduct personal transformation; and intimately involve information systems and human resources management in the decision making process.

To achieve the dramatic performance gains that reengineering can offer, organizations must align supporting structures and systems with the newly designed process. Radically changing work processes will have a profound effect on management and support structures, people and organization, technology and information systems, and policies and regulations. For example, a newly designed process likely requires new skills for those responsible for implementing the process, as well as new and different information requirements (GAO, 1997).

A review of the literature has revealed little in the way of empirical research as it relates to this change

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methodology and effective leadership styles. Moreover, the conclusions of case studies of reengineering efforts often yield contradictory findings, and sometimes the contradictions are within a single case. For instance, Keen (1995) writes about a study on a BPR initiative that revealed a number of "new" precursor individual and team skills required for successful BPR initiatives. However, of notable interest, all of the theorist, and only a some of the practitioners interviewed during Keens study, agreed that many of the necessary skills identified had to be developed and in place prior to reengineering in order to yield optimal results. This practice, however, was contrary to what actually happened -- new skills were not attained prior to project execution (Keen, 1995). The study above illustrates one of the fundamental discontinuities that exists between BPR planning and its successful implementation. This next section provides a synthesis of the literature about why these discontinuities exist and, consequently, why there are failures in BPR implementation.

BPR Failure Factors

Some data suggest that BPR failures are as high as 70% of BPR initiatives undertaken (Hammer, 1995; Laberis,

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1995). Among the reasons cited for failure are: employees' resistance to change (Hammer and Stanton, 1995), inadequate attention to employee needs (Breskin, 1995 and Grover, et al., 1995), inadequate and inappropriate staffing (Hammer and Stanton, 1995; Grover, et al, 1995), goals not aligned with strategy, and lack of measurable and attainable goals (Popoff and Brache, 1994). The major cause of the factors cited above is a failure in committed leadership (Hammer, 1996; Hammer and Champy, 1993; Breskin, 1995; Laberis, 1995; Popoff and Brache, 1994).

Research conducted by Sutcliffe (1997), for instance, indicates that some business reengineering projects failed due to a breakdown in leadership activity and leaders' lack of commitment during the implementation process. Using Flamholtz's leadership effectiveness framework, Stucliffe concluded that successful leaders use a mix of styles that are appropriate for their specific BPR project. She argues further that the presence of trust can allow for the use of any leadership style including the non-directive styles. However, this research fails to recognize the duality relationship between leader and follower from a transformational, commitment, and obligation perspective. For example, integrity driven leaders not only focus on the results of the organization; they also expand that focus to

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include relationships. They understand that if we define integrity as something more than simply earning the trust of others, leaders must attend to more than the bottom line. Instead, integrity driven leaders value the credibility earned through character, competence and a genuine desire to serve others. Their commitment to achieving results without sacrificing relationships generates confidence and reinforces a power base that is built on integrity rather than blind trust.

Although varying aspects of BPR have been studied, including the role that leadership plays in BPR success, no formal research has examined the role that leadership style plays in the success or failure of Department of Defense reengineering efforts. As noted earlier, a focus on leadership styles will be a central component of this study. The next section examines the existing literature on leadership and leadership styles.

Leadership

Some theorists and practitioners believe that transformational leadership is the style of leadership that will bring about successful and significant organizational change. This belief is often supported by empirical research (Fisher, 1994; Bass and Avolio, 1997). In order

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to articulate thoughts on transformational leadership, literature that contrasts transformational leadership with the concept of transactional leadership will be reviewed in the next subsection.

Transactional Leadership. Transactional leadership, according to Burns (1978), occurs when "one person takes the initiative to make contact with others for the purpose of an exchange of valued things," such as paying wages to employees for their work and effort. Bass (1997) contends: "Transactional leadership occurs when the leader rewards or disciplines the follower depending on the adequacy of the follower's performance" (p.6). Therefore, transactional leadership depends on contingent reinforcement.

Bass (1986) further believes a transactional leader is very much a manager who works within -- and expects others to work within -- established boundaries. Transactional leaders may not be considered true leaders by some researchers and some practitioners (Bennis, 1984; Covey, 1989). Covey (1989) uses the words of Warren Bennis and Peter Drucker to explain why differences of opinion exist on the above point: "Management is doing things right. Leadership is doing the right thing." (p.101).

The employer to employee relationship with a transactional leader is based on a mutual system of

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coercion and reinforcement. The transactional leader gets something he or she wants, and the followers get something in return. The transactional leader recognizes the basic needs of the followers, for example, money for housing or food and clothing. Leaders then arrange the relationship so satisfaction of these needs (compensation) is contingent upon the employees meeting the transactional leader's expectations for work (Hoover, 1991). This is the time-honored "carrot and stick" approach for employer to employee relationships. It is presumed by the transactional leader that individuals will naturally try to avoid work whenever they can. Therefore, transactional leaders must in some way cajole, direct and or threaten in order to get some individuals to be productive. Moreover, the transactional leader believes that people prefer to be directed rather than take responsibility for their own actions and decisions (Tichy & Devanna, 1986; & Hoover, 1991).

Another characteristic of transactional leaders is that they cannot sublimate their personal needs to those of the organization (Kuhnert, 1994; & Hoover, 1991). Consider this as an example: A transactional military [there may be redundancy here] officer's need is to direct and control Sailors working as subordinates to him. As a result, they

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may intentionally suppress (or simply not see) the need to share key information with subordinates. This may occur even if it is in the best interest of the organization to do so since information is, indeed, power. People can be controlled with information or the lack of it, and this principle -- rather than the needs of the organization -- is likely to guide the behavior of the transactional military officer.

Rounding out the review of the literature on transactional leadership is a theory by James MacGregor Burns. In his 1978 work, *Leadership*, mentioned above, Burns describes "power wielders" as those whose leadership is designed to marshal resources to achieve ends or goals of their own. He contrasts servant leadership of human beings as an activity designed to engage followers in ways that motivate them to achieve goals mutually held. As much as any construct encountered to date, Burns touches on the situation of the military leader. On the one hand, he sees the military leader as some one who is issued followers and provided the legal authority to coerce them in a transactional manner to achieve goals. On the other hand, the followers of the modern military leader may not require coercion. Indeed, they may perform at much higher levels of productivity if they are engaged in a transformational

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manner. After all, there is no reason to assume they are any less interested in mission performance than the leader.

Transformational Leadership

Vision and transformational leaders. The notions of transformative and transactional leadership styles were first introduced by historian James McGregor Burns in his studies of two type of political leaders. However, a formal theory of transformational leadership was not developed until 1985 when Bass explicated the notion by indicating that:

> Transformational leaders attempt and succeed in raising colleagues, subordinates, followers, clients, or constituencies to a greater awareness about issues of consequence. This heightening of awareness requires a leader with vision, self confidence, and inner strength to argue successfully for what he sees is right or good, not for what is popular or is acceptable according to the established wisdom of the time (Bass 1985, p. 17).

The notion of vision, in fact, is a central construct in attempts to conceptualize the notion of transformational leadership. Tichy and Devanna (1986), for example, write: "Without vision, there is no revitalization" (p.146).

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Tichy and Devanna, and a host of other leadership theorists, suggest that a transformational leader must have a compelling vision, a holistic picture of how the organization should look in the future when it is meeting all of its stated goals (Bennis, 1984; Sergiovanni, 1984; Tichy & Devanna, 1986; Yammarino, 1994; Covey, 1989; Peters, 1992). That vision guides the leader's behavior and decisions, and serves as a reference point for all activities within the organization. All processes and actions are judged in the light of whether or not they aid the organization in achieving its vision. This vision speaks to the highest purposes of the organization and serves to give meaning to the job done by every member of the organization by creating shared goals to work toward (Tichy & Devanna, 1986, p.188). A focus on vision also engenders optimism for the future of the organization. And by keeping that vision and those shared goals always at the forefront of the organization, the transformational leader can align the organization to its future needs rather than to the past or to the present. In a transactional organization, to the contrary, the phrase "we've always done it this way" indicates orientation to the past.

One final point related to the role of vision and transformational leadership is raised by Tichy and Devanna:

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The leader must be able to communicate their vision both to internal and external audiences. No matter how worthy a vision is, if it does not get communicated to those who need to know, it is useless (Tichy & Devanna, 1986, p.153).

Before preceding it should be noted that transformational leadership theorists put emphasis on the importance of vision has not gone uncriticized in the literature. Heifetz (1997), for instance, argues that the prevailing notion that leadership consists of having vision is bankrupt because it continues to treat adaptive (changing) situations as if they were technical (familiar), and as if the authority figure is supposed to divine where the organization is going and people are supposed to follow. Heifetz continues: "leadership is then reduced to a combination of grand knowing and salesmanship" (p.7).

What Heifetz criticizes about the notion of vision in leadership theory is given a more positive interpretation in the writings of Bass and others. Indeed both the notion of "grand knowing" and a form of "salesmanship" seem to be implicit in the four identified components in Bass' theory.

Bass and Avolio's Theory of Transformational Leadership

Because Bass and Avolio's theory of transformational leadership -- and the leadership style instrument developed from the theory are key to this dissertation -- Bass and

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Avolio's work will now be discussed in some detail. The four components of Bass' notion of transformational leadership are: Charismatic Leadership (CL), Idealized Influence (II); Inspirational Motivation (IM); Intellectual Stimulation (IS); and Individualized Consideration (IC).

Bass (1997) believes that transformational leadership is charismatic when it allows the follower to identify with and emulate the leader. With respect to the second two components outlined above, Bass writes: "Transformational leadership inspires the follower with a challenge and through persuasion provides meaning and understanding" (p.43). As the quote suggests, Bass clearly believes transformational leadership is intellectually stimulating, not just emotionally inspiring -- motivational. He also emphasizes that stimulation encourages and supports the follower's abilities. This is the final component of Bass' model - Individualized Consideration. Individualized Consideration, according to Bass, refers to leadership that accommodates followers' limitations and provides support like mentoring and coaching.

To measure how effective a leader is in each of these components; the followers of a leader can complete Bass' and Avolio's Multifactor Leadership Questionnaire (MLQ). The results can help a leader plan and determine where they

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need to make "rudder adjustments" in order to be an effective leader.

A recent study by Sueki (1998) assessed the predictive validity of the MLQ by relating measures of transformational and transactional leadership to organizational culture variables. Cooke and Lafferty's Organizational Culture Inventory was used to examine the culture of the organizations studied. The ordering of predictor variables was based on Bass's hierarchy of effective and active leadership styles. Respondent scores indicated a positive correlation between transformational leadership and a constructive culture -- an environment that promotes self-fulfillment and interaction with one another. Conversely, the data were inconclusive about any relationship that might exist between measures of transactional leadership and the constructive culture measure.

Another study by Nischan (1997) utilizing the MLQ examined outcome variable relationships between transactional, transformational and laissez-faire leadership behaviors of faculty at a two-year community college. The primary focus of this study was to determine the effect of perceived faculty leadership on the outcome variables: effectiveness, extra effort, and satisfaction.

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This study revealed -- similar to others like it -- that transformational leadership variables contribute more to the outcome variables mentioned above than transactional or laissez-faire leadership styles.

One final point about Bass' discussion on transformational leadership should be noted: Bass, like Burns, understands the important role transactional leadership plays in the life of any organization. Fundamentally, they both agree that every effective leader displays each style of leadership to some degree. Bass (1997), clarifying what he wrote in 1985, writes

> that a greater amount of effort, effectiveness, and satisfaction is possible from transactional leadership if augmented by transformational leadership. The best of leaders reflect practices of transformational and transactional leadership (p.10).

Although there are different emphases in the various explications of the transformational leadership concept, they all are, at a general level, consistent with each other, and, in particular, consistent with Bass' theory and the instrument derived from that theory which will be used in this study. They certainly are consistent about the bottom-line of leadership, which is transformational in character. As the label implies, a transformational leader

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is, above all, an agent of change (Fisher, 1994; Hoover, 1991; Tichy & Devanna, 1986; Kuhnert, 1994; Bennis, 1984; Sergiovanni, 1984). "Their main function is to serve as a catalyst for change, but never as a controller of change" (Avolio, 1994, p.141).

Organizational Change and Reengineering

BPR, of course, changes everything - what is done, how it is done, and how it is managed. Consequently, Andrews and Stalick (1994) say of reengineering efforts: "The adage that significant change will not occur without organizational leadership and support is true for most improvement efforts, especially reengineering" (p.8).

Argyris (1990), one of the leading theorists in organizational change, suggests that one of the major tasks during a change effort is "getting people to let go of their old ways of doing things and accept new ones" (p.269). He also indicates that resistance to change is virtually inevitable.

