ABSTRACT

Title of Dissertation: THE EFFECTS OF SUPERLEADERSHIP TRAINING ON LEADER BEHAVIOR, SUBORDINATE SELF-LEADERSHIP BEHAVIOR, AND SUBORDINATE CITIZENSHIP

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A field experiment was conducted to assess the effects of SuperLeadership training on trainee leadership behavior, subordinate self-leadership behavior, and subordinate citizenship. The experiment involved approximately 70 focal training participants and 500 subordinates. Participants were assigned to two conditions: a) a training condition, in which participants received training immediately after baseline questionnaire data were collected; and b) a comparison condition, where participants did not receive training until after a second set of data had been collected to assess change. The lag between the first and second rounds of data collection was 10-weeks.

Although data analysis confirmed the psychometric adequacy of the research questionnaires, the broad finding of the study was that the leadership behavior of participants in the training group did not change as a result of the training. Subordinate self-leadership

behavior and citizenship also did not appear to change as a result of the training. However, supervisors of the participants reported increased performance of the trainees as a result of the training. This suggested that supervisors may have seen early evidence of positive change as a result of the training.

Subsequent investigation determined that although the training was perceived as effective by the participants, reductions-in-force in the host organization were perceived as inhibiting participants' ability to apply the training. Speculation concerning the apparent lack of change explored aspects of the experiment itself, the training, and the transfer setting in the host organization.

THE EFFECTS OF SUPERLEADERSHIP TRAINING ON LEADER BEHAVIOR, SUBORDINATE SELF-LEADERSHIP BEHAVIOR, AND SUBORDINATE CITIZENSHIP

by

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DEDICATION

I wish to thank my parents, David and Jane Cox, for their support and confidence in graduate school as in all else. Their unconditional love, respect, and friendship will always be a source of strength for me. I am honored to dedicate my dissertation to them.

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Chapter I: Introduction

This report describes a field experiment concerning SuperLeadership (Manz & Sims, 1990, 1991a), a leadership perspective that emphasizes employee self-influence rather than external, top-down influence. The manipulation for this experiment, which will include both experimental and control groups, is a leadership training program based on SuperLeadership principles.

This research has three central purposes. First, I will subject SuperLeadership training to its first experimental test. Second, I will attempt to document a relationship between the SuperLeadership manipulation and two citizenship constructs: organizational citizenship behavior (Organ, 1988) and counterproductive behavior (Ball, Trevino, & Sims, 1991; Fisher & Locke, 1991). Third, I will extend the empirical base of research on recently developed measures of leadership behavior (Ball et al., 1991; Scully et al., 1992) and employee citizenship (Ball et al., 1991; Fisher & Locke, 1991; Podsakoff & MacKenzie, 1989; Podsakoff, Mackenzie, Moorman, & Fetter, 1990).

Four central propositions underlie the present research. Two propositions predicted SuperLeadership training effects on two _internal criteria_: (a) trainee _SuperLeader_ behavior and (b) _self-leadership_ behavior among subordinates of trainees. The second two central propositions predicted SuperLeadership training effects on the _external criterion_ of citizenship among subordinates of trainees, including (c) _organizational citizenship behavior_ and (d) _counterproductive behavior_. As used above, the term _internal criterion_ refers to a criterion that follows directly from the SuperLeadership approach and was specifically emphasized in training. Chapter II will introduce and discuss several internal criterion variables. These internal criterion variables concern trainee leader behavior, including SuperLeader behavior and other trainee leader behaviors, and self-leadership behavior among subordinates of trainees (e.g., items _a_ and _b_ above). The above term _external criterion_ is used to refer to a criterion that will not be specifically emphasized in the training but that should be affected by the training on theoretical grounds. Chapter III will introduce and discuss several external criterion citizenship variables. These variables include _organizational citizenship behavior_ and _counterproductive behavior_ among subordinates of the trainees (e.g., items _c_ and _d_ above).

The following chapters lay the groundwork for testing these propositions. Chapter II presents a review of the origins and development of the SuperLeadership approach.

Chapter III relates SuperLeadership to the established construct of organizational citizenship behavior and the more recent counterproductive behavior construct. Chapter IV describes the methodology used to conduct this research. Chapters V and VI present results and discussion, respectively.

Chapter II: SuperLeadership

This chapter introduces SuperLeadership, a perspective on leadership that has been recently proposed by Charles C. Manz and Henry P. Sims, Jr. (1989, 1990, 1991a). The chapter is structured in several sections. The first section treats leadership generally; it defines leadership, highlights the importance of leadership, and discusses the changing context of leadership. The second section introduces a leadership typology that has been proposed by Manz and Sims (1991a). This typology is an organizing framework for a review of several theoretical perspectives that pertain to leadership and leader behavior. The third section reviews the details of SuperLeadership and develops several research propositions.

Leadership

Because of the complexity of the leadership construct, the term leadership has long presented definitional problems for researchers and practitioners. Almost 20 years ago, for example, Stogdill (1974) observed that "there are almost as many definitions of leadership as there are persons who have attempted to define the concept" (p. 259). Unfortunately, the passage of time and the addition of hundreds of leadership studies have done little to clarify the precise meaning of the term.

These definitional problems arise partly from the imprecise application of lay terminology in leadership research (Yukl, 1989). They may also result from the large number of theoretical perspectives that have been brought to bear on leadership: leadership is usually defined by researchers "according to their individual perspective and the aspect of the phenomenon of most interest to them" (Yukl, 1989, p. 2). Just as there is no single agreed-upon definition of leadership, neither is there a unifying theory of leadership.

In his review of leadership theory and research, Yukl (1989) offers a catchall definition of leadership as "influence processes involving determination of the group's or organization's objectives, motivating task behavior in pursuit of these objectives, and influencing group maintenance and culture" (p. 5). For purposes of this dissertation, I define leadership similarly as a process of influence: if one influences another (typically a leader influencing a follower), then leadership takes place.

<u>The Importance of Leadership</u>

Although leadership has been a lively topic for both research and commentary, some researchers question its importance. Pfeffer (1977), for example, suggested that leaders are so constrained by political and economic forces that their impact is rather limited. Bass (1990), however, cites empirical evidence that leaders can have a significant effect on organizational performance. Furthermore, Bennis and Nanus (1985) contend that leadership is critical for organizational success: "A business short on capital can borrow money, and one with a poor location can move. But a business short on leadership has little chance for survival" (p. 20). In a more philosophical vein, Bennis (1989) laments the lack of inspired leadership in America, asking "where have all the leaders gone?" (p. 13). Accounts in the popular press of the "leadership crisis" surrounding the 1992 U.S. elections suggest that many Americans share a similar concern.

The New Reality of Leadership

The economic and social context of organizational leadership is rapidly and significantly changing. The competitive pressures of economic globalization place additional demands on leaders to increase organizational flexibility and responsiveness. At the same time, broad social changes in the post-war era are reflected in a labor force that brings higher expectations to the workplace (e.g., Carnevale, 1991). These social trends were evident twenty years ago to Walton (1972), who identified a mismatch between traditional, hierarchical command-and-control leadership and employees' increasing demands for satisfying work, greater egalitarianism, and greater control over their work lives. New perspectives on leadership may well be necessary to accommodate the demands of the market and the workforce. Charles C. Manz and Henry P. Sims, Jr. (1989, 1990, 1991a) have recently proposed an approach to leadership, SuperLeadership, that they claim can help leaders grapple with the new reality of leadership.