Hammer (1996) suggests managers meet and manage resistance head on. He argues that the reasons for resistance depend on how people feel about the new situation, and the reasons may not be logical or analytical. Consequently, he, as well as other authors

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(see for example, Strebel, 1996), suggest treating the disease rather than the symptoms.

The literature on organizational change suggests an array of strategies for dealing with resistance to change. These strategies include the use of incentives, positive and negative; providing information to dispel uncertainty and fear; interventions to handle new interpersonal one-on-one connections required by the change; indoctrination to make change seem inevitable; and worker involvement to make people part of the effort to overcome it. Hammer (1996) states clearly several times that "all change is loss. Even when a change is for the better, there is still loss" (p.134). Change management can help organizations deal with such a loss.

According to Agocs (1997), resistance is one of the biggest reasons why some reengineering projects do not achieve the level of success the organization expects. She emphasizes that reengineering efforts make radical changes in an organization's culture and these changes in turn involve people. "We must remember that people have to execute the plans, perform the activities, and provide the interface to the customer" (p.924). Hence, Agcos argues, if how to change the behavior of an organization's human

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resources is not part of the plan, the reengineering effort will most likely not succeed.

Kotter (1995), reinforces Agcos' point. He notes that culture change does not come only as a result of a change in the system. It comes as a result of consistent change in what people feel about the system. He adds that "human beings must see that there is less pain and more pleasure associated with change than not changing" (p.64)

Champy (1995), extends the thinking of Kotter and Agcos by articulating how reengineering can affect people. He notes, for instance, that with reengineering, hierarchies may be reduced. The quality of an individuals' attachment to their work and to each other may be rearranged, as a result. Consequently, it seems apparent that leaders who can reorganize high morale teams focused on the needs of the emerging organization have the potential to meet with success.

Before organizations can effectively reengineer, they must do one fundamental thing -- learn. This notion of organizational learning is discussed in the following section.

Organizational Learning. The organizational learning construct has been used rather extensively during the past three decades in discussions on organizational change.

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(See for example: Cangelosi and Dill's (1965) book *Organizational Learning: Observations toward a theory;* and Michael's (1973), *Learning to Plan and Planning to Learn.* More recently Senge published *The Fifth Discipline* in 1990 and *The Dance of Change: The challenges to sustaining momentum in learning organizations,* in 1999. Senge's ideas have been exceedingly influential in terms of change processes as a learning process.

Not surprisingly, there is no single definition of a learning organization in the literature. Garvin (1993), for instance, defines a learning organization in terms of "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights" (p.23). On the other hand, Ross, Smith, Roberts and Kleiner (1994) promote this definition: "Learning in an organization means the continuous testing of experience, and the transformation of that experience into knowledge which is accessible to the whole organization, and relevant to its core purpose" (p.42).

Even though the conception of a learning organization has become a bit more specific over time, the term should probably be seen less as a set of specific prescriptions for production than as a heuristic tool, alerting us to

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potential problems associated with organizational change, which leaders can anticipate and develop strategies to manage.

The learning metaphor also alerts us to the problems with and potential of creating disequilibrium in an organization. Cognitive psychologists (Wheatley, 1999) tell us that all living things naturally seek to restore equilibrium during or after stress inducing evolutions like organizational learning. Consequently, a leader who attempts to change an organization -- especially in the dramatic ways associated with BPR -- should anticipate that a desire to avoid the stress generated by the work of learning and reengineering may be great.

Organizational Effectiveness. Much has been written about efficiency and effectiveness of organizations. Peter Drucker (1994) tells us that organizational efficiency is doing things right but organizational effectiveness is doing the right things. Organizational effectiveness is the central underpinning of business process reengineering -- destruction and reconstruction of organizations through their processes in order to do the right things right.

Organizations that were once hierarchical in structure are now more web-like in their design in an attempt to become more efficient and effective.

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In the era of business process reengineering, the requirement for organizational effectiveness -- to stay focused with and respond quickly to end-user needs -- increases exponentially. In order to respond to the financial, cultural and technological changes affecting the Department of Defense, more specifically, the Navy, a clearer focus on important priorities is critical. These priorities include the acquisition of new skills and the willingness to reconstruct organizations and processes to conduct the business of the Navy. On the other hand, normal Navy hierarchical power structures and stovepipes would not be able to respond quickly enough to the needs of a dynamic environment. However, the teamwork and collaboration of "lattice organizations" (Wheatley, 1994, p. 117) or "webs of inclusion" (Helgesen, 1995, p.10), eliminate stovepipe like processes and are now necessary to address the ever-changing needs of dynamic organizations. These webs of inclusion, because they are organic in nature, will configure differently with each organizations' objectives or primary mission. An important characteristic of "webs" is that they are in a continual state of adaptation. "Web-like organizations are especially apt to be driven by clearly articulated values, since a tight focus on mission is the glue that

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holds their flowing structures together" (p. 286). From the perspective of proactive and reflective human action, the principles -- accept chaos, share information, develop relationships, and embrace organizational vision -- are substantive in the business process reengineering and web models.

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CHAPTER 3 RESEARCH DESIGN AND METHODOLOGY

The main purpose of this study was to investigate the relationship between measures of leadership style and a number of measures associated with anticipated BPR outcomes. In order to discern if any relationships existed between leadership behaviors and DoN business process reengineering environment outcomes, the researcher collected and analyzed quantitative data.

Quantitative data were analyzed with the following research questions in mind:

(1) Is there a predominant leadership style among DoN BPR program leaders?

(2) Is there a relationship between leadership style and employee effort, employee satisfaction, employee effectiveness, and organizational effectiveness in DoN BPR environments?

(3) Is there a relationship between leadership style and the actual success of DoN BPR program outcomes?

In order to investigate Research Question 1, statistical estimation procedures were used to make inferences about a predominant leadership style within Department of the Navy business process reengineering

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organizations. In particular, inferential statistical procedures were employed to determine whether one of the four leadership styles (transformational; transactional; a combination of transactional and transformational; or laissez faire) predominated among leaders in the sample.

For answering Research Questions 2 and 3, linear regression models were developed and tested using multiple regression methods. Data from the sample were used to make inferences about the population at the 5% significance level. For example, the researcher wanted to learn to what extent leadership styles and certain demographic data were related to measures of organizational effectiveness, employee effort, employee satisfaction, employee effectiveness, and goal attainment in a DoN BPR environment. Data on perceived leadership behaviors, employee effort, employee satisfaction, and employee effectiveness were gathered through Bass and Avolio's Multifactor Leadership Questionnaire (MLQ). Information on perceived organizational effectiveness was gathered through the use of a supplemental survey that was adaptation of a survey developed by Mott (Uline, Miller, and Tschannen-Moran, 1998). Data on actual BPR target attainment (or lack of attainment) were gathered from mandated reporting sources via the region's Comptroller.

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Sample -- Site and Respondent Selection

Sites. Thirty reengineered programs were selected for study. A reengineered program, as defined in this study, is a naval business program (organization) whose processes and organizational structures have been reconstructed in order to reduce costs, decrease full time equivalent personnel, and increase organizational effectiveness and employee effort. The following California installations were used: Naval Southwest Region's complex in San Diego, and Marine Corps Base, Camp Pendleton, Oceanside. These sites were selected for the following reasons: (1) The reengineering initiatives in these organizations are less than two years old and initiatives in these sites are still in process; consequently, it is reasonable to attribute measures of impact to reengineering and the leaders who oversaw reengineering efforts rather than to other factors that may have occurred during an extended post-reengineering period. (2) In the spring of 1998, the Commander, Naval Region Southwest was directed by the Chief of Naval Operations to begin regionalization (see definitions). As a result, I was asked to represent the San Diego Naval Medical Center's logistic reengineering interest. In doing so, I had the opportunity to establish a solid working rapport with some of the leadership and

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consultants from the firm of KPMG, the firm hired to facilitate reengineering of Navy's southwest region. This rapport facilitated collection of information from study respondents during the study. (3) From the Fall of 1999 to Spring 2000, I did an internship with the consulting firm KPMG during their reengineering of business processes at Marine Corps Base, Camp Pendleton. During this internship, I had the opportunity to meet with several of the BPR project stakeholders, as well as the Commanding General of the installation. This process provided me a wealth of first-hand insight regarding BPR implementation, as well as an opportunity to indicate my desire to use this location for a study involving leadership and BPR projects. This contact proved extremely helpful in gaining access.

Respondents. The respondent pool consisted of 289 employees who work in either a reengineered Naval Region Southwest or a Marine Corps Base Camp Pendleton business program. Respondents worked on one of the 30-targeted programs discussed above. The study respondents consisted of a mix of civilian and military employees. Their job experience ranged from entry level to more than 15 years on the job. The study's response rate was 96.3%.

Respondents were asked to evaluate their respective program managers. Program managers are individuals

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(civilian or military) whose responsibilities include supervision of the work environment, the welfare of respondents, as well as steering a significant portion of an organization toward a "successful" course of activity. For study purposes, each of the 30 program units overseen by a program manager is considered a unit of analysis.

Sampling Methods. This research used a sample drawn from 30-targeted programs. The 30 programs were selected on the basis of convenience. This convenience sample was selected for the following reason: The Navy Region Southwest, which was selected for this study, provides coordination of base operating support functions for operating forces throughout this region (California, Arizona and Nevada); since the target region's area of responsibility is vast, the researcher opted to limit the sample to programs within a 50 mile radius of Commander, Navy Region Southwest (CNRSW).

The specific types of organizations selected in this 50 mile radius were: Freight and Transportation, Facilities Management, Morale Welfare & Recreation, Retail Supply, Social Services, Food Services, Security, Federal Fire organizations, Information Systems activities, and Occupational Safety. These types of organizations were selected due to the number of employees managed within

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these organizations. To be considered for selection, an organization had to have twenty or more employees. The researcher planned to obtain approximately 10 respondents from each of the thirty selected programs (organizations); hence, having at least twenty employees was desirable.

Although, more than thirty organizations met the above criteria (i.e., the types of organizations specified above with at least twenty employees and located within the above described 50 mile radius), some organizations were not selected because they were either not sponsored by their parent command (did not have permission to participate in the study) or organizational policy prohibited access due to the nature of the work performed at these sites. Given this, unit selections were made from only three major installations. The specific installations are not listed (named) in order to help insure respondent anonymity.

After the thirty-targeted programs were identified, the plan was to select 10 respondents from each of the thirty-targeted programs through probability sampling procedures. In other words, the portion of the population that the researcher examined during this study was determined by methods that insured that each member of the 30 programs sampled had an equal chance for selection. This selection method increased the possibility that findings from the

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study could be generalized to the population. Ary, Jacobs & Razavieh (1996) suggest the use of this systematic procedure for obtaining the sample.

To accomplish the goal of random selection, this researcher obtained an employee roster for each organization involved in the study, and then he assigned a four-digit number, in chronological order, to each name. Then, the researcher selected a number from a table of random numbers and found that same assigned number on the organizational roster. That number (person) was then selected as a part of the sample. Each respondent was selected using the previously mentioned method. Six individuals who had been selected chose not to participate and another five respondents returned incomplete surveys that had fewer than half of the questions answered.

In survey research, acceptable response rates vary somewhat by mode of administration. When surveys are delivered in person, researchers generally achieve higher response rates than they do for interviews conducted by telephone or by mail. A response rate of at least 80% is considered desirable for in-person surveys. Considering the response and completion rate had been greater than 80%, which the literature indicates as more than acceptable (Babbie, 1995; Dillman, 1978; Rea & Parker, 1997), the

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researcher saw no reason to employ missing data strategies. Given this, surveys with missing data or those that were not filled in were excluded from the research sample. Remaining surveys were 100% complete. As a result, the sample was made up of 289 respondents, a 96.3% response rate. The final sample breakdown is displayed in Table 1.

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Table 1

Types of Organizations Used For Sampling and Response Percentages

PROGRAM	RR	PROGRAM	RR
Site I Retail Supply	90%	Site XVI Food Services	100%
Site II Retail Supply	100%	Site XVII Food Services	80%
Site III Retail Supply	90%	Site XVIII Food Services	90%
Site IV Federal Fire	90%	Site XIX Safety	100%
Site V Federal Fire	100%	Site XX Safety	100%
Site VI Federal Fire	100%	Site XXI Safety	90%
Site VII Security	100%	Site XXII Fac. Management	100%
Site VIII Security	100%	Site XXIII Fac. Management	100%
Site IX Security	100%	Site XXIV Fac. Management	100%
Site X IT Systems	100%	Site XXV MWR	100%
Site XI IT Systems	100%	Site XXVI MWR	90%
Site XII IT Systems	80%	Site XXVII MWR	100%
Site XIII Social Services	100%	Site XXVIII Transportation	100%
Site XIV Social Services	90%	Site XXIX Transportation	100%
Site XV Social Services	100%	Site XXX Transportation	100%

Program: Unit of Analysis
Response Rate (RR): Site response rate. A response rate of 100% indicates 10 respondents, 90% indicates 9 respondents etc.

Making inferences from a sample is never quite satisfactory, but attempting to capture an entire population for study would not have been economically feasible. Consequently, a .05 significance level was used;

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significance levels were determined through the techniques articulated by True (1989) and Rea & Parker (1997).

Since the sample was drawn randomly and is relatively large, the researcher (and user of the research) can be confident in the results. For example, this research used *t*-tests and, with *t*-tests, significance is more difficult to determine when samples are small. A larger sample size makes it easier to uncover a significant relationship (True, 1989; Rea & Parker, 1997).

Access. First, a letter requesting permission to conduct a study (see Appendix A) was sent to the person in charge of each California site: Commander, Naval Bases Southwest Region, San Diego, and Commanding General, Marine Corps Base, Camp Pendleton, Oceanside. These individuals are ultimately responsible for ashore installations within the Navy Region Southwest and Marine Corps Base Camp Pendleton. The letter explained the scope and purpose of the study. Next, after permission to conduct the study was received from the Business Manager, Navy Region Southwest, a letter of inquiry requesting organizational information, otherwise known as a "data call", along with a copy of the letter from higher authority granting permission, was sent to the responsible data managers (see Appendix B). In particular, the "data call" solicited organizational

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documents used to report on business process reengineering fiscal status.

Appendices C, D and E, make up the material given to respondents. Each respondent package (cover letter with survey) was delivered in person by the researcher. The researcher had carefully weighed the cost (in effort and dollars) and benefits (high response rate) of delivering the respondent packages in person. In particular, this strategy gave the researcher an opportunity to personally describe, in a brief manner, the purpose of the study to respondents. Also this initial personal contact allowed respondents to associate, in a tangible way, the researcher to the study, thus personalizing the research project for participants. This personalization made it more likely that they would actually fill in and return the survey instrument. This assumption about personalization and its effect on return rate proved correct as indicated by the very high response rate. Some bias may have been introduced by using this approach. In particular, a few respondents may have felt unduly pressured to participate as a result of the "face-to-face" approach the researcher opted to use. The researcher attempted to control for this possible problem by making it clear to respondents that

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participation was strictly voluntary. Six individuals, in fact, chose not to participate - returning blank surveys.

Instrumentation and Other Measures

Multiple Leadership Questionnaire (MLQ). Transformational leadership has been touted as an integral component for successfully leading the work of people (Avolio, 1994). In many transformational leadership studies, Bass and Avolio's (1995) Multifactor Leadership Questionnaire (MLQ) has been used (Bass and Avolio, 1997). For this study, leadership style was identified through the use of the MLQ.

Bass and Avolio developed the MLQ in 1985 with the assistance of military officers, industrialist and educators as subjects. This instrument's primary use was to identify the leadership style of an individual based on subordinates' perceptions of their leader. At the time the instrument was developed, it was assumed that most military leaders were transactional in nature. This style of leadership can be characterized by the following sort of thinking: "You do that and I'll make sure you receive this" (e.g., pay or promotion). On the other hand, transformational leaders tend to individually consider a follower's needs for success, be it over-the-shoulder

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training, mentoring or classroom education. Also, transformational leaders are apt to encourage followers, by providing an increased knowledge of the organization's purpose, and to give up their self-interest for the good of the organization. Although it may be assumed that most military officers and industrial leaders display transactional leadership, a study of military officers and industrialists showed that transformational leadership generally had a more positive influence than transactional leadership. It was also determined that those who exhibited both transformational and transactional leadership behaviors were more effective than those who had exhibited a one-dimensional leadership style (Waldman, Bass and Einstein, 1985). The positive result associated with this combined leadership activity is often called the augmentation effect of leadership (Bass and Avolio, 1997).

Since 1985 the Multifactor Leadership Questionnaire has undergone a number of iterations to expand its scope to include Total Quality Management improvement programs for groups (Group Multifactor Leadership Questionnaire - GMLQ), team assessments (Team Multifactor Leadership Questionnaire - TMLQ) and the MLQ 5X instrument for research (Bass and Avolio, 1997). The latest version -- the MLQ 5X (short) modified by Bass and Avolio -- was selected and used for

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this study to measure leadership style. The instrument also measures an employee's perceptions of employee satisfaction, employee effort, and employee effectiveness.

The leadership style component of the MLQ 5X (short form) consists of 36 descriptive statements about the leader that are each rated by followers on a 5 point Likert response scale (0=not at all, 1=Once in a while, 2=Sometimes, 3=Fairly often, and 4=frequently, if not always). The employee must evaluate each statement and judge how frequently he or she observes the leader displaying the behavior in question. These questions are linked to nine underlying characteristics of leadership, and are shown in Table 2. In turn, the nine characteristics of leadership are associated with the constructs Transformational Leadership, Transactional Leadership, and Laissez Faire (non-leadership) style. In addition, as noted above, the literature indicates a potential for emergence of a fourth leadership style -- a combination of Transformational and Transactional. This combination, as noted, has been associated with the augmentation effect (Bass and Avolio, 1997). Table 2 illustrates the relationship that leadership characteristics share with varying leadership styles.

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Reliability and Validity of MLQ. The reliability and content validity of the MLQ was appraised using Partial Least Squares analysis (Bass and Avolio, 1995). To conduct this analysis, the MLQ authors opted to compute a variable's composite scale reliability to measure internal consistency, which is similar to Cronbach's alpha. Cronbach's alpha (alpha coefficient) is an index of reliability associated with the variation accounted for by the true score of the "underlying construct." According to Hatcher (1994), the underlying construct is a hypothetical variable set being measured. In particular, the alpha coefficient ranges from 0 to 1 and was used to describe the reliability of factors extracted from the multi-point formatted MLQ questionnaire. The higher the alpha score, the more reliable the generated scale. Nunnaly (1978) has indicated .70 to be an acceptable reliability coefficient; however, lower scores have been used as indicated below.

During this examination the standard reliability cut-off of .70 was used (Bass and Avolio, 1995). Additionally, examination of the average variance extracted by the instrument's construct variables was performed using an average cut-off variance of .50, which the literature recommends (Bass and Avolio, 1995).

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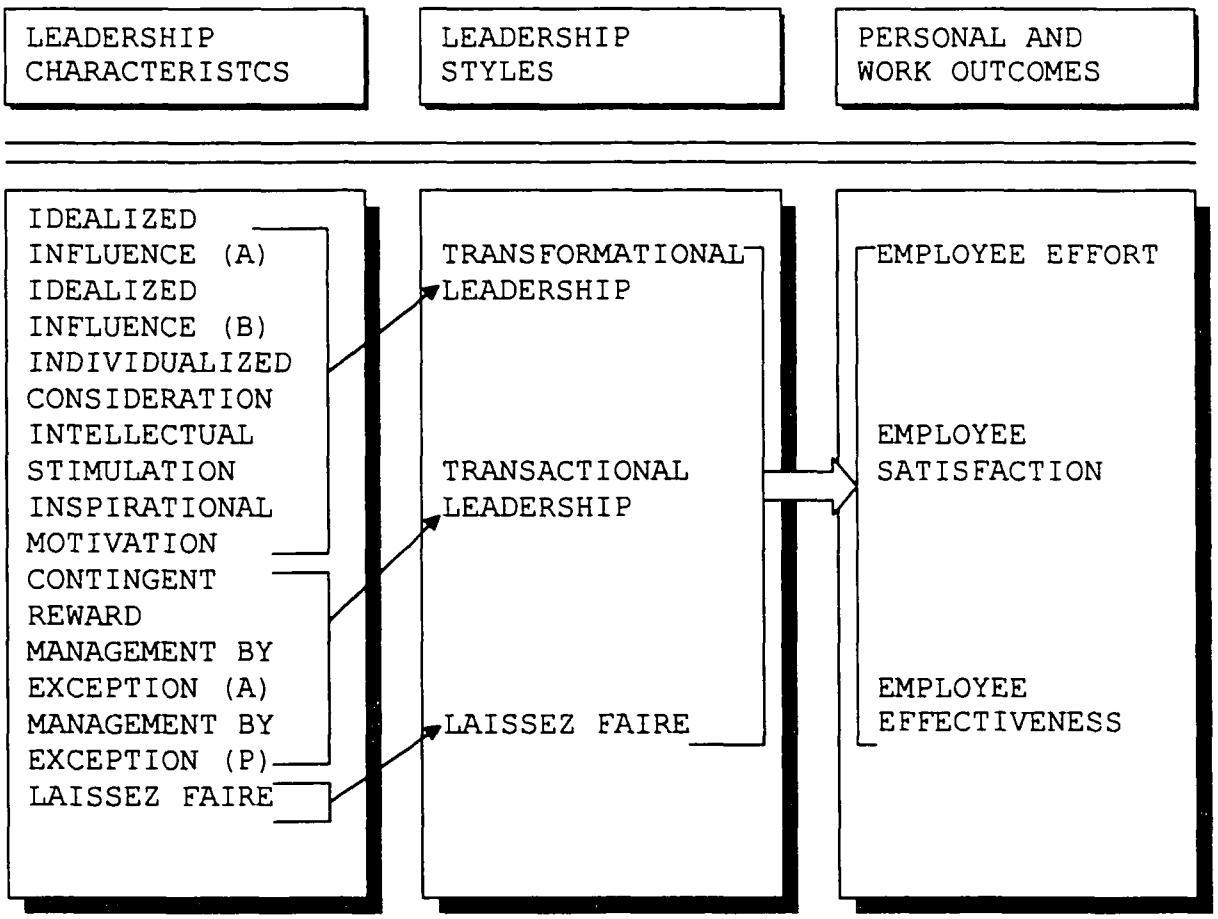
Composite scale reliability indices indicated that all constructs met the minimum cut-off requirement, .76 on the low end and .90 on the high end. All constructs except Manage By Exception-Active (MBEA) exceeded the criterion cut-off of .50 in terms of average variance extracted by the construct variables from indicators (Bass and Avolio, 1995). For MBEA, the average variance extracted was .46, although the composite scale reliability was .76 (Bass and Avolio, 1995).

Table 2

Leadership Characteristics



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Determining leadership style from MLQ ratings. The following method was used to determine leadership style from data collected. First, mean scores for each characteristic for each leader were determined by averaging the responses from respondents. Survey authors provided percentile ranks for these scores (Bass and Avolio, 1995). Additionally, personal communication with one of the authors of the survey (B. Avolio, personal communication, September, 11, 2001), provided information that allowed the researcher to convert raw-mean scores into percentiles. Table 3 provides an example of this methodology.

Table 3

Transactional Leadership Score for Leader 1 (example):

Characteristic	Mean Score	Percentile Rank
Contingent Reward	2.2	55
Manage. By Exc (A)	2.6	65
Manage. By Exc (P)	2.4	60
Average Rank	2.4	60

The following decision rules for determining varying perceived leadership styles were then utilized:

Decision Rule 1: A minimum percentile rank of 55% was chosen as the cut-off for categorizing a leader as transformational or transactional. This cut-off was based on information received from the author of the survey (B. Avolio, personal communication, September 11, 2001). The

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author's recommendation was based on the MLQ scales for normative data reported by Bass and Avolio (1995) based on 2,080 followers rating their immediate superiors in military, government, and industrial organizations. Leaders exceeding the established cut-off were labeled with that leadership style.

Decision Rule 2: To determine if a leader exhibited an augmentation (combo) type of leadership style, both the transformational and transactional leadership style percentiles had to meet or exceed a minimum cut off of 55%. Stated another way, in order for a program leader to be identified as someone who is perceived to practice an augmentation type of leadership style, a program leader's assigned transformational and transactional scores must meet or exceed 55%.

Decision Rule 3: To determine if a perceived Laissez Faire (LF) leadership condition was present, the following criterion was established: Transactional and Transformational leadership scores simply needed to be less than 55%.

The rationale for establishing these conditions was twofold: (1) perceived transactional and transformational leadership scores below 55% indicate an absence of transactional and or transformational leadership

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activities, and (2) by definition, laissez faire leadership indicates the absence of leadership, the avoidance of intervention -- an inactive and ineffective form of leadership activity. Therefore, program leader's who were perceived to exhibit a lack of TA or TF leadership behaviors (scores below 55%) were categorized as laissez faire. All decision rules lead to characterization of one type of leadership style.