SuperLeadership: An Overview

SuperLeadership is an approach to leadership that emphasizes shifting employees "from dependence on external management to independence". (Manz & Sims, 1990, p. 68). Central to SuperLeadership is employee self-management and initiative: Manz and Sims (1990) style SuperLeadership as an organizing framework for replacing conventional command-and-control leadership with responsible employee self-direction and autonomy. They define a SuperLeader as "one who leads others to lead themselves" (p. 4).

The first comprehensive exposition of SuperLeadership (Manz & Sims, 1989) was a prescription for practicing managers rather than an explication of a tightly constructed psychological theory. Sims and Lorenzi (1992) recently elaborated on the theoretical underpinnings of SuperLeadership, which include social learning theory and self-management theory. Nevertheless, SuperLeadership is as yet too new to have been explicated as a formal model. Sims and Lorenzi (1992) captured the present status of SuperLeadership by describing it as a "loosely connected, rather than a tight, precise, theoretical model. . . . In fact, it might be more precise to call [SuperLeadership] a perspective rather than a theory" (p. 26).

Though not necessarily a formal theory per se, SuperLeadership is rooted in several theoretical perspectives in psychology and organizational behavior. Although a comprehensive review of leadership theory is beyond the scope of this proposal, I will place SuperLeadership in a broader historical context by providing a brief review of selected theory in the next section. Much of this review draws heavily on Yukl's (1989) integrative review of leadership as well as Bass's (1990) more comprehensive reference work.

The Manz/Sims Typology of Leadership

The theoretical review in this section of the proposal will be organized around a leadership typology that has been recently proposed by Manz and Sims (1991a). This typology includes four archetypes (they use the term strategies) of leadership that typify relatively "pure" patterns of connected leader behavior: Strongman, Transactor, Visionary Hero, and SuperLeader. Table 2-1

Table 2-1

Manz and Sims (1991) Leadership Typology

	Strongman	Transactor	Visionary Hero	SuperLeader
Leadership Focus	Commands	Rewards	Visions	Self-Leaders
Power Focus	Position/ Authority	Reward/ Exchange	Relational/ Inspirational	Responsible Autonomy
Source of Wisdom & Direction	Leader	Leader	Leader	Followers with fallback to leader
Follower Response	Fear/ conditional performance	Calculation/ conditional performance	Emotional commitment to leader vision	Emotional Commitment based on self-led ownership
Major Leader Behaviors	*Directing *Commanding	*Interactive goal-setting *Contingent personal rewarding *Contingent material rewarding *Contingent reprimanding	*Communicating vision *Inspiration and persuasion *Idealism *Challenge to the status quo	*Becoming a self-leader *Modelling self-leadership *Encouraging self-set goals *Creating positive thought patterns *Developing self-leadership through reward and constructive reprimand *Promoting teamwork *Facilitating a self-leadership culture

Note. From "SuperLeadership: Beyond the Myth of Heroic Leadership" by C. C. Manz and H. P. Sims, Jr., 1991 (spring), Organizational Dynamics, p. 22. Copyright 1991 by Charles C. Manz and Henry P. Sims, Jr. Adapted by permission.

provides an overview of the Manz/Sims typology. This typology, which has been reviewed by Scully et al. (1991), is an extension of the theoretical and empirical work of researchers like Burns (1978) and Bass and associates (c.f., Bass, Waldman, Avolio, & Bebb, 1987), who contrast transactional with transformational leadership. Manz and Sims have extended the Burns typology by adding the Strongman and SuperLeader archetypes. This typology is useful for contrasting SuperLeadership's emphasis on employee self-influence, or self-leadership, with alternative views of leader influence.

Included in this review are references to several behavioral variables that were measured for the present research. These variables, like the review that follows, are organized around the Manz/Sims typology. Some of these variables refer specifically to the SuperLeader archetype, the focus of this study; others refer to aspects of the other three archetypes. More detailed discussion of the SuperLeader variables will follow in later sections of this chapter when the SuperLeadership perspective is elaborated.

The Strongman, Transactor, and Visionary Hero archetypes are three traditionally recognized approaches to leadership. In the following paragraphs, these three archetypes will be discussed and related to historical theory and variables. The theoretical underpinnings of SuperLeadership will then be discussed to illustrate how SuperLeadership differs from past conceptualizations of leadership. The archetypes and their related historical theories are summarized in Table 2-2.

Strongman

The first Manz/Sims archetype, Strongman, represents a prototypical "boss" who engages in highly directive and occasionally punitive and dictatorial leadership (e.g., Schriesheim, House, & Kerr, 1976). Relying primarily on formal position power, Strongman leaders make all key decisions in their organizations virtually alone. Based on their sole judgment, they dictate the appropriate course of action to their subordinates and expect unquestioning compliance.

Research conducted by Scully et al. (1992) has produced some interesting findings regarding Strongman leadership as a response to environmental adversity. This research considered the relationship between the financial performance of high-technology firms at one point in time and the leadership behavior of CEOs in the firms approximately one year later. Scully et al. found that leader behavior was predicted by various indices of financial performance including returns on sales, assets, and investment. Specifically, when these financial

Table 2-2

Manz and Sims (1991) Leadership Typology with Representative Theory and Research

Archetype	Related Historical Theory/Research
Strongman	Theory X Leadership (e.g., McGregor, 1960)
	Initiating Structure -- Ohio State Leadership Studies (e.g., Fleishman, 1973)
	Punishment Research (e.g., Arvey & Ivancevitch, 1980)
Transactor	Expectancy Theory (e.g., Vroom, 1964)
	Path-Goal Theory (e.g., House & Mitchell, 1974)
	Goal Setting Theory (e.g., Locke & Latham, 1990)
	Reinforcement Theory (e.g., Luthans & Kreitner, 1985)
	Punishment Research (e.g., Arvey & Ivancevitch, 1980)
Visionary Hero	Charismatic Leadership Theory (e.g., House, 1977)
	Transformational Leadership Theory (e.g., Burns, 1978)
SuperLeader	Behavioral Self-Management (e.g., Luthans & Davis, 1979; Thoreson & Mahoney, 1974)
	Social Learning Theory (e.g., Bandura, 1977)
	Cognitive Behavior Modification (e.g., Meichenbaum, 1974)
	Participative Decision Making (Vroom & Yetton, 1973)

indicators were unfavorable, subsequent CEO behavior tended more towards Strongman leadership. Scully et al. interpreted these results as suggesting that leaders tend to be more directive under conditions of financial adversity. Scully et al. will be frequently cited throughout this report because their instrumentation contributed substantially to questionnaires used in the present study.

The Strongman archetype parallels the dominant view of leadership early in this century, when "leadership was mainly a matter of how and when to give directions and orders to obedient subordinates. The strong directed the weak" (Bass, 1985, p. 5). The punitive aspects of the Strongman are similar to McGregor's (1960) conception of Theory X leadership, in which the leader assumes that passive, malingering followers require strong, directive leadership. Leadership research at Ohio State University (e.g., Fleishman, 1973) and research on punishment (e.g., Arvey & Ivancevich, 1980) also relate to Strongman leadership.

The Ohio State leadership studies. The punitive and directive aspects of the Strongman archetype can be seen in the results of programmatic research on leadership at Ohio State University in the 1950s (e.g., Fleishman, 1973). Analysis of questionnaire data from the Ohio State studies highlighted two broad behavioral factors related to leader effectiveness: consideration and initiating structure (Yukl, 1989). The consideration factor included behaviors reflecting interpersonal sensitivity and supportiveness, such as considering subordinates' feelings and consulting with subordinates before making decisions. The initiating structure factor included leader behaviors related to defining or structuring the work roles and behavior of the leader and her/his subordinates.