Measuring perceptions of employee effort, effectiveness, and satisfaction with the MLQ. In addition to determining the transformational, transactional and laissez faire dimensions of leaders, several items in the questionnaire measured perceptions of certain organizational outcomes. Specifically, some survey items assessed the extent to which followers perceived they put forth extra effort, were satisfied with their work environment and perceived themselves as effective within the organization. The average ratings on the five point Likert scale measures for each unit were used as dependent variables in testing the hypothesis linking leadership style and perceived organizational outcomes (research question two).

Measuring organizational effectiveness. In addition to examining the organizational outcome variables addressed by

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the MLQ, an instrument created from Mott's index (Uline, Miller, and Tschannen-Moran, 1998) asked respondents five additional questions regarding perceived organizational effectiveness. These five questions, questions 5-9 of Appendix E, focused on employee perceptions of production level, production quality, available resources, innovations, and the ability to deal with a changing environment, such as business process reengineering or enterprise resource planning. Each question was scored on a 5 point Likert response scale (0=not at all, 1=Once in a while, 2=Sometimes, 3=Fairly often, and 4=Frequently, if not always), and then aggregated to create the fourth dependent variable used in research question 2.

Measuring demographic variables. The four demographic variables describing employees in the BPR program units listed above were collected through the use of the survey items presented in Appendix E; these items were administered at the same time as the MLQ. These items ask for a respondent's age, gender, and whether the respondents were a civilian or military employee. Respondents were also asked to identify their employment capacity (i.e., GS-6/7, E7-E9, 01-03, etc.).

Determining BPR success. Research of this type customarily uses one of two different general strategies

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for measuring BPR outcomes: the perceived level of success or the degree of actual target attainment (Grover et al., 1995). Under the perceived level of success approach, which is one of the most widely used strategies, respondents customarily indicate their perception of BPR success by using a Likert scale instrument (Delone and Mclean, 1992). There is, however, a major shortcoming with this approach: perceptions do not always correlate with actual performance measures (Grover, et al., 1995). To compensate for this shortcoming, this study used not only the perceptions-of-effectiveness data described above but also measures of actual attainment of reengineering targets as a dependent variable. These data are described below.

By definition, business process reengineering requires measurable objectives. In particular, reengineering objectives are targeted on attainment of "dramatic improvements in critical, current measures of performance" (Hammer and Champy, 1993). Moreover, business process reengineering, at the outset, requires "crystal clear" performance measures and targeting objectives. As the literature review in Chapter 2 illustrates, organizations reengineer in different ways, placing different emphases on which objectives are a priority for organizational goal attainment. In this study, for example, some organizations

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used "comprehensive goals" while others had a "primary" reengineering target (Grover, et al., 1995).

The distinction between comprehensive and primary measures can be illustrated with two examples. For the purpose of this study, the identifier BPROA indicates a focus on the attainment -- or lack of attainment -- of multiple goals or targets identified for a particular unit. More specifically, the BPROA calculation was based on a set of weights or priorities assigned by the organization to various reengineering objectives established at the outset. The organization, facility management, is used to illustrate the BPROA calculation method. Shown in Table 4.

Table 4

Comprehensive Target Example

REENGINEERED PROGRAM	TARGET REDUCTION (000)	ACTUAL REDUCTION (000)	% SHARE	ACTUAL TARGETED % SHARE
Family Housing	35,000	33,000	.25	.24
Facility Services	50,000	56,000	.36	.40
Maintenance & Repair	27,000	27,000	.19	.19
Utilities	16,000	16,000	.11	.11
Environmental	8,000	8,000	.06	.06
Manpower Cost	4,000	4,000	.03	.03
TOTAL	140,000	144,000	100%	103%

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To determine if facility management had attained the desired BPR success level, the researcher determined the aggregate product for those reengineered targets, expressed in the form of an actual targeted percentage share. The targeted percentage share is based on organizationally assigned priorities as they relate to reengineered processes and desired goal attainment.

In the example provided above, facility management exceeded their fiscal goal -- achieving approximately $4 million in savings above the initial BPR target, and achieving an actual targeted share of 103%. The formula for calculating BPROA can be found in Table 5.

Table 5

Comprehensive and Primary Target Formulas

DEPENDENT VARIABLE	FORMULA	REFERENCE
BPROA	Σ W x A/T	Grover, et al., 1995
BPRP	A/T	Grover, et al., 1995

Note. Abbreviations used in the table are BPRP = Primary BPR target attainment; BPROA= Overall BPR target attainment; W = Weight (percentage assigned by organization); A= Attainment (actual performance level); T = Target (planned performance level).

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To illustrate BPRP, the comptroller organization will be used as an example. The comptroller's office is held accountable for a number of things, including timely distribution and accurate execution of an installation's budget and payroll systems. However, for the purpose of this illustration, the Comptroller has a primary (singular) reengineering target. In this example, the comptroller's office plans to implement automated payroll system (primary goal) and forecasts a fiscal year savings of $147,000. Last year the comptroller's office allocated and spent $230,000 in payroll management. Therefore, this fiscal year's allocation for payroll management is $83,000. However, the department actually spends $85,000, saving only $145,000. The BPRP would be calculated by dividing actual expenditures by the targeted expenditures, which in this example works out to 99%. Table 6 provides further illustration of this example.

Table 6

Primary Target Example

REENGINEERED PROGRAM	ACTUAL (000)	TARGET (000)	A/T
Pay roll automation	145	147	99%

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Using both methods for determining success, proved to be necessary. In particular, some units were measured with the comprehensive measure while others were measured with the primary method. However, using BPROA for determination of overall (comprehensive) goal attainment and BPRP for primary goal attainment, the two formulas provided a method for evaluating two different types of organizational BPR efforts, as well as provide a single percentage level of accomplishment for each unit under study.

The Department of Defense requires all of its business process reengineered organizations to submit monthly, quarterly and annual reports on fiscal metrics attainment to higher authorities for review. Year-end reports for fiscal year 2000 were used for this study. Data for the outcome variable in research question 3 were collected through analysis of those preexisting reports.

Data Analysis and Hypotheses Testing Methods

To reiterate, Research Question 1 asked if there was a predominant leadership style in the environment being studied. Research Question 2 asked whether a relationship existed between a BPR program leader's leadership style and measures of perceptions that relate to employee effectiveness, effort, satisfaction, and organizational

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effectiveness as perceived by followers. Research Question 3 asked whether a relationship existed between leadership styles of DoN BPR program leaders and measures of actual BPR goal attainment.

Further discussion on analysis of each research question and hypothesis is included in the sections that follow.

Answering Research Question 1. To answer research question 1, the researcher used a statistical test of proportions to see if the differences in leadership style existed in the population under study. In this test, the null hypothesis of no differences among leadership styles was compared to the alternate hypothesis that a dominant leadership style existed. In this case, the null hypothesis is that $\pi_1 = \pi_2 = \pi_3 = \pi_4 = .25$.

To test the null hypothesis, the difference between the sample portion and the hypothesized value of .25 was first calculated. This information was then used to construct the following test statistics:

$$z = \frac{p - \pi - \frac{.5}{N}}{\sigma_p} \quad \text{when } p > .25$$

$$z = \frac{p - \pi + \frac{.5}{N}}{\sigma_p} \quad \text{when } p < .25$$

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Where N is the sample size, σ_p is the standard error of a proportion, and $\frac{.5}{N}$ is the correction for continuity. Next, a normal distribution z table was used to determine the two-tailed probability value for each result. After the probability was computed it was then compared to the significance level of .05 and if the probability value is less than the significance level, the effect is considered to be statistically significant, rejecting the null hypothesis.

Answering Research Question 2. Research question 2 was broken down into four hypotheses. Each of these hypotheses examines a different measure of employees' perceptions about the success of the BPR program environment. Null hypothesis 2(a) stated that there is no statistically significant relationship between a DoN BPR program leader's leadership style and perceptions of employee satisfaction (ES). Null hypothesis 2(b) stated that there is no statistically significant relationship between a DoN BPR program leader's leadership style and employee effectiveness (EE). Null hypothesis 2(c) stated that there is no statistically significant relationship between a DoN BPR program leader's leadership style and employee effort (EE_2). Null hypothesis 2(d) stated that there is no

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statistically significant relationship between a DoN BPR program leader's leadership style and employees' perceptions of organizational effectiveness (OE). Each null hypothesis was tested using a linear regression model. The general purpose of linear regression is to learn more about the relationship between several independent variables and a dependent variable such as employee satisfaction in hypotheses 2(a). Further, linear regression allowed the researcher to ask and answer the general question of "what was the best predictor."

Leadership dummy variables. Because leadership style is a categorical variable, with leaders usually taking on only one style, dummy variables were used. In doing so, an "on or off" switch was created for each leadership style.

The four dummy variables for leadership styles are TF (Transformational), TA (Transactional), LF (Laissez Faire), and TF/TA (exhibiting a strong tendency toward both Transformational and Transactional leadership styles).

TF	**TA**	**LF**	**TF/TA**	
1	0	0	0	= 1
0	1	0	0	= 1
0	0	1	0	= 1
0	0	0	1	= 1

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The matrix above illustrates why one of the four dummy variables was dropped from the regression equation. If one variable was not dropped, perfect collinearity would exist and the procedure of estimation of the coefficients would have broken down.

The general regression model that supports the examination of the relationship between leadership style and business process reengineering takes this appearance: SUCCESS = F (LEADERSHIP STYLES, AGE, GENDER, EMP, EXP).

The demographic variables experience, age, gender, and employment status in social science research are known as common denominators when investigating perceptions and behaviors. Given this, the researcher presumed that the various success measures were related to leadership style, as well as other variables describing the workforce such as average experience level (EXP), average age (AGE), proportion of the unit of each gender (GENDER), and employment (EMP) status, military or civilian. Leadership styles were determined by using the measuring methods explained earlier in this Chapter.

The following regression equations were estimated:

$$H_0\ 2a{:}ES = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GENDER + \beta_6 EMP + \beta_7 EXP + \mu$$

$$H_0\ 2b{:}EE = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GENDER + \beta_6 EMP + \beta_7 EXP + \mu$$

$$H_0\ 2c{:}EE_2 = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GENDER + \beta_6 EMP + \beta_7 EXP + \mu$$

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H_0 2d: $OE = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GENDER + \beta_6 EMP + \beta_7 EXP + \mu$

After these equations were estimated, it was important to discern how well the regression model explained variation in the dependent variables. The coefficient of determination, otherwise know as R^2, is a statistic that is widely used to perform this process, since it represents the percentage of the variation in the dependent variable that can be explained by the variability in the regression model's independent variables. Stated another way, R^2 explained how much of the variation in *Y* can be explained by the independent variables in the model, as opposed to random variation.

Leadership style being the focal point of this research, it was important to consider more tests: (1) to determine the effects of each leadership style on the dependent variables, and (2) to evaluate if leadership style had any effect on outcomes.

In order to determine if one or more of the leadership styles had a statistically significant effect, the *t*-statistic for each variable was calculated using the following formula:

$t_k = \beta_k - 0/SE(\beta_k)$, and then compared to the critical value from the *t*-distribution.

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The null hypothesis was rejected when the value of T_c was less than the observed t-statistic (t_k). On the other hand, the null hypothesis was retained if T_c was greater than the observed t-statistic.

At this point it was prudent to evaluate the success of the regression analysis. This evaluation was accomplished by testing for the effects that a subset of independent variables had on the regression equation. For example, in the following regression analysis measuring organizational effectiveness: $OE = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GENDER + \beta_6 EMP + \beta_7 EXP + \mu$, to see if leadership style had an effect on success, the null hypothesis: H_0: $\beta_1 = \beta_2 = \beta_3 = 0$ was tested. The first step was to compute an F-statistic for both the unrestricted regression (UR): $OE = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GDR + \beta_6 EMP + \beta_7 EXP + \mu$ and the restricted regression (R): $OE = \beta_0 + \beta_4 AGE + \beta_5 GDR + \beta_6 EMP + \beta_7 EXP + \mu$, where the difference between the two models is that the unrestricted model contained all the variables of interest, while the restricted variable contained all the variables except the leadership ones. To conduct this test, the researcher ran both models then used the R^2 from each of these models to calculate the following F-statistic,

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$$F = \frac{(\bar{R}^2_{UR} - \bar{R}^2_{R})\ Q}{(1 - \hat{R}^2_{UR})/N-(k + 1)}$$

Q = # of variables in subset
N = Sample size
k = independent variables

which was then compared to the critical value from the F-distribution. As such, this test allowed the researcher to determine if a particular subset of explanatory variables had a statistically significant influence on the outcome variables: employee effectiveness, employee effort, employee satisfaction, and organizational effectiveness.

Answering Research Question 3. Research Question 3 and hypothesis 3, examined measures of actual BPR outcomes. Null hypothesis 3 stated that there is no statistically significant relationship between leadership styles of DoN BPR program leaders and the actual success of BPR programs. The measure of actual success was determined in two different ways, (as mentioned earlier in this chapter), however, the outcome metric for each unit of analysis provided a singular dependent variable for evaluation.

The same general regression model used to explain perceived success was used to explain actual success. ACTUAL SUCCESS = F (LEADERSHIP STYLES, AGE, GENDER, EMP, EXP)

Taking into account the categorical nature of the leadership variable and the problem of perfect-collinearity

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explained in the section on leadership dummy variables above, the model was specified as follows:

$$H_0\ 3:\ AS = \beta_0 + \beta_1 TF + \beta_2 TA + \beta_3 COMBO + \beta_4 AGE + \beta_5 GENDER + \beta_6 EMP + \beta_7 EXP + \mu$$

As with Research Question 2, evaluations of t-statistics were conducted on both leadership and demographic variables in order to determine the significance of their influence on the outcome variable for attained organizational success. Additionally, the coefficient of determination (R^2) was examined to measure the goodness-of-fit for the regression model used to answer research question 3.

Analysis and Methods Summary

This study's methodology focused on the theory that BPR outcomes result from perceived leadership activities of program leaders. The Multifactor Leadership Questionnaire was used to collect information about the perceptions of followers on their respective program leaders' leadership behaviors. An additional instrument was used for collecting perceived organizational information and demographics. Preexisting reports provided information to determine actual unit success. In doing so, however, two methods were employed -- one for evaluating units with

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multiple reengineering targets and another for evaluating units with a singular reengineering effort. This approach provided a single dependent variable for regression analysis of actual unit success. For testing the first hypothesis, this research used a test of proportions. For testing hypotheses 2 and 3, this research used multiple regression procedures and assorted statistical tests.

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CHAPTER 4 RESULTS

The primary purpose of this study was to answer the following research questions:

(1) Is there a predominant leadership style among DoN BPR program leaders?

(2) Is there a relationship between leadership style and employee effort, employee satisfaction, employee effectiveness, and organizational effectiveness in DoN BPR environments?

(3) Is there a relationship between leadership style and actual success of DoN BPR program outcomes?

In this chapter both descriptive and inferential techniques are used to answer these research questions. This discussion of findings is prefaced by a brief presentation of descriptive data about the 30 reengineered sites, the units that were studied, and respondents who supplied data about perceived employee satisfaction, employee effort, employee effectiveness, organizational effectiveness, and actual success. After this discussion, analyses of multiple regression techniques are used to address the second and third research questions.

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Characteristics of the Reengineered Organizations and Respondents

A total of thirty organizations located in the Navy's Region Southwest participated in this study. Each of the thirty organizations used for this study recently underwent a business process reengineering effort of some magnitude. Three each -- for a total of thirty -- of the following 10 types of organizations were selected for this study: facilities management, security, morale welfare & recreation, federal fire, safety, retail supply, social services, information systems, food services, and freight transportation. The sample breakout for the two types (comprehensive and primary) of BPR focused organizations was: 9 (3-facility management, 3-retail supply, and 3-food service) with comprehensive targets and 21 organizations with primary BPR goals. For purposes of continuity, this strategy -- concentrating on services organizations -- proved helpful while reviewing organizational reports. The methods described in the section on determining BPR success in Chapter 3, were used for determining levels of BPR accomplishment for organizations with comprehensive (multiple) goals and primary (singular) goals.

The research respondents were those working in the thirty reengineered programs. The intended sample

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consisted of 300 employees (both civilian and military) randomly selected from the Commander, Navy Region Southwest's (CNRSW) manpower document.

After eleven weeks and six days, 294 completed surveys were collected after I went the respondents' places of employment and personally requested respondents' participation, survey responses were compiled for analysis.

Although, 300 surveys were distributed (300 respondents where approached), six individuals elected not to participate (returned blank surveys) and five other collected surveys were deemed invalid because more than 50% of the questions were unanswered. As a result, the sample size was reduced to 289, yielding a response rate of 96.3 percent. All of the remaining 289 surveys were complete. This high response rate may be attributed to the researcher's willingness to make multiple visits to each respondent for survey collection.

The employee roster or document from which respondents were selected lists their occupation status (military or civilian), position or rank, program (i.e., Morale, Welfare and Recreation or Security), and geographical location. To gather the remaining survey demographic information, questions asked the respondent's age, gender, employment and experience level. Based on survey data, it was

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determined that the average age for respondents was 44.3 years with a mean experience level of GS5/6 (E-6 military). Out of the 289 respondents, 113 (39.1%) were female and 176 (60.9%) were male. The male proportion of this sample was used for regression analysis during this study. The sample employment proportions were 68.2% (197) civil service and 31.8% (92) military. The civil service proportion of the sample was used for regression analysis during this study.

Description of the Data

Tables 7, 8, 9 and 10 summarize descriptive findings about the sample, leadership style, perceived outcome variables, and actual success, respectively.

In particular, Table 7 provides the averages, minimums, maximums, and standard deviations for the variables employee effectiveness, employee effort, actual organizational success, employee satisfaction, organizational effectiveness, transformational leadership, transactional leadership, and laissez faire leadership. In the case of sample leadership means, transactional (51.36) and laissez faire (21.13) leadership styles were below established instrument norms (Bass and Avolio, 1995). Further analysis of this data reveals that the sample mean for transformational leadership exceeds the means for other

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leadership styles considered within the study. This initial review of leadership style data may provide insight for answering the first research question regarding predominance of leadership styles within the study. However, further investigation is required in order to unearth if a statistically significant difference exists. Table 7 provides an overview of the descriptive data as it relates to perceptual observations made by followers on their respective program leaders across the sample.

Table 7

Descriptive Statistics for Sample

	N	Minimum	Maximum	Mean	Std. Deviation
Transformational leadership	30	34.00	76.00	58.83	10.46
Transactional leadership	30	33.00	63.00	51.37	7.58
Laissez fare leadership	30	1.00	38.00	21.13	9.35
Employee effectiveness	30	31.00	85.00	62.43	13.95
Employee effort	30	41.00	86.00	68.56	11.18
Employee satisfaction	30	38.00	93.00	72.03	13.81
Organizational effectiveness	30	62.00	86.00	72.22	5.39
Actual organizational success	30	84.00	103.00	96.43	4.96

Table 8 provides the percentages and standard deviations by unit of analysis for the four perceived leadership styles under study. The four leadership styles are: transformational, transactional, laissez faire and a combination of transactional transformational.

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Note the large variation between the leadership style scores among organizations. This variation could indicate a wide degree of perception among units. However, this descriptive overview reveals evidence that a preponderance of units (15 of 30 organizations) perceive their program leader's leadership style as a combination of transactional and transformation. On balance, 9 of 30 units perceive their leaders as laissez faire, 4 of 30 perceive them as transformational, and the remainder (2 of 30), perceive their respective program leaders as those who exhibit transactional leadership tendencies. The following identifiers will be used to categorize unit leaders' leadership style in Table 8: C for combination; TF for transformational; TA for transactional; and LF for laissez faire.

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Table 8

Perceived Leadership Style Percentages and Standard Deviations by Organization (Unit of Analysis)

Unit of analysis	Transformational Leadership		Transactional Leadership		Laissez Faire Leadership		Unit of analysis	Transformational Leadership		Transactional Leadership		Laissez Faire Leadership	
	M	SD	M	SD	M	SD		M	SD	M	SD	M	SD
Site 1 LF	53	23.8	53	24.7	36	33.5	Site 16 TA	53	22.6	55	23.8	23	33.4
Site 2 C	65	10.6	55	12.3	20	20.4	Site 17 LF	34	14.5	33	11.7	27	23.3
Site 3 LF	40	19.5	39	15.1	23	23.5	Site 18 C	70	14.9	62	15.7	14	21.3
Site 4 C	72	14.7	62	20.4	14	22.2	Site 19 LF	54	23.8	48	14.9	21	23.6
Site 5 TF	61	21.8	53	23.5	24	32.8	Site 20 C	63	15.9	59	19.2	16	21.6
Site 6 LF	44	22.3	41	15.4	21	23.3	Site 21 C	64	24.8	57	24.8	17	23.7
Site 7 C	57	27.4	58	21.4	26	29.2	Site 22 LF	44	23.2	48	20.6	38	30.6
Site 8 C	63	15.9	59	18.2	16	21.6	Site 23 C	55	14.6	59	19.1	14	22.1
Site 9 C	76	21.5	61	13.2	5	8.1	Site 24 TA	50	29.3	61	24.5	21	22.3
Site 10 C	62	17.3	56	23.1	23	19.4	Site 25 C	67	17.1	57	21.1	24	21.1
Site 11 TF	61	18.3	54	20.6	25	34.9	Site 26 C	73	18.4	56	10.8	1	.27
Site 12 LF	53	26.1	44	12.8	28	24.3	Site 27 LF	54	22.5	50	25.1	31	32.9
Site 13 C	63	15.9	59	19.2	26	21.6	Site 28 TF	58	16.1	52	19.9	35	30.7
Site 14 TF	58	24.4	53	21.6	11	12.6	Site 29 LF	44	23.2	38	11.3	23	12.6
Site 15 C	70	14.1	63	14.4	13	21.5	Site 30 C	71	14.1	60	15.4	11	21.5

C=combo leadership, LF=laissez faire, TF=transformational leadership, and TA=transactional leadership.

Table 9 provides a comparison between organizations within the sample. This table highlights the varying averages and standard deviations on each of the perceived outcome variables of: employee effectiveness, employee effort, employee satisfaction and organizational effectiveness. In particular, sample standard deviations, which are popular measures of dispersion, appear to be relatively small. On average, these relatively small

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standard deviations indicate that survey respondents' perceptions are relatively consistent within their respective organizations (units of analysis), increasing the possibility of obtaining meaningful parameter estimates in the regression analysis.

Table 9

Perceived Outcome Variable Percentages and Standard Deviations

Unit of Analysis	Employee Effectiveness		Employee Effort		Employee Satisfaction		Organizational Effectiveness		Unit of analysis	Employee Effectiveness		Employee Effort		Employee Satisfaction		Organizational Effectiveness	
	M	SD	M	SD	M	SD	M	SD		M	SD	M	SD	M	SD	M	SD
Site 1	71	27.9	66	28.1	75	29.9	68	22.6	Site 16	70	26.3	69	26.5	75	28.2	67	21.5
Site 2	75	27.1	77	17.9	84	23.6	82	13.1	Site 17	31	19.2	50	24.5	38	29.1	67	13.3
Site 3	37	23.4	53	33.2	51	36.1	67	14.1	Site 18	69	19.1	84	14.1	93	11	76	19.4
Site 4	78	11.7	81	16.2	90	11.1	72	18.2	Site 19	57	37.2	61	32.1	69	37.6	59	5.6
Site 5	64	31.2	64	28.1	69	31.8	70	22.3	Site 20	54	26.4	71	27.2	66	27.1	73	14.3
Site 6	41	24.3	56	3.52	54	34.8	69	13.5	Site 21	64	24.1	64	28.1	74	29.6	62	23.4
Site 7	60	32.2	65	32.8	70	37.3	67	17.6	Site 22	60	33.9	61	28.7	65	36.2	74	14.1
Site 8	54	26.4	71	27.2	73	30.6	71	14.3	Site 23	56	26.6	70	27.6	70	28.9	74	13.7
Site 9	81	14.2	79	15.2	75	13.2	87	19.1	Site 24	47	30.6	57	31.3	55	36.4	68	16.5
Site 10	62	29.4	64	28.5	70	32.3	69	20.1	Site 25	65	20.1	78	22.8	79	22.1	72	20.7
Site 11	83	14.9	79	12.1	87	11.7	86	14.7	Site 26	84	10.8	83	14.4	86	16.1	78	10.9
Site 12	60	39	63	33.5	66	42.1	69	4.9	Site 27	64	31.2	60	25.7	70	13.2	71	22.3
Site 13	64	26.4	71	26.2	71	30.6	73	14.3	Site 28	85	15.6	82	11.5	89	12.4	83	13.3
Site 14	66	25.6	64	26	67	29.9	66	19	Site 29	41	28.8	50	29.9	50	36.8	66	9.4
Site 15	71	20.4	85	14.1	89	12.4	75	18.3	Site 30	72	22.3	86	12.1	89	10.2	76	26.3

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Table 10 provides a summary of actual organizational goal attainment for each participating site within the study. The participating sites were closely monitored by Regional supervisors and consulting teams, it was no surprise that more than 25 of the 30 organizations had an actual fiscal goal attainment of 90% or above. This data indicates that from a fiscal perspective, sampled organizations, for the most part, attained established BPR fiscal targets. Note: To reiterate, actual organizational (fiscal) success was determined in two ways: for organizations with more than one prioritized fiscal BPR target, the "comprehensive" formula described in Chapter 3, was used to determine actual success. For organizations with a single BPR fiscal target, however, a "primary" formula was used for determining actual BPR success. Each formula (comprehensive and primary) provided the same type of quotient (percentage value) for each organization under study. In turn, these percentage values provided a single outcome variable that was subsequently used for regression analysis, answering the third hypothesis.