The Ohio State research is important for two reasons. First, it marked a critical reorientation toward leader behavior and away from leader traits. Second, it spawned a large body of research on consideration and structuring leader behavior. "Universal theories" of leader behavior were one outcome of this research (Yukl, 1989). One such theory was Blake and Mouton's (e.g., 1982) normative managerial grid theory. Based on the empirical finding that effective leaders are both task- and relationship-oriented, grid theory asserted that leaders should engage in both types of behavior. Despite the relatively long history of grid theory, Yukl (1989) reports little direct empirical support for the proposition that leaders who behave optimally according to the theory will necessarily be more effective in all situations.

Strongman leadership relates most directly to leader _initiating structure_. Schriesheim, House, and Kerr (1976) compared various operationalizations of _initiating structure_ in behavior questionnaires derived from the Ohio State research. They found that different questionnaires operationalized this dimension in terms of (a) directive structuring behavior and (b) more explicit autocratic and punitive oversight behavior.

As conceptualized by Manz and Sims (1991), the _Strongman_ dimension is inspired by both of these interpretations. As part of its assessment of leader behavior, this research will measure the structuring aspects of Strongman leadership through two behavioral dimensions: (a) _instruction and command_, providing commands and explicit directions about task performance; and (b) _assigned goals_, unilateral action by the supervisor to set explicit requirements for task performance. The punitive aspects of Strongman leadership were measured through two additional dimensions: (c) _intimidation_, that is, implied or explicit threat; and (d) _non-contingent reprimand_, or reprimand that is not clearly connected with subordinate performance.

Punishment research. The _non-contingent reprimand_ dimension is also inspired by research on punishment in organizations by Arvey and Ivancevich (1980); Ball, Trevino and Sims (1991); Podsakoff, Todor, and Skov (1982); and Sims (1980). Two central findings emerged from this research. First, non-contingent punishment had very strong, negative effects on subordinate satisfaction but little effect on performance. Second (and contrary to the predictions of reinforcement theory, discussed below), contingent punishment had almost no effect on subordinate performance.

Ball, Trevino, and Sims (1991) conducted a study on the relationship between supervisor punishment and subsequent subordinate performance and citizenship behavior. Ball et al. explored these relationships in 76 triads in 19 organizations consisting of a supervisor, a disciplined subordinate, and an uninvolved co-worker. They found that subordinate personality, perceived harshness of the punishment or reprimand, and the privacy with which the reprimand was delivered affected subsequent subordinate behavior. The Ball et al. study will be cited throughout this report because its instrumentation contributed to questionnaires used in the present study.

Transactor

The Transactor leads by constructing and clarifying reward contingencies for subordinates. Transactors engage in instrumental exchange relationships with subordinates by negotiating and strategically supplying rewards in return for achievement of goals. These rewards, in turn, evoke calculating compliance from subordinates. Four theoretical perspectives that are consistent with Transactor leadership are path-goal theory (e.g., House, 1971; House & Mitchell, 1974), expectancy theory (e.g., Vroom, 1964), goal setting theory (e.g., Locke & Latham, 1990), and reinforcement theory (e.g., Luthans & Kreitner, 1985). Because they are closely related, path-goal theory and expectancy theory will be discussed together.

Path-goal and expectancy theory. Path-goal theory is an exchange or transactional theory of leadership that is both more situational and more explicitly motivational than grid theory. Path-goal theory relates leader behavior to subordinate performance and satisfaction within a rational expectancy framework. According to expectancy theory, a cognitive theory of motivation, subordinates choose their level of effort based on (a) their expectancy that effort will lead to performance; (b) the instrumentality of performance for outcomes; and (c) the valence, or attractiveness, of the outcomes

Path-goal theory builds on expectancy theory to suggest how leaders can influence subordinates. One path to leader influence is to strengthen the link between behavior and outcomes, the instrumentality of behavior. Leaders can strengthen instrumentality by providing structure, clarification, or coaching. Leaders may also influence subordinates by increasing the valence or desirability of outcomes for goal accomplishment.

House and Mitchell (1974) elaborated path-goal theory by arguing that the leader can shore up motivational deficiencies by compensating for limitations imposed by the work environment, the task, and the subordinate. Initiation structure-oriented leadership, for example, can clarify reward contingencies when the work is complex or ambiguous. On the other hand, a relations-oriented approach might be more appropriate if the requirements for successful performance are well-known but the work itself is unsatisfying.

Path-goal theory is complex; it has been extended and further modified with additional contingencies for task and subordinate characteristics. Bass (1990) summarizes the current state of research on path-goal theory by saying that "it suggests that to obtain the subordinate's effective performance and satisfaction, the leader must provide structure if it is missing and must supply rewards that are contingent on the adequate performance of the subordinate" (p. 633).

Reinforcement theory. Reinforcement theory (e.g., Luthans & Kreitner, 1985; Scott & Podsakoff, 1982) is also related to Transactor leadership. In practice, reinforcement theory is quite compatible with path-goal theory except--in the behaviorist tradition--it lacks a cognitive component. In their book on organizational behavior modification, Luthans and Kreitner (1985) discuss how reinforcement principles can be applied in organizational settings. One of their major conclusions is that a combination of positive reinforcement and extinction is more effective than contingent punishment in influencing behavior. Furthermore, they advocate that punishment, if administered at all, be strictly contingent on subordinate behavior. This recommendation is also consistent with past research on punishment, discussed above (e.g., Arvey & Ivancevich, 1980).

The present study includes three behavioral variables to assess Transactor leadership: contingent material reward, contingent personal reward, and contingent reprimand. These variables are consistent both with reinforcement theory and with path-goal theory's emphasis on behavioral instrumentality. Although these behavioral variables are not part of SuperLeadership per se, later discussion will suggest that they may be compatible with SuperLeadership. Research attests to the overall effectiveness of goal setting and leader contingent reward (Sims & Lorenzi, 1992).

Goal setting theory. Goal setting theory (e.g. Locke & Latham, 1990; Latham, Erez, & Locke, 1988) is also related to Transactor leadership. Goal setting theory proposes that goals can increase performance when combined with feedback on task performance. One particularly robust finding is that challenging, specific goals lead to higher performance than no goals, vague "do your best" goals, or unchallenging goals. Locke and Latham (1988) stress that commitment to goals is important for goal effectiveness; goal commitment is highest, they contend, "when people think they can attain the goal and when there are values associated with goal attainment" (p. 240).

In expectancy terms, then, goal commitment is highest when employees share an expectancy that effort will lead to goal attainment and assign positive valence to the outcomes of goal attainment. As such, goal setting theory is an important complement to path-goal theory. Furthermore, goal setting theory shares the cognitive focus of expectancy theory and path-goal theory. This cognitive focus is evident in the relationship between goals and performance that is proposed by the theory: goals assigned by the supervisor affect the employee's personal goals and her/his self-efficacy, or confidence in her/his ability to perform well. Personal goals and self-efficacy, in turn, affect performance.

Past research on goal setting has found that there is little difference in the effects of assigned goals versus participatively set goals. However, this study will also assess Transactor leadership through a fourth variable, interactive goal setting (goals established jointly by the supervisor and the subordinate). This variable is consistent with both path-goal theory and goal setting theory. Recall that assigned goals were earlier considered part of the Strongman archetype. The rationale for categorizing these behaviors is that assigned goals seem more consistent with the autocratic style of the Strongman; interactive goals, however, are more in keeping with the give-and-take of Transactor leadership. According to goal setting theory, however, both approaches to setting goals can enhance performance.