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Table 10

Actual Success Percentages by Organization

Unit of Analysis	AS%	Unit of Analysis	AS%	Unit of Analysis	AS%
Site 1	98	Site 11	100	Site 21	88
Site 2	89	Site 12	102	Site 22	99
Site 3	86	Site 13	99	Site 23	99
Site 4	99	Site 14	100	Site 24	98
Site 5	100	Site 15	100	Site 25	93
Site 6	100	Site 16	95	Site 26	90
Site 7	98	Site 17	99	Site 27	97
Site 8	100	Site 18	96	Site 28	91
Site 9	92	Site 19	98	Site 29	84
Site 10	101	Site 20	99	Site 30	103

Findings Related to Research Questions/Null Hypotheses

The second part of the summary of results chapter presents findings about the null hypotheses articulated in Chapter 3. These findings relate directly to each of the research questions that guided this study.

Results Related to Research Question 1

As described in the previous section, the perceived leadership style proportions of leaders in the 30 organizations studied were as follows: Transformational - 4 of 30; Transactional - 2 of 30; Combination (consisting of transformational and transactional elements) leadership - 15 of 30; and Laissez Faire - 9 of 30. The results are provided in Table 11.

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Table 11

Leadership Style Proportions

LEADERSHIP STYLE	H_0	PROPORTION	RESULT
Transactional	.25	.07	(2.0)
Transformational	.25	.13	1.30
Combo Leadership	.25	.50	2.92
Laissez Faire	.25	.30	.42

A test of proportions was performed with a level of significance of .05. The null hypothesis for Question 1 specifies the value for each perceived leadership style within the sample to be equal to one another. Given that there are four leadership styles under consideration, the null hypothesis reduces to: H_0: TF = TA = LF = COMBO, while the alternative hypothesis is that at least two of them are not equal. As expected, the null hypothesis that no statistically significant and predominant leadership style exists among DoN BPR program leadership was rejected, with the combo style leadership present in 50% of the units and transactional leaders in only 7 percent.

Results Related to Research Question 2

Research Question 2 was used to determine whether relationships exist between the perceived leadership styles of program leaders and the outcome variables: employee satisfaction, employee effectiveness, employee effort,

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employee satisfaction, and organizational effectiveness. The following sections summarize the product from the employees' responses to the survey.

Correlation Coefficient Matrix. Table 12 provides a correlation matrix of variables examined in this study. An inspection of Table 12 reveals, with the exception of laissez faire, that all perceived leadership styles have a positive and statistically significant correlation with each of perceived outcome variables in the MLQ at a .01 level of significance. The previously mentioned leadership and outcome variable correlations range from .75 to .90, which is indicative of a very strong overall relationship. Since transactional and transformational leadership comprise the combo style of leadership, each one of these leadership variables has a consistently positive and statistically significant correlation with one another, as expected. The strength of correlations with organizational outcomes virtually disappears in the case of laissez faire. The actual success variable has a generally weak and occasionally negative association with leadership approaches.

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Table 12

Coefficient Correlation Matrix

	EE	EE_2	ES	AS	TA	TF	LF	COMBO	OE
EE		.83**	.92**	-.03	.61**	.75**	-.10	.80**	.64**
EE_2	.83**		.95**	.07	.77**	.89**	-.43**	.88**	.70**
ES	.95**	.93**		.02	.75**	.87**	-.30	.90**	.65**
AS	-.03	.07	.02		.23	.05	.13	.04	.02
TA	.61**	.77**	.75**	.23		.85**	-.45*	.83**	.31
TF	.75**	.89**	.87**	.05	.85**		-.62**	.92**	.44*
LF	-.10	-.43*	-.30*	.13	-.45*	-.62**		-.52**	-.04
COMBO	.80**	.88**	.90**	.04	.83**	.92**	-.52**		.37*
OE	.64**	.70**	.65**	.02	.31	.44*	-.04	.37*	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Employee satisfaction. A multiple regression was calculated to predict a Department of the Navy program leaders' impact on employee satisfaction in a business process reengineered organization, based on the leaders' leadership style and the organizational composition of gender, age, experience, and employment (military or civilian). Table 13 provides a comprehensive summary of regression results for the dependent variable employee satisfaction.

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Table 13

Regression Results for Employee Satisfaction

Dependent Variable: Employee Satisfaction
Method: Least Squares
Sample: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TF	14.49	5.74	2.52	.02
TA	-1.11	7.20	-.15	.88
COMBO	12.40	4.60	2.70	.01
GENDER	-.20	.14	-1.43	.15
AGE	-1.23	.78	-1.58	.13
EXP	18.21	5.69	3.20	.00
EMP	.20	.24	.83	.41

R-squared	.70	Sum squared regression	3858.31
Adjusted R-squared	.60	F-statistic	7.22
S.E. of regression	28.28	Prob (F-statistic)	.00
Sum squared resid	1678.65	S.E. of estimate	8.74

A significant regression equation was found ($F(7,22)=7.22$, $p < .00$), with an R^2 of .70, suggesting that 70 percent of the variation in employee satisfaction was explained by the regression model. In terms of individual variables, the transformational and combination form of leadership, as well as employee experience were found to be significant determinants of employee satisfaction. The regression results indicate that, all else being constant, employee satisfaction is 14.49 points higher (on a scale of 0 to 100) with a leader exhibiting transformational leadership than laissez faire (the omitted variable). The sign of the coefficient for the augmentation style of

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leadership was also as expected (indicating higher employee satisfaction than with laissez faire leadership). In turn, the experience variable proved to be statistically significant, indicating that with all else constant, employees at an experience level of either E6 or GS-6 were 18.21 points (on a scale of 0 to 100) more satisfied than those on other levels.

Based on the results, this study rejects the first part of the second null hypothesis that there is no statistically significant relationship between a DoN BPR program leader's leadership style and perceptions of employee satisfaction.

Employee effectiveness. In a similar manner, multiple regression analysis was used to predict a Department of the Navy program leaders' impact on employee effectiveness in a business process reengineering environment, based on the leaders' leadership style and the organizational composition of gender, age, experience, and employment (military or civilian). Table 14 provides a comprehensive summary of regression results for the dependent variable employee effectiveness.

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Table 14

Regression Results for Employee Effectiveness

Dependent Variable: Employee Effectiveness
Method: Least Squares
Sample: 30

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
TF	14.68	5.62	2.61	.01
TA	-2.70	7.05	-.38	.71
COMBO	3.88	4.51	-.86	.40
GENDER	-.16	.14	-1.14	.25
AGE	-2.06	.77	-2.68	.01
EXP	24.71	5.60	4.43	.00
EMP	.27	1.26	.21	.27

R-squared	.71	Sum squared regression	4035.19
Adjusted R-squared	.62	F-statistic	7.87
S.E. of regression	27.69	Prob (F-statistic)	.00
Sum squared resid	1610.17	S.E. of estimate	8.55

A significant regression equation was found ($F(7,22)=7.87$, $p < .00$), with an R^2 of .71, suggesting that 71 percent of the variation in employee effectiveness was explained by the regression. In terms of individual variables, transformational leadership style, age and experience were found to be significant determinants of employee effectiveness at the .01 level of significance. In particular, the regression results indicate, all else being constant, that employee effectiveness is 14.68 points (on a scale of 0 to 100) higher with a leader exhibiting transformational leadership than laissez faire (the omitted variable). The sign of the coefficient for the

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augmentation style of leadership was also as expected (indicating higher employee effectiveness than with laissez faire), although not statistically different from zero. On one hand, the sign of the coefficient for age was negatively related to the outcome variable, all else being constant, employee effectiveness decreased by 2.06 points for each additional year of age. On the other hand, the sign of the coefficient for experience shared a positive relationship with the outcome variable, which indicates that when experience increased one unit of measure, employee effectiveness increased by 24.71 points. Based on these results, this study rejects the second part of the second null hypothesis that there is no statistically significant relationship between a DoN BPR program leader's leadership style and perceptions of employee effectiveness.

Employee effort. The data were analyzed by multiple regression to make predictions about the Department of the Navy's business process reengineered organizations and a program leader's impact on employee effort based on perceived leadership styles and the organizational composition of gender, age, experience, and employment (civilian). Table 15 provides a comprehensive summary of

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regression results for the dependent variable, employee effort.

Table 15

Regression Results for Employee Effort

Dependent Variable: Employee Effort
Method: Least Squares
Sample: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TF	14.09	4.69	3.00	.00
TA	1.38	5.88	.24	.82
COMBO	12.40	3.76	3.23	.00
GENDER	-.17	.11	-1.54	.14
AGE	-.08	.11	-.72	.90
EXP	12.82	4.65	2.76	.01
EMP	-.11	.19	-.58	.56

R-squared	.69	Sum squared regression	2510.17
Adjusted R-squared	.59	F-statistic	7.05
S.E. of regression	23.09	Prob (F-statistic)	.00
Sum squared resid	1119.19	S.E. of estimate	7.13

A significant regression equation was found ($F(7,22)=7.05$, $p < .00$), with an R^2 of .69, suggesting that 69 percent of the variation in employee effort was explained by the regression model. In terms of individual variables, both transformational and combo style of leadership, as well as experience, appears to share a positive and statistically significant relationship with employee effort. In particular, all else being constant, employee effort increased by 14.09 points with

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transformational leadership and 12.40 points with combo leadership instead of with laissez faire leadership (the omitted variable).

Additionally, with all else remaining constant, the outcome variable increases 12.82 (on a scale of 0 to 100) points with each increase in experience level. Based on the results, this study rejects the third part of the second null hypothesis that there is no statistically significant relationship between a DoN BPR program leader's leadership style and perceptions of employee effort.

Organizational effectiveness. A multiple linear regression equation was calculated to predict a Department of the Navy program leaders' impact on organizational effectiveness, in a business processed reengineered organization, based on program leaders' leadership style and the organizational composition of gender, age, experience, and employment (military or civilian). Table 16 provides a comprehensive summary of regression results for the dependent variable organizational effectiveness.

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Table 16

Regression Results for Organizational Effectiveness

Dependent Variable: Organizational Effectiveness
Method: Least Squares
Sample: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TF	8.31	2.84	2.92	.00
TA	-1.32	3.56	-.37	.71
COMBO	3.30	2.28	1.45	.16
GENDER	.04	.07	.58	.56
AGE	.61	.39	1.56	.13
EXP	8.01	2.82	2.84	.00
EMP	-.17	.12	-1.40	.18

R-squared	.51	Sum squared regression	431.87
Adjusted R-squared	.36	F-statistic	3.30
S.E. of regression	14.00	Prob (F-statistic)	.01
Sum squared resid	411.65	S.E. of estimate	4.33

A significant regression equation was found ($F(7,22)=3.30$, $p < .01$, with an R^2 of .51, suggesting that 51 percent of the variation in organizational effectiveness was explained by the regression. In terms of individual variables, transformational leadership style and experience were found to be significant determinants of organizational effectiveness at the .01 level of significance. In particular, the regression results indicate, all else being constant, organizational effectiveness is 8.31 (on a scale of 0 to 100) points higher with a leader exhibiting transformational leadership than laissez faire (the omitted variable). The experience variable proved to be statistically significant, indicating that with all else

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constant, employees with an experience level of either E6 or GS-6 would increase organizational effectiveness 18.21 points (on a scale of 0 to 100). Again, the sign of the coefficient for the augmentation style of leadership was also as expected (indicating higher organizational effectiveness than with laissez faire), although not statistically different from zero.

Based on the results, this study rejects the last part of the second null hypothesis that there is no statistically significant relationship between a DoN BPR program leader's leadership style and perceptions of organizational effectiveness.

Results Related to Research Question 3

Research Question 3 asked about the statistical significance of relationship between actual organizational success and a DoN BPR program leader's perceived leadership behaviors.

Actual organizational success. A multiple linear regression was calculated for a single outcome variable to predict a Department of the Navy program leaders' impact on actual organizational success, in a business process reengineered environment, based on program leaders' leadership style and the organizational composition of gender, age, experience, and employment (military or

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civilian). Table 17 provides a comprehensive summary of regression results for the dependent variable actual organizational success.