Visionary Hero

The Visionary Hero leads by inspiring followers and creating "highly absorbing and motivating visions" (Manz & Sims, 1991a, p. 21). This leadership archetype captures the spirit of charismatic and transformational leadership theories (e.g., Bass et al., 1987; Burns, 1978; Conger, 1989). Yukl (1989) indicates that these two perspectives overlap considerably but that transformational leadership tends to be defined more broadly than charismatic leadership.

Charismatic leadership theory. Charismatic leadership theory is closely associated with the work of House (1977) and Conger and Kanungo (1987). Like the definition of leadership generally, Yukl (1989) notes that the definition of charisma varies among different researchers. Locke et al. (1991) contend that charisma "is most visible as a power to arouse emotions in others" (p. 32). House (1977) described charismatic leaders as self-confident and convinced of their own beliefs and ideals. He viewed the identification of followers with the leader as a dynamic process of trust-building, where the leader's ability to inspire and to supply vision arouses commitment and dedication among followers.

Conger and Kanungo (1988; Conger, 1989) view charismatic leadership as an emergent, interactive process between leaders and followers. To Conger, charisma is attributed to leaders by followers: identifying leader behaviors that evoke the attribution of charisma, then, is key to understanding the charismatic leadership process. Like House (1977), Conger (1989) identified communication of vision as an important leader behavior; he also identified challenge to the status quo as an important part of charismatic leadership.

Transformational leadership theory. Transformational leadership was proposed by Burns (1978) as an alternative to transactional leadership. According to Burns, the transformational leader inspires followers to look beyond their own immediate needs towards a longer-term view of the common good. An organizational study by Bass (1985) suggests that the inspiring aspects of transformational leadership can engender substantial commitment from followers. In this study, transformational leaders were "seen to lead the respondents to work 'ridiculous' hours and to do more than they ever expected to do" (Bass, 1985, p. 22).

Although Burns originally proposed that the effect of transformational leadership was positive, Bass (1985) later suggested that transformational leaders could have profoundly negative effects as well: both heros and villains could qualify as transformational leaders. Also unlike Burns, who classified leaders as either transactional or transformational, Bass (1985, 1990) asserted that leaders use a mixture of both approaches. For Bass, then, transformational leadership is a supplement rather than an alternative to transactional leadership. Although research on charismatic and transformational leadership is relatively new, research has associated transformational leader behavior with task commitment and with subordinate ratings of effectiveness (Bass, 1990).

Perhaps because this line of research is relatively new, the core characteristics of charismatic and transformational leaders have not yet shaken out. Four behavioral variables were chosen to represent the Visionary Hero archetype. The first two, vision and idealism, correspond to House's (1977) and Conger's (1989) conceptions of the charismatic leader. The third, stimulation and inspiration, reflects House's (1977) and Bass's (1985) observations on the inspiring aspects of charismatic and transformational leadership. The fourth variable, challenge to the status quo, corresponds to Conger's (1989) portrayal of the charismatic leader as one who pushes the system to change.

SuperLeader

The archetypes discussed above illustrate how three traditional types of leaders position themselves as the primary agents of influence in their organizations. The Strongman influences followers through direction or threat while the Transactor acts on followers as an exchange or reinforcing agent. The Visionary Hero, in turn, inspires or transforms followers.

In contrast, the SuperLeader emphasizes employee self-influence rather than external, top-down influence (Manz & Sims, 1990, 1991a). Scully et al. (1992) describe SuperLeaders as "operat[ing] under the belief that followers are an influential source of wisdom and direction. These [Super]leaders create 'self-leaders' by evoking in them a sense of ownership" (p. 7).

The following paragraphs will relate three theoretical perspectives that were instrumental in developing key SuperLeadership variables measured for this research: behavioral self-management (e.g., Mahoney & Arnkoff, 1978), social learning theory (e.g., Bandura, 1977), and cognitive behavior modification (e.g., Meichenbaum, 1977). Goal setting theory (e.g., Locke & Latham, 1990), discussed above, is also related to SuperLeadership as well as Transactor leadership. The theory discussed below will be referred to periodically later on, when SuperLeadership is elaborated in greater detail.

Behavioral self-management. Behavioral self-management (BSM) adopts a behavioral perspective by extending the principles of reinforcement theory to the self-control of behavior: self-structuring of one's own reinforcement environment is central to BSM. Mahoney and Arnkoff (1978) contend that before the emergence of the self-control perspective, behaviorism had assumed environmental determinism: the forces shaping behavior were seen to lie primarily in the environment rather than the individual. Research on self-control "ushered in the acceptance of a <u>reciprocal determinism</u>. . .[where] the human organism was no longer viewed as a passive product of environmental influence, but as an active participant in his or her own complex development" (Mahoney & Arnkoff, 1978, p. 690).

BSM, closely associated with the work of Thoreson and Mahoney (e.g., 1974), has been used in clinical settings to modify behavior through self-influence strategies such as self-reinforcement, stimulus control, and rehearsal (Mahoney & Arnkoff, 1978; Thoreson & Mahoney, 1974). Luthans and Davis (1979) first suggested that BSM might also be applied by managers in organizational settings. They defined BSM as "the manager's deliberate regulation of stimulus cues, covert processes, and response consequences to achieve personally identified behavioral outcomes" (p. 43). At about the same time, Manz and Sims (1980) wrote an article on "Self-Management as a Substitute for Leadership" that drew upon the work of Thoreson and Mahoney. This article, which foreshadowed SuperLeadership, defined elements of self-management and introduced the question of how leaders can "lead others to lead themselves."

Central to SuperLeadership's emphasis on breaking traditional patterns of top-down influence is encouragement of behavioral self-control among subordinates. Four SuperLeadership behavioral variables, encourages self-goal setting, encourages self-reward, encourages finding natural rewards, and encourages self-observation and evaluation are related to the BSM perspective.

Social learning theory. Mahoney and Arnkoff (1978) argued that reciprocal determinism was only one half of the behavioristic revolution in the mid-60s; the other half concerned "a reappraisal of the radical behavioristic neglect of 'private events'" (p. 690). One outcome of this reappraisal was the idea that thoughts, like behavior, could be modified using principles of behavior change. Social learning theory, which followed on the heels of the cognitive "covert conditioning revolution" of the mid-1960s, provided a framework within which to view the effects of cognition on behavior (Mahoney & Arnkoff, 1978).

Closely associated with Bandura (e.g., Bandura, e.g., 1977, 1989), social learning theory rejects the environmental determinism of traditional behaviorism in favor of "triadic reciprocal causation" in which action, self-generated responses (cognitions), and the environment all affect behavior (Bandura, 1989, p. 1175). Social learning theory explains the acquisition and regulation of behavior in terms of "direct, vicarious, and symbolic sources of information" (Bandura, 1977, p. 192). As such, it has both learning and motivational implications.

Bandura (1977) posits two cognitive sources of behavioral control. The first involves interpretation, symbolic representation, and later symbolic construction of behavior consequences based on vicarious observation of models. The second source involves generating internal standards through self-goal setting and then comparing performance with these standards through self-observation. Contingent self-reward (positive appraisal) after goal accomplishment guides and motivates continued improvement in performance; negative appraisals motivate corrective change.

According to social learning theory, symbolic processes provide a link between goals and action (Bandura, 1989). One central mediator of these processes is self-efficacy or efficacy expectation, "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193) Self-efficacy was earlier mentioned in connection with goal setting theory (e.g., Locke & Latham, 1990). Efficacy epitomizes the centrality of internal representation to social cognitive theory, which links mind and behavior to an extent not admitted by conventional behaviorism. When efficacy is high, higher self-set goals, firmer commitment to goals, and persistence in mastery attempts result. Just as important, however, efficacy expectations affect anticipatory scenarios and affective reactions. Those with high self-efficacy "visualize success scenarios that provide positive guides for performance"; those with low efficacy are burdened by disruptive apprehensive cognitions and "failure scenarios that undermine performance" (Bandura, 1989, p. 1176).

Social learning theory emphasizes the importance of self as a cause of behavior. Analogously, SuperLeadership emphasizes the importance of the individual (i.e., employee) rather than the environment (i.e., supervisor) by stressing self-regulation of behavior. One SuperLeadership variable measured in this study, encourages efficacy expectations, follows directly from social learning theory. Three additional variables, encourages self-observation and evaluation, encourages self-reward, and encourages self-goal setting, were mentioned above in relation to BSM but are also consistent with social learning theory. These variables will be described later on in greater detail.

Cognitive behavior modification. Like social learning theory, cognitive behavior modification reflected the cognitive revolution of the 1960s. Meichenbaum's (e.g., 1977) research on self-instructional training is one prominent example of cognitive behavior modification. Meichenbaum's (1977) research was intended to "conceptualize cognitive events and to understand their role in behavior change" (p. 11). Central to self-instructional training is the "internal dialogue" of private consciousness such as self-talk and its associated attributions, interpretations, self-reinforcements, and beliefs.

Self-instructional training tries to promote adaptive behavior by identifying and modifying self-statements and thought patterns. Two techniques that can be used to foster adaptive patterns of thought are cognitive modeling and rehearsal. Indicative of these techniques is the use of "coping" imagery, where the individual imagines a challenge and then imagines her/himself successfully coping with, though not necessarily mastering, the challenge. The goal of self-instructional training is to substitute adaptive thought patterns--patterns that aid coping--for maladaptive ones. Self-instructional training is essentially a therapeutic technique for cognitive restructuring that promotes the adaptive "success scenarios" discussed by Bandura (1989). The SuperLeadership variable <u>encourages opportunity thought</u> (Manz, 1992) has been included to capture the adaptive thought patterns proposed by Meichenbaum (e.g., 1977) and

Bandura (e.g., 1989). This variable has been related to employee self-leadership by Manz and Sims (1990) and Manz (1992).

Participative management. Theory on participative management does not directly relate to any of the variables measured for this study. However, it does bear on the status of SuperLeadership as a participative leadership perspective. Considered as a continuum, participation can range from autocratic decision making, where the supervisor acts alone, through consultation and joint decision making to delegation, where the leader grants subordinates the authority and responsibility for making decisions (Yukl, 1989).

Perhaps the most prominent theoretical statement on participative leadership has been offered by Vroom and Yetton (1973) and Vroom and Jago (1988). Vroom and Yetton (1973) outlined a normative theory concerning the appropriate degree of subordinate participation in decisions based on the importance of decision quality and decision acceptance by subordinates. Vroom and Jago (1988) revised this model to offer clearer guidance to the practicing manager and to incorporate concerns about time constraints and longer-term employee development.

The Vroom et al. models propose specific rules for decisions that require some degree of management involvement. For certain decisions, the prescriptions of these model apply to the SuperLeader as well. Furthermore, participation and joint decision making are certainly not inconsistent with the SuperLeader's approach.

Unlike the contingencies covered by Vroom et al., however, SuperLeadership largely places the default decision making and control functions with the follower, as long as the issues fall reasonably within her/his area of responsibility. Furthermore, the SuperLeadership perspective extends past work on participation by offering more specific behavioral prescriptions for increasing employee involvement. From a SuperLeadership perspective, these leader behaviors should produce self-led organization characterized by extreme participation. This is compatible with the earlier observations of Burns and Stalker (1961) on organic organization, which they claim to be particularly well-suited to unstable environments. In the organic organization, directive leadership is supplanted by extensive employee involvement, shared authority, and lateral communication flows.

Summary

The past few pages have related several theoretical perspectives to SuperLeadership and three more conventional perspectives on leadership. Note that the four leadership archetypes identified by Manz and Sims (1991a) are not necessarily clear-cut or exclusive, as indicated by a second-order factor analysis of leader behavior by Ball, Trevino, and Sims (1991). Their analysis found that transactional and inspirational leader behaviors generally collapsed into a single dimension. The aversive and directive aspects of Strongman leadership, however, emerged as separate factors. Interestingly, leader encouragement of self-leadership also emerged as a separate factor. Thus, it is important to consider the Manz and Sims typology as mainly conceptually-based rather than empirically confirmed.

The remainder of this chapter will treat SuperLeadership in greater detail and discuss eleven self-leadership strategy variables, most of which have already been mentioned. These variables are <u>internal</u> variables because they are directly related to SuperLeadership and were emphasized in training. Ten of these variables will be related to the strategic <u>content</u> of SuperLeadership; the eleventh variable will be related to the team-based social <u>context</u> of SuperLeadership. This chapter will end by outlining the SuperLeadership training program that was evaluated in the present study; it will also present several research propositions.

SuperLeadership

SuperLeadership and Employee Self-Influence

SuperLeadership organizes and, in turn, is rooted in two key concepts related to employee self-influence: behavioral self-management (BSM; Mahoney & Arnkoff, 1978; Thoreson & Mahoney, 1974) and self-leadership (e.g., Manz, 1992). The discussion of BSM earlier in this chapter will not be repeated here. However, recall that Luthans and Davis (1979) defined BSM as "the manager's deliberate regulation of stimulus cues, covert processes, and response consequences to achieve personally identified behavioral outcomes" (p. 43). Manz (1986) later offered a more generalized definition of BSM as "a set of strategies that aides employees in structuring their work environment" (p. 590). This definition was offered as part of a broader conceptualization of BSM in employment settings that more fully incorporated cognition into the process of employee self-influence (e.g., Bandura, 1977; Meichenbaum, 1977). Manz (1986) asserted that the behavioral outcomes of conventional BSM are often specified by upper-level management rather than by employees themselves. As such, he argued that conventional applications of BSM are more an internalized assertion of organizational control than true employee self-control.

Manz (1986) argued that employee self-influence is fully expressed only when employees exercise self-management within a context of proactive self-determination and relative autonomy. He adopted the term self-leadership to capture this more comprehensive form of self-influence. Self-leadership, of course, subsumes effective behavioral self-management. However, Manz viewed self-led employees as setting their own agendas; they perceive and respond to--even anticipate--their own requirements and the requirements of the job itself rather than the demands of their supervisors.

Recall that Luthans and Davis's (1979, p. 43) earlier definition of BSM incorporated "personally identified behavioral outcomes" that nod in the direction of Manz's self-leadership. However, Luthans and Davis were specifically addressing a managerial audience. Manz applied his idea of self-leadership to all employees. What he proposed was a community of self-leaders.

Potential Advantages and Disadvantages

The SuperLeader's mandate, "to lead others to lead themselves" (Manz & Sims, 1990, p. 5), follows directly from Manz's concept of self-leadership. Leaders become SuperLeaders, according to Manz and Sims (1991a), by encouraging self-leadership among followers. In so doing, they claim, the SuperLeader harnesses "the strength and wisdom of many persons--by helping to unleash the abilities of the 'followers' (self-leaders) that surround them" (p. 22). Manz and Sims argue that the SuperLeader does this by using two points of leverage spanning both the content and context of organizational self-leadership. First, s/he encourages employees to use several self-influence strategies that collectively constitute the content of self-leadership. Second, s/he introduces supportive elements into the social context of work by promoting teamwork among subordinates.