Table 17

Regression Results for Actual Organizational Success

Dependent Variable: Actual Organizational Success
Method: Least Squares
Sample: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TF	4.24	3.44	1.23	.23
TA	2.57	4.31	.59	.13
COMBO	-.42	2.76	-.15	.88
GENDER	-.09	.08	-1.12	.28
AGE	-.80	.47	1.71	.10
EXP	.17	3.41	.05	.96
EMP	-.27	.14	-1.89	.07

R-squared	.16	Sum squared regression	113.01
Adjusted R-squared	-.11	F-statistic	.60
S.E. of regression	5.23	Prob (F-statistic)	.75
Sum squared resid	602.35	S.E. of estimate	5.23

The regression was a rather poor fit ($F(7,22)=.60$, $p < .75$), with an R^2 of .16. Based on the tentative results provided above, this research fails to reject the third null hypothesis that there is no statistically significant relationship between leadership styles of DoN BPR program leaders and success of BPR program outcomes. In order to determine if the type of goal had any influence on the outcome variable of actual goal attainment, the researcher incorporated an additional variable within the regression

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model. Nonetheless, the variable addition was not significant and therefore dropped from the model.

Testing the Significance of Leadership

Leadership being the focal point of this study, it is important to discern if one leadership style effect was statistically larger than what can be observed within the regression. To that end, multiple *t*-tests were performed during the regression process in order to discern clearly if the effects of the leadership styles on the dependent variables were non-zero. The results are illustrated in Tables 13 through 17.

Although *t*-tests are invaluable for testing the significance of each one of the leadership variables, however, they cannot be used to test hypotheses that contain more than one leadership variable. To test the hypothesis that the leadership variables, taken together, had a non-zero effect on the dependent variables, an *F*-test was used. As described in the previous chapter, the following *F*-statistic was first calculated and then compared to its critical value. The results are summarized in Table 18.

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$$F = \frac{(R^2_{UR} - R^2_R)\ Q}{(1 - R^2_{UR})/N-(k + 1)}$$

Q = # of variables in subset
N = Sample size
K = independent variables

Table 18 provides a comprehensive summary of the *F* values for each dependent variable.

Table 18

Restricted and Unrestricted Regression Results for Dependent Variables

DEPENDENT VARIABLE	R^2ur	R^2r	F_c	*F*
EE	.715	.603	2.53	8.62
EE_2	.692	.446	2.53	5.57
ES	.697	.517	2.53	4.38
OE	.512	.259	2.53	3.83
AS	.158	.083	2.53	0.65

R^2ur = R^2 unrestricted; **R^2r** = restricted;
F_c = F critical; **F** = test results

Examination of this table shows that since the calculated *F*-statistic exceeds the critical value for four of the five dependent variables, we can reject the null hypothesis:

H_0: $\beta_1 = \beta_2 = \cdots = \beta_k = 0$. However, the F statistic for actual success did not meet the requirement for F_c, suggesting that the independent variables taken together had no luck in explaining variation in actual success.

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Overall Summary

Testing of null hypothesis one related to research question one revealed that, of the four leadership styles under study, the combination form of leadership was predominate (15 of 30 units) at a statistically significant level. In turn, transactional leadership appeared least often (2 out of thirty units.)

Testing of null hypotheses related to the second question found that the transformational form of leadership accounted for a greater variation in unit outcomes than that attributed to perceived transactional and laissez faire leadership behaviors. The combined form of leadership style was significant only when employee satisfaction and effort were under consideration. Results of multiple regression evaluation indicate that the independent variables under study accounted for 50% to 71% of the variation in the outcome variables. In the organizations under study, the perceptual transactional and laissez faire leadership styles did not supplement or influence actual organizational success and perceptual outcomes.

Testing of null hypothesis three related to the third research question found that the actual success of the organizations under study could not be linked, with a high

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degree of statistical significance, to transactional leadership, transformational leadership, an augmentation style of leadership nor laissez faire behaviors.

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CHAPTER 5 DISCUSSION

Chapter Five provides a summary of research reported in this dissertation; the summary briefly reviews the purpose and the methodology of the study, as well as its findings. Interesting aspects of the findings (including some apparent anomalies), as well as implications of the findings for training, policy changes and future research are also discussed in this chapter.

Review of the Study's Purpose and Methods

The purpose of this study was to examine whether or not perceived leadership styles of the Department of the Navy's business process reengineering program leaders were related to business process reengineering outcomes. This research was conducted within the Navy's Region Southwest. Three research questions were the focus of this study: Is there a predominant leadership style among DoN BPR program leaders? Is there a relationship between leadership style and employee effort, employee satisfaction, employee effectiveness, and organizational effectiveness in DoN BPR environments? Is there a relationship between leadership

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style and actual goal attainment of DoN BPR program outcomes?

Thirty units were sampled resulting in 289 respondents participating in this study. Respondents completed the Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio (1995). The MLQ questionnaire measured not only perceptions about the leadership style of the head of each respondent's unit but also perceptions of employee effectiveness, employee effort, and employee satisfaction. Additional questions were added to measure perceptions about organizational effectiveness. Organizational reports indicating actual organizational performance were reviewed to discern actual organizational success.

Inferential statistics were used to explore if predominant leadership style existed and if a statistically significant relationship existed in recently reengineered organizations between a leader's perceived leadership style, on the one hand, and various indicators of success, on the other. Various statistical tests were conducted to minimize the likelihood of false positive findings.

Summary of findings

Is there a predominant leadership style? The first research question asked if followers (subordinates)

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perceived a predominant leadership style among program leaders. The results suggest that different leadership styles were more or less equally represented with two exceptions: transactional and the combination leadership style that in previous studies produced the so-called augmentation effect. Transactional leadership style observations were much lower than one would expect, especially since earlier studies and literature indicated that transactional leadership was the prevalent leadership style within military organizations (Burns, 1978; Barco, 1993). The combination form of leadership -- the leadership style prior studies frequently suggested was the most effective style -- was found to be predominate within the study's sample (Avolio, 1999).

Leadership styles and perceived outcome variable measures. The second null hypothesis -- which was constructed from the second research question -- postulated that there would be no statistically significant relationship between the perceived leadership styles of Navy program leaders leading business process reengineered organizations and employee perceptions of employee satisfaction, employee effort, employee effectiveness, and organizational effectiveness. A statistically significant coefficient of determination was found for each of the

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employee perceived outcome variables mentioned above. Each of the perceived outcome variables was statistically significant at a probability level of .00. However, perceived organizational effectiveness was slightly higher, statistically significant at the .01 level of probability (see Tables 13 through 16). Each regression equation for the perceived outcome variables in research question two had statistically significant *t* scores for experience and perceived transformational leadership behaviors.

Leadership styles and actual organizational success measures. The third research question and third null hypothesis were concerned with the extent to which Department of the Navy BPR program leaders' leadership style exhibited a statistically significant relationship with actual organizational goal attainment. A non-significant regression equation was found for research question three. In other words, the findings revealed that there was no statistically significant relationship between perceptions of leadership style and actual organizational goal attainment (see Table 17).

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Discussion of Findings

This discussion begins by considering three apparent anomalies between this study's results and the results of prior studies. Apparent anomalies across different measures used within the study will also be considered. The discussion of anomalies is followed by brief discussions of implications for policy and practice and for additional research.

Anomalies with prior research. The findings in this study appear to conflict with findings from other studies in at least three respects. First, in this study only two of thirty leaders were judged to exhibit a transactional leadership style. By contrast, earlier studies suggested that the transactional leadership orientation was, by far, the most prevalent leadership style in the military. For instance, as noted earlier in Chapters 2, Burns (1978) suggested that military officers practice transactional leadership most of the time. Further, Barco (1993) tells us that the military has been dangerously close to tolerating and, perhaps worse, sponsoring a generation of military transactional leaders instead of the transformational leaders that an evolving fighting force needs.

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Why does this discrepancy exist? What explanation can be given to account for the differences in this study and earlier studies? There appears to be at least four possible explanations for this discrepancy.

First, the Navy's leadership training programs may have begun to show an effect. Although, transactional leadership was dominant in most military settings in the past, this leadership paradigm may have shifted in practice to catch up with the shift that has already occurred in Naval Leadership training programs. Transformational leadership qualities are now preferred, and most Navy leadership training is geared toward teaching today's leaders transformational leadership behaviors (Conroy, 2001). Therefore, this difference in results could be a by-product of the success of the Navy's training efforts.

The second explanation for a difference in findings could be linked to a difference in the prior military organizations studied. The majority of earlier studies of military organizations that used the MLQ were conducted with the U.S. Army. As noted above, the Navy's leadership training efforts explicitly emphasize and endorse transformational practices.

Third, this study's sample was intentionally skewed to focus on service-oriented organizations within the region

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because of the type of organizational change taking place. Leadership styles in the service sector might differ from leadership styles in other sectors because the needs of the service sector differ. Among other differences, there were more civilian employees in the units studied than in many other units.

Finally, it is possible that the "cut off score" used in this study to determine whether someone exhibited a transactional style of leadership may have been too conservative. However, the cut scores used in this study were recommended by the developers of the MLQ and presumably, similar cut scores were used in other MLQ studies.

Of the four explanations above, the fourth issue of "cut off score" selection seems most problematic since, as just noted, the cut off score was obtained from one of the authors of the survey. With that in mind, that leaves the first three accounts--or some combination of these--as plausible explanations. Additional research, however, is required to explore these or other emerging hypotheses and to explain the discrepancy between this study and results of previous research on leadership styles with respect to the frequency of transactional leadership in military contexts.

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A second anomaly between this study's findings and the findings of previous studies relates to the relatively sizable number of program leaders who were perceived as laissez faire leaders. I believe that there may be a relatively straightforward explanation for this finding. The transformational style of leadership was found to be statically significant throughout most of this study. The transformational style of leadership, by definition, encourages follower empowerment. As a result, program leaders who were perceived to be more of a transformational leader may have increased the degree to which followers were asked to participate in making organizational decisions or make the decisions themselves. When this approach is used extensively, a program leader may be seen as abdicating his or her responsibilities or even deserting the subordinate. In turn, the subordinate may feel that he or she was given more responsibility than his or her position should require and, therefore, he or she is overworked or underpaid for the work expected. Such reactions could be expected to be reflected in negative outcomes of the type observed in this study. This could explain the fact that leaders in nine of the 30 programs studied were in the laissez faire category.

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The third anomaly between the results presented here and the results of previous studies relates to the so-called augmentation effect. Prior studies suggest that a combination of transactional and transformational leadership is better than either of the styles alone and that a combination approach to leading produces the so-called augmentation effect. This study, however, did not find consistently significant results related to the augmentation effect in each of the organizational outcomes examined. What might explain this discrepancy?

One possibility may be that the organizations undergoing change are well established and staffed with experienced employees who require little to no "transactional" guidance. (The results of this study, in fact, indicate that the experience variable was statistically significant in each of regression equations related to perceptual organizational outcomes.) New organizations, on the other hand, may require a mixed style because of the lack of employee experience available. The fact that the organizations studied were service organizations also may be relevant in making sense of this third anomaly.

Anomalous findings within study. In addition to producing of findings that were at odds with the findings

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of other studies, this study also exhibits an apparent anomaly within the study's own data sets. Specifically, although relative strong relationships were discovered between transformational leadership and a number of perceptual measures of organizational productivity, relationships were not found to be significant when actual goal attainment was used as the dependent variable in the regression model. Once again, it is worth seeking an explanation for anomalous findings.

There are at least two explanations for the discrepancy in question. Discrepancies between actual reality and perceptions of reality might be especially commonplace in organizations where employees are undergoing change and being held accountable for positive results. We might refer to this as the "Lake Woe-Be-Gone" syndrome, since in the public radio fictional community of this name, everyone is perceived to be above average. The rationale (articulated in Chapter 3) for looking at actual goal attainment rather than simply using perceptual data, in fact, was rooted in the realization that perceptual data may not represent reality. Previous research and literature (Uline, Miller, and Tschannen-Moran, 1998), however, indicate that measures of perception were correlated with objective (reality) measures of success.

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A second explanation has to do with the limited variance across business process reengineering organizations with respect to goal attainment. It should be noted that more than 87% of the organizations either attained their goals or were within 90% of doing so. It is possible that variance in goal attainment measures was simply too minimal to detect the impact of leadership style, or anything else for that matter.

Implications for Practice and Policy Change

Practice. Supervisory training programs in the United States Navy have long included instruction in the area of leadership style (Conroy, 2001). Usually, the instructional advice is to move either toward a transformational leadership style or toward a combination of the transactional and transformational styles whenever possible. The latter approach is believed to produce the so-called augmentation effect.