Before turning to how leaders can promote employee self-leadership, consider why they might want to do so. Manz and Sims (1990) argue that substantial benefits accrue to leaders who replace external influence with employee self-leadership: costly oversight can be reduced, command bureaucracies can be trimmed to permit greater organizational flexibility and responsiveness, and management is freed from routine supervision to focus on longer-range issues. Furthermore, employee self-leadership may enable gains in quality and productivity that are impossible when leaders--formal "managers"--act alone. At Hewlett-Packard for example, engineers in one plant were able to cut defects in half by modifying production processes. However, when "HP turned to its workers. . .they practically rebuilt the operation--and slashed defects a thousandfold" (Port & Carey, 1991, p. 16). From a SuperLeadership perspective, this Hewlett-Packard plant is a community of self-leaders.

The competitive advantages offered by gains in productivity, flexibility, and quality need to be considered in light the downside risk of SuperLeadership: employees may not react in a responsible way if given the opportunity. Manz, Keating, and Donnellon (1990) offer an ethnographic account of difficulties involved in establishing the levels of trust required for the transition to comprehensive employee self-leadership.

The First Point of Leverage: Encouraging Use of Self-Leadership Skills

The first point of leverage for the aspiring SuperLeader is to encourage employees to use several self-leadership strategies. Many strategies are possible and, indeed, a major challenge in conceptualizing this project was to derive a manageable set of self-leadership strategy variables. Six strategy variables, however, seem to capture the developing stream of thought on self-leadership. These strategies--distilled from Manz and Sims (1990), Manz (1992), Scully et al. (1992), and Ball et al. (1991)--were mentioned above in the review of theory related to SuperLeadership. Note that these strategies constitute internal criteria for the present study; as mentioned earlier, these internal criteria follow directly from the content and context of SuperLeadership and were emphasized in the training. (More complete discussion of potential self-management strategies is offered by Luthans & Davis, 1979; Mahoney & Arnkoff, 1978; Manz, 1992, 1986; and Manz & Sims, 1980). In their review of several of these strategies, Manz and Sims (1990, 1991a) classified self-leadership strategies as mainly cognitive or behavioral. This classification will be followed for expositional purposes.

Self-Leadership Meta-Dimensions

Before discussing these six strategy variables, which have already been introduced, I will first introduce two new strategy meta-variables that were measured in the present research. These two meta-variables, self-problem solving and initiative, are neither clearly behavioral nor cognitive; they were recently proposed by the Ball et al. (1991) research team as more comprehensive indicators of the level of self-leadership among employees. The self-problem solving dimension refers to spontaneous problem resolution by subordinates without supervisory intervention. Initiative refers to subordinates' assuming greater responsibility for autonomous task completion and for spontaneously initiating change. Discussion now turns to the three behavioral and three cognitive self-leadership strategies that can support self-problem solving and initiative.

Behavioral Self-Leadership Strategy Dimensions

The first five self-leadership strategies to be presented have been discussed extensively by Manz and Sims (1990), who consider them primarily behavioral in origin and effect. These strategies include self-observation/evaluation, self-reward, and self-goal setting.

Self-observation/evaluation. Self-observation / evaluation (Bandura, 1977a; Mahoney & Arnkoff, 1978; Thoreson & Mahoney, 1974) involves self-generated feedback. Self-observation in the workplace could be informal, such as periodically attending to general levels of performance, or formal, such as maintaining detailed quality logs. An example of a successful industrial application of self-observation is supplied by Krigsman and O'Brien (1987), who reduced waste in a manufacturing setting by instructing employees to monitor their use of materials.

Self-reward. Self-reward (Bandura, 1977a; Mahoney & Arnkoff, 1978; Thoreson & Mahoney, 1974) involves self-administered reinforcers, either overt or covert. Self-reward promotes self-control by virtue of its immediacy; it can be used to fill gaps in external reinforcement with self-reinforcers such as special treats, self-praise, positive thoughts, and the like. In their study of a manufacturing organization, Manz and Sims (1987) found that subordinate ratings of supervisor effectiveness were positively related to supervisor encouragement of self-reward. Self-reward is a potentially useful strategy for focusing attention and sustaining motivation.

Self-goal setting. Self-set goals are standards for behavior or performance that are established by employees themselves (e.g., Bandura, 1977a; Bandura, 1989; Mahoney & Arnkoff, 1978). Although the conditions determining the relative effectiveness of self-set versus assigned goals are unclear and probably complex, self-set goals may be better-accepted by employees (Erez, Earley, & Hulin, 1985; Latham, Erez, & Locke, 1988). Note also that effectiveness criteria are themselves context-specific and subject to various interpretations. From a self-leadership perspective, self-goal setting involves both self-definition and self-quantification of criteria. The primary role of the SuperLeader is to communicate overarching organizational goals so that subordinates' self-defined goals are appropriate and consistent with broader organizational objectives.

Toto, Inc., a Japanese manufacturer, practices an industrial application of self-goal setting that also includes aspects of cuing and self-observation. Toto employees "post their monthly personal goal, such as reducing the time to set up a certain machine. . .[and use] a table to plot their progress" (Neff, 1991, p. 22). Manz and Sims (1990, 1991a) view self-set goals as particularly important to self-leadership.

Cognitive Self-Leadership Strategy Dimensions

To narrow its scope to manageable proportions, this study is primarily behavioral in focus. Nevertheless, Manz and Sims consider encouraging use of cognitive strategies for self-leadership to be an important part of SuperLeadership. Consequently, three broad cognitive strategy variables were included to provide more complete coverage of SuperLeadership. These strategies are inspired by Manz and Sims (1990) and the much more detailed discussion of Manz (1992). These strategies, which pertain to cognitive restructuring of the work environment (e.g., Mahoney & Arnkoff, 1978), include finding natural rewards, opportunity thought, and efficacy expectations.

Finding natural rewards. Finding natural rewards at work is a variant of self-reward, discussed above. Natural rewards were central to Manz's (1986) idea of self-leadership because they promote motivational, not just behavioral, autonomy. Manz and Sims (1990) suggest that employees pursue natural rewards from their work by "deliberately seeking out and building in [work] activities that provide feelings of competence, self-control, and purpose" (p. 33). These feelings are reminiscent of task characteristics that promote internal or intrinsic motivation in the established traditions of job characteristics theory and cognitive evaluation theory (e.g., Deci, 1980; Hackman & Oldham, 1980; Hackman, Oldham, Janson, & Purdy, 1975). By choosing how their work will be done, according to Manz and Sims, employees can maximize its natural rewards according to their own unique needs and values. In short, Manz and Sims propose utility maximization through self-job design. Self-job design, they argue, shifts the seat of motivation from the organization or supervisor to the employee; performance, then, should follow dictates from within rather than from above.

Opportunity thought and efficacy expectations. Neck (1992) is presently conducting a detailed study of the effect of several cognitive strategies on employee performance. Two additional variables, encourages opportunity thinking (Manz, 1992) and encourages efficacy expectations (Bandura, 1977a), are useful proxies for several of these strategies. Opportunity thinking, which has been related to self-leadership by Manz and Sims

(1990) and Manz (1992), is a strategy for approaching adversity that emphasizes opportunities for effective performance rather than obstacles to performance. Efficacy expectations, confidence in one's ability to perform well and meet prospective challenges, parallels Bandura's (1977, 1989) concept of self-efficacy discussed above. Eden (1984) and Eden and Shani's (1982) research on the Pygmalian effect and self-fulfilling prophecy has found that followers perform better when the leader expresses confidence in them.

Opportunity thinking has the potential to reduce blocks to performance by focusing thought on potential solutions rather than obstacles. Efficacy expectations, in turn, remove self-doubt as an additional obstacle to performance. Neck (1992) cites a range of studies documenting performance gains from the use of cognitive strategies related to opportunity thought and efficacy expectations. In the organizational literature, Manz, Adsit, Campbell, and Mathison-Hance (1988) suggest that low self-efficacy can inhibit performance in organizations by leading the individual to view "potential situational difficulties" as "greater than they really are" (p. 449). Consistent with this interpretation, their field study found that lower-performing managers focused more on personal skill deficiencies as hindrances to performance while higher-performers tended to focus on less-personal, external hindrances to performance.

Though novel in their specific application to cognition in the workplace, opportunity thinking and efficacy expectations are rooted in established approaches to cognitive-behavior therapy. Meichenbaum (1977), for example, encourages clients to "increase their awareness of the negative self-statements and images they emit" as part of a broader focus "on the client's learning to employ specific problem-solving and coping skills" (p. 198).

SuperLeadership: Encouraging Followers to Use Self-Leadership Skills

Encouraging followers to use the self-leadership skills described above is an important, concrete point of leverage for the aspiring SuperLeader. The techniques for doing this follow from three key roles that are played by the SuperLeader according to Manz and Sims (1990): teacher, coach, and model.

The SuperLeader's role as teacher is important in the early stages of the transition to self-leadership. At this stage, teaching or direct instruction can be an efficient way to transmit self-leadership strategies. Instruction might be formal, perhaps occurring in staff meetings or during one-on-one performance appraisal or problem-solving sessions. Instruction might also occur on an informal, as-needed basis.

The SuperLeader's role as coach is more lasting and more characteristic of her/his daily leadership responsibilities. SuperLeader-coaches can promote employee independence by externally reinforcing self-leadership: Manz and Sims (1991a) "are basically in sympathy with. . .[the viewpoint] that material rewards should be used to reinforce desirable job-related behaviors" (p. 27).

To some extent, this aspect of their coaching responsibilities implies a reversion to Transactor leadership. Note, however, that the SuperLeader's reinforcement is directed towards self-leadership behaviors generally rather than completion of specific tasks. Furthermore, it is "essential" that SuperLeaders "construct a reward system that emphasizes self-administered and natural rewards [from the work itself] and, in a comparative sense, de-emphasizes externally administered rewards" (Manz & Sims, 1991a, p. 27).

Coaching is an ongoing, interactive supplement to the SuperLeader's instructional efforts. Hence, the SuperLeader offers "constructive suggestions. . .and coaching on effective self-leadership behavior and thinking" (Manz & Sims, 1990, p. 55) with an emphasis on thought-provoking questions in the Socratic tradition. The Transactor interactive goal setting strategy might be a particularly useful coaching tool early on. However, because it implies ongoing dependency by the follower, this is not a SuperLeadership strategy per se.

Manz and Sims note that the SuperLeader may occasionally find it necessary to reprimand. However, they advocate that reprimand be treated as an occasion for constructive diagnosis and problem-solving.

In her/his role as model of self-leadership, the SuperLeader can also encourage self-leadership by simply practicing it. Manz and Sims (1980, 1981; Sims & Manz, 1981-82) have written extensively about modelling and vicarious learning in the workplace. They recommend modelling to help employees establish new behaviors, change existing behaviors, and activate previously learned behaviors. They particularly advocate modelling leadership behaviors such as self-leadership, which "are among the most likely [behaviors] to be copied and imitated" by employees (Manz & Sims, 1990, p. 89). The SuperLeader practices self-leadership at work to demonstrate "standards for self-reinforcement" (Manz & Sims, 1980, p. 365). Subordinates can observe these standards at work with their own supervisors, interpret them in light of the needs they identify in themselves and the organization, internalize them vicariously, and evaluate their own performance accordingly (Manz & Sims, 1980).

Weiss (1977, 1978) has documented modelling effects in organizations by operationalizing modeling as similarity between supervisor and subordinate behavior. Weiss has found that behavioral similarity between supervisors and subordinates was related to subordinate perceptions of supervisor success and competence. These findings are broadly consistent with Manz and Sims's (1990) position that SuperLeaders can promote self-led followership by successfully using and modelling self-leadership techniques.

Summary

The last few paragraphs have described the content of SuperLeadership: self-leadership meta-dimensions and strategies that center on the behavior and cognitions of the individual. However, Manz and Sims (1990) also stress the important contributing role of an organizational context that supports self-leadership through teamwork. By context I mean the social or interpersonal aspects of people working together. Establishing a team-based work context is a second point of leverage for the SuperLeader.

The Second Point of Leverage: Establishing a Facilitative Self-Leadership Context Through Teamwork

Manz and Sims (1990) treat the organizational context of self-leadership largely in terms of teamwork and cooperation; they consider teamwork an important part of the "self-leadership system" (p. 182). They argue that problems will arise at work that cannot be solved by individuals working alone; fresh perspectives or direct assistance will sometimes be necessary. Self-leadership under these conditions will sometimes require peer collaboration and cooperation. By encouraging this collaboration, SuperLeaders can foster a norm in which every employee is a potential resource for others. To reflect the importance of teamwork to SuperLeadership, this study incorporates an eleventh dimension, teamwork, in addition to the ten self-leadership meta-dimensions and strategy dimensions discussed above.

Sims and Manz (1982; Manz & Sims, 1987) pursued their emphasis on teamwork and cooperation as a result of a field study they conducted in a small, non-unionized auto parts assembly plant in the southern United States. Operations in this plant were organized around small teams of employees for each segment of the production process. Sims and Manz discovered that these teams were springboards for self-leadership throughout the plant: teams collaborated within and between themselves to set their own production and quality targets, conduct and evaluate quality inspections, schedule production, and track inventory. They also selected their own members, assigned work, and handled internal discipline. Moreover, they performed all of these tasks without routine management intervention.

The daily examples of self-leadership exercised by these teams were punctuated by periodic meetings that amounted to group problem-solving sessions. Sims and Manz (1982) analyzed the content of discussion during these meetings. They found that the tone of these meetings was occasionally contentious, particularly when internal discipline was an issue, but also problem-focused, generally nondirective, involving, and centered on self-responsibility. Sims and Manz interpreted these meetings as concentrated exercises in self-leadership.

The plant observed by Sims and Manz (1982) is a textbook example of self-managing team working (e.g., Cummings, 1978; Hackman, 1987). Self-managed teams, carefully planned and implemented, can promote self-leadership where the unit of analysis is the group. Originally, SuperLeadership, while entirely compatible with self-managed teams, was limited mainly to the individual. The present training program emphasized the importance of teamwork in Manz and Sims's (1990, 1991a) recent statements by including modules related to promoting teamwork and cooperation among subordinates. However, note that the training in this research is not intended to promote self-managing teams per se; establishing self-managing teams involves sociotechnical analysis and design that were beyond the scope of the present intervention.

SuperLeadership Training

The last few paragraphs in this section of the proposal will briefly introduce the SuperLeadership training program that was used as the manipulation for this experiment. Dr. Henry P. Sims, Jr. was responsible for designing and carrying out this training. The content of training was organized around the two points of SuperLeadership leverage discussed above: self-leadership strategies and teamwork. The material was taught through a combination of written cases, video-cases, video illustrations, interactive discussion, role-playing, and lecture. The training took approximately three working days, or a total of about 20 hours. It is important to note that the design of the training itself was not within the scope of this research. The training design was an holistic exogenous variable.

Technique and Curriculum

The trainer used an interactive, participatory approach to training. Training participants were seated to encourage them to talk with each other. Training was organized through modules, each of which conveyed one or more specific points to the trainees. A comprehensive inventory of modules used for the training, with descriptions of each module, is presented in Appendix 2-1. These modules will be discussed further in Chapter IV.

The trainer began each module by presenting a problem or issue for consideration by the trainees--a case, a problem, a video, or an exercise. Participants then grappled with the issue, made preliminary decisions, and came to preliminary conclusions. Lecture and/or discussion were then used to introduce an organizing framework to clarify possible approaches or solutions to the problem and offer tips for pragmatic application. Short videos were frequently used to supplement discussion or to illustrate a point. Although the material presented in training was based on theory, the workshop was entirely pragmatic. Training focussed on how participants could apply ideas to their own jobs and work situations.

A follow-up session was scheduled with the participants to reinforce the training and to offer suggestions for overcoming problems with implementation.

This session offered participants an opportunity to give and receive feedback and advice in an informal atmosphere.

Research Propositions

This final section distills the above discussion of SuperLeadership into a set of seven research propositions. These propositions specify internal criteria for the effectiveness of SuperLeadership training. Table 2-3 summarizes the internal dependent variables that were measured in the present study; the table also tags each variable with the research proposition that corresponds to it, described below.

The first proposition pertains to trainees' own perceptions of the extent to which they encourage the two self-leadership meta-dimensions, the eight specific behavioral and cognitive self-leadership dimensions, and the additional dimension of teamwork. Following a significant multivariate statistical test, trainee perceptions for each dimension were to be tested separately. Consequently, the following proposition potentially contained nine implied subpropositions, one corresponding to each of the above dimensions.

> Proposition 2-1: Participant perceptions of their own SuperLeader behavior will reflect greater gains in the training group than the comparison group.

Table 2-3

Internal Dependent Variables

SuperLeadership/Self-Leadership (Propositions 2-1, 2-2, and 2-3)	Other Leader Behaviors
Meta-Dimensions (Content)	**Strongman (Propositions 2-4 and 2-5)**
Encourages Self-Problem Solving	Instruction and Command
Encourages Initiative	Non-Contingent Reprimand
Behavioral Dimensions (Content)	Intimidation
Encourages Self-Goal Setting	Assigned Goals
Encourages Self-Observation and Evaluation	**Transactor (Propositions 2-6 and 2-7)**
Encourages Self-Reward	Contingent Material Reward
Cognitive Dimensions (Content)	Contingent Personal Reward
Encourages Finding Natural Rewards	Contingent Reprimand
Encourages Opportunity Thought	Interactive Goals
Encourages Efficacy Expectations	**Visionary Hero**
Teamwork (Context)	Vision
Encourages Teamwork	Stimulation and Inspiration
	Idealism
	Challenge to the Status Quo

The second proposition pertains to _subordinate_ perceptions of the extent to which the _trainees_, their supervisors, encourage the two self-leadership meta-dimensions, the six behavioral and cognitive self-leadership dimensions, and the additional teamwork dimension. Following a significant multivariate statistical test, subordinate perceptions for each dimension were to be tested separately. Consequently, the following proposition potentially contained nine implied subpropositions.

> _Proposition 2-2_: Subordinate perceptions of participant SuperLeader behavior will reflect greater gains in the training group than the comparison group.

The third research proposition pertains to _subordinate_ perceptions of their _own_ self-leadership behavior across the nine dimensions. As before, following a significant multivariate statistical test, subordinate perceptions for each dimension were to be tested separately. The following proposition also potentially contained eleven implied subpropositions.

> _Proposition 2-3_: Subordinate perceptions of their own self-leadership behavior will reflect greater gains in the training group than the comparison group.

The fourth, fifth, sixth, and seventh research propositions pertained to perceptions of trainee behavior related to the Strongman and Transactor dimensions of the Manz and Sims (1991a) leadership taxonomy. These propositions were exploratory only. Recall that Ball et al. (1991) found distinct factors for SuperLeader, Strongman, and transactional or visionary leader behaviors. While preliminary, these results suggest that SuperLeadership is to some extent behaviorally distinct from other approaches to leadership.

Based on the earlier discussion of the Manz/Sims typology, it seemed reasonable that Strongman tactics would be incompatible with SuperLed organization. The directive aspects of Strongman leadership (e.g., Schriesheim, House, & Kerr, 1976), for example, should be incompatible a priori with SuperLeadership's emphasis on employee self-leadership and extreme employee participation. Furthermore, the punitive or aversive aspects of Strongman leadership (e.g., Schriesheim, House & Kerr, 1976)--non-contingent reprimand, for example--should be incompatible with SuperLeadership's emphasis on encouraging efficacy. Manz and Sims (1990) note that "one objective of the SuperLeader is to encourage self-confidence as an important part of the transition to self-leadership" (p. 150). Reprimand, particularly non-contingent reprimand, threatens this transition because it "induces guilt and depression and diminishes self-confidence" (p. 151).

Manz and Sims (1990) argue that use of reprimand should be considered particularly carefully early in the transition to employee self-leadership, when subordinates may lack confidence and when "the superior-subordinate relationship becomes very delicate" (p. 148). They recommend that reprimand, if used at all, should be contingent on specific behavior and should be reserved for particularly serious employee behavior. Based on the incompatibility of Strongman behavior with SuperLeadership, SuperLeadership training was expected to promote behaviors that would compete with and suppress Strongman leadership.

The fourth proposition pertains to <u>trainees' own</u> perceptions of the extent to which they engage in four types of Strongman leader behavior (<u>instruction and command</u>, <u>non-contingent reprimand</u>, <u>intimidation</u>, and <u>assigned goals</u>). Following a significant multivariate statistical test, trainee perceptions for each Strongman dimension were to be tested separately. Consequently, the following proposition potentially contained four implied subpropositions, one corresponding to each Strongman dimension. In contrast with Propositions 2-1 to 2-3, note that this proposition implies reverse directionality: unlike perceptions of SuperLeader and self-leadership behavior, perceptions of Strongman behavior were predicted to decrease as a result of the training.

> Proposition 2-4: Participant perceptions of their own Strongman behavior will reflect greater decreases in the training group than the comparison group.

The fifth proposition pertains to subordinate perceptions of the extent to which trainees, their supervisors, engage in Strongman leader behavior. Following a significant multivariate statistical test, subordinate perceptions for each Strongman dimension were to be tested separately. Consequently, the following proposition also potentially contains four implied subpropositions. Note that this proposition also implies reverse directionality.

> Proposition 2-5: Subordinate perceptions of participant Strongman behavior will reflect greater decreases in the training group than the comparison group.

On the other hand, despite the distinctness of SuperLeader behavior found by Ball et al. (1991), the above discussion of the SuperLeader's coaching role suggests that Transactor behavior is compatible with the early stages of the transition to SuperLeadership. The sixth proposition pertains to <u>trainees' own</u> perceptions of the extent to which they engage in four types of Transactor leader behavior (<u>contingent material reward</u>, <u>contingent personal reward</u>, <u>contingent reprimand</u>, and <u>interactive goals</u>). Following a significant multivariate statistical test, trainee perceptions for each Transactor dimension were to be tested separately. Consequently, the following proposition potentially contained four implied subpropositions