Training, while probably useful, certainly is no guarantee that more positive organizational outcomes will be forthcoming. This study both affirms and calls into question some of the conventional wisdom on which most leadership training in a Navy context is based. The study

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certainly affirms the current emphasis in practicing transformational leadership. It not only indicates evidence of positive relationship between the transformational style and, at least, positive perceptions of organizational outcomes. Findings also suggest that the Navy's focus on promoting transformational leadership has been at least somewhat successful since this leadership style was found to be much more commonplace in the sample used in this study than in earlier studies in military environments.

This study, however, also calls into question the current focus on promoting a combination style of leadership -- at least in service organizations engaged in BPR - because very little in the way of an augmentation effect was seen in this study. Obviously more work must be done before this conclusion can be considered definitive enough to radically alter existing training programs. In addition, if the analysis presented here to explain the surprisingly large number of laissez faire leaders in the study is on target, this large number may be explained at least in part, by subordinates who expected a transactional leader coding the leadership behavior of a transformational leader as laissez faire. With this in mind, it may be

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important to provide leadership training for subordinates as well as leaders. Leadership theorist such as Rost (1993) have always emphasized that effective leadership is not just about leaders behaviors; rather, according to Rost and others, effective leadership is dependent upon the leader/follower relationship. If this is so -- and more specifically, if laissez faire ratings are a result of a lack of understanding among subordinates -- the Navy may want to rethink the leadership training format by making it a collaborative process involving both leaders and subordinates together as a unit and not with just those designated as leaders. This collaborative training environment may intimidate subordinates, of course, and suppress their willingness to freely voice their opinions regarding observed leadership behaviors. Given this, possibility, during a joint training process, it may be necessary to separate leaders and followers for a portion of the training.

Policy. A fundamental concept behind the Government Performance and Results Act, mentioned in Chapter 2, is the notion that performance measurement should be an integral part of business process reengineering efforts and budgeting decisions. Currently, however, measurement

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focuses merely on fiscal goal attainment. This study suggests that this limited focus may not be desirable or necessary, since most units -- at least in this study -- achieved the fiscal goals that were set for them. Thus, fiscal goal attainment data is not especially helpful in differentiating between successful and less successful units. In most cases, other measures are available and can be utilized with minimum cost and effort. These other measures may alert us to situations where goals have been met, but where the price that was paid to do this in terms of such things as morale and job satisfaction was quite high. Consequently, it may be appropriate to gather the sort of data used in this study on a regular basis for ongoing evaluation purposes. If this is done, we would have a large data set to further explore the relationship between BPR success and leadership style.

Implications for Future Research

Implications for future research stem from the limitations of this study. Consequently, the limitations of this study, in particular, the limitations of this study's sample, will be discussed.

All units studied represented Department of the Navy's service-oriented organizations. Whether the results

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obtained can be generalized to profit-making or product-oriented organizations -- or even to other types of units within the United States Navy -- is uncertain. To answer such questions further research is required, such research should use random samples. This study used a convenience sample. Several organizations were eliminated from consideration because of either their location (beyond a fifty mile radius) or because they were unavailable for participation.

Clearly the sort of research alluded to at the end of the previous paragraph is needed to compensate for the limitations of this study. This study, which, because of its relatively unique focus on implications of leadership style on BPR, is in some sense a pioneering effort. The research only looked at one context, the United States Navy, and therefore, can say nothing about the impact of leadership on BPR success in business or a non-military governmental context.

Even within the Navy, the sample was limited to service organizations and to a certain geographical area. Clearly, more studies of this kind are needed if we are to develop a real understanding of the relationship between leadership style and BPR success.

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Conclusion

This study used the transactional, transformational, and laissez faire concepts developed by Bass (1985) and the instrument developed by Bass and Avolio (1995). Simply stated, Bass contended that transformational leaders are leaders who obtain the support of their followers by inspiring them to identify with a vision of the organization that reaches beyond their own immediate self-interest. Transactional leaders were defined as leaders who obtained compliance from followers by establishing rules of exchange, and by monitoring these exchange relationships and rewarding (and punishing) accordingly. Laissez faire leaders were described as giving up responsibility for leading, and as being indifferent, indecisive and often inaccessible. Previous studies using Bass and Avolio's instrument also uncovered the so-called augmentation effect of leadership; the augmentation effect is achieved when transformational leaders also exhibit certain transactional attributes (Hater & Bass, 1988; Waldman, Bass & Yammarino, 1990). In most previous studies, either transformational or a combination of transformational and transactional leadership behaviors have been associated with greater organizational effectiveness (Bass and Avolio, 1995).

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This study, which looked at an impact of leadership style on business process reengineering in Navy service organizations, produced a number of findings, some are which are compatible with and some of which appear to conflict with findings of earlier studies. The following findings are compatible with earlier research:

(1) Transformational leadership had a positive influence on perceived employee satisfaction, employee effort, and employee effectiveness.

(2) Transformational leadership had a positive influence on organizational effectiveness.

(3) The augmentation form of leadership style had a positive influence on perceived employee satisfaction and employee effort.

Anomalous findings include the following:

(1) Transactional leadership was less commonplace than previous research suggests will occur in a military environment.

(2) Actual BPR goal attainment could not be linked with any leadership style in a Navy context.

(3) The augmentation form of leadership style did not have the expected influence on the outcome variables investigated in this study.

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In these times of decreasing federal spending, and dynamic and increasing mission requirements, business process reengineering becomes even more of a necessity. Generally, the study seems to support Heifetz and Laurie's (1997) philosophy that an adaptive environment such as this requires leaders who can lead with clarity of judgment by "getting on the balcony," and having a vision of the whole picture, and imparting this vision to followers. Heifetz and Laurie (1997) state that these leaders must be able to regulate distress in the workplace related to change methodologies like business process reengineering.

Overall, this study provides ample justification for linking perceived transformational leadership and employee experience to perceptual organizational outcomes. The next obvious step for future investigation of this type would be to determine how or if perceived leadership styles can be statistically linked to actual organizational goal attainment.

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Appendix A

(Letter requesting to conduct study)

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02 April 2001
11### Smith Drive
Navy Town, CA 921XX

Captain K. Far
Business Manager
Navy Region West
937 N. Sea Dr
Navy Town, CA 921XX

Bernard Bass believes *improving quality relates more to the process of leadership than to the obvious focus on products or outcomes. Leaders can help facilitate qualitative change by radically shifting the viewpoint of followers concerning what they consider meaningful in their jobs.*

Dear Captain Far,

I'm a doctoral student at the University of San Diego and the dissertation I'm undertaking is designed to investigate what relationships exist between leadership behaviors and business process reengineering (regionalization) outcomes within a Department of the Navy context.

As a Naval Officer with more than 20 years of service and a doctoral student majoring in leadership, I believe a study of the leadership dynamics in today's military reengineering effort will fill a knowledge void for understanding the relationship of regionalization site leaders and their employees. Moreover, I have recently completed an internship with the consulting firm KPMG during their reengineering of the Navy's Southwest Region, therefore, I understand the region's reengineering dynamics from a fundamental perspective.

The ultimate aim of this research effort is to increase an understanding of this organizational change method and the required leadership activities that may increase their success. To that end, this research process will primarily consist of surveying employees. The variables understudy, contained within the Multifactor Leadership Questionnaire -- the survey that will be used in this study -- have been tested and identified in previous research as capable of discerning leadership items that impact employee effort, satisfaction and perceived organizational effectiveness.

Captain, I would like to thank you in advance for taking your valuable time to assist me in the pursuit of my educational goal. I sincerely believe my proposed research project results will identify areas that could allow for refinement to staff training activities for current and future reengineering efforts.

Andre D. Murphy

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Appendix B

(Data Call Letter)

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01 May 2001

From: LT Andre D. Murphy, Researcher
To: Comptroller, Naval Air Station
Navy Town, CA 92135

Subj: STUDY DATA CALL

I am a Naval Officer and graduate student at the University of San Diego's School of Education, conducting a study on perceptions of leadership behavior and its impact upon employees and organizational outcomes -- actual and perceived -- in a reengineered (regionalization) Naval environment. Enclosure (1) provides amplifying information.

I'm writing to ask your help in this study. In particular, to investigate if there is any relationship between leadership behavior and organizational outcome, data must be collected for a definitive conclusion. The type of data sought from your office is two-fold: (1) what were the previous fiscal year reengineering (regionalization) program goals for various organizations at the NAS site? For example, the regionalization effort consisted of dining facilities restructuring their organizations, as a result, what was the desired fiscal outcome? And (2), was the desired goal attained?

It is believed that data sought here in can be found on preexisting reports or documentation. Hence, it is my strongest desire that by providing this information your needed time and effort would be small. I will accept data "as is", be it "hard copy" or electronic (I will supply necessary disks). Again, my objective is to acquire data necessary to conduct this study with no organizational impact.

I sincerely thank you in advance for your help in this matter. The desired optimal outcome of this research effort is to increase an understanding of this organizational change method and the required leadership activities that may increase their success. If you have questions or concerns regarding this research, please contact me at: murphyad@onebox.com.

A. D. MURPHY

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Appendix C

(Cover Letter to Respondents)

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DEPARTMENT OF THE NAVY
NAVY REGION WEST
937 N. SEA DR.
NAVY TOWN, CA 921XX

From: Business Manager, Navy Region West
To: Employees of the Navy Region West

Subj: REGIONALIZATION LEADERSHIP STUDY AND QUESTIONNAIRE

1. A graduate student from the University of San Diego's School of Education is conducting a study in order to gain data on perceptions of leadership behavior and its impact upon employees and organizational outcomes in a reengineered (regionalization) Navy environment.

2. Your name was randomly selected from a list of all employees with your organization. Participation is strictly voluntary and you will not be jeopardized in any way if choose not to respond to the attached question questionnaire. However, if you choose to do so, responding to the questionnaire should take about 15 minutes of your time. Your feedback will support graduate level research that could lead to current or future modifications in reengineering (regionalization) implementation. Thank you in advance for completing the questionnaire. Please make your questionnaire available for pick-up by 06 July, 2001.

3. Your response will remain completely anonymous and confidential. You will note a number on your survey form. This number will be used to only to determine who has responded to the questionnaire and who may require follow up contact. It will not be used in anyway to connect you to your questionnaire responses.

4. If you have questions about the study, please contact LT Andre D. Murphy at 555-1191, murphyad@onebox.com. Your help in this matter is greatly appreciated.

K. B. FAR

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Appendix D

(Multifactor Leadership Questionnaire)

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MLQ Multifactor Leadership Questionnaire
Rater Form (5x-Short)

Name of Leader: _____ Date: _____

Organization ID #: _____ Leader ID _____

This questionnaire is to describe the leadership style of the above-mentioned individual as you perceive it. Please answer all items on this answer sheet. **If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.** Please answer this questionnaire anonymously.

IMPORTANT (necessary for processing): Which best describes you?

_____The person I am rating is at my organizational level.
_____I am at a lower organizational level than the person I am rating.
_____I do not wish my organizational level to be known.

Forty-five descriptive statements are listed on the following pages. Judge how frequently each statement fits the person you are describing.

Use the following rating scale:

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

THE PERSON I Am RATING...

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 business process reengineering and coaching	0	1	2	3	4

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Continued =>
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Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

16. Makes clear what one 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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Appendix E

(Demographic and Organizational Effectiveness Questionnaire)

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DEMOGRAPHICS AND ORGANIZATIONAL EFFECTIVENESS QUESTIONNAIRE

Demographics: Responses to the following demographic questions will be used to compare respondents within age, experience level, employment categories and gender grouping.

1. What is your experience level? _____ (Fill in your GS grade or pay grade).

2. What is your employment category?
(a) Military
(b) Civilian

3. What is your actual age? _____ (Fill in the blank).

4. What is your gender? (Circle your response).
(a) Male
(b) Female

5. Of the various things produced by the people in your organization, expected levels of production are always attained?

   (a) Strongly disagree
   (b) Disagree
   (c) Undecided
   (d) Agree
   (e) Strongly Agree

6. People you know in your organization produce a high quality of products and services?

   (a) Strongly disagree
   (b) Disagree
   (c) Undecided
   (d) Agree
   (e) Strongly Agree

7. People in your organization get maximum output from available resources (money, people, equipment, etc.). That is, do they do their work effectively?

   (a) Strongly disagree
   (b) Disagree
   (c) Undecided
   (d) Agree
   (e) Strongly Agree

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8. People in your organization are informed about innovations that could affect the way they do their work?

   (a) Strongly disagree
   (b) Disagree
   (c) Undecided
   (d) Agree
   (e) Strongly Agree

9. Many of the people in your organization readily accept and adjust to organizational changes?

   (a) Strongly disagree
   (b) Disagree
   (c) Undecided
   (d) Agree
   (e) Strongly Agree

Appendix (E)

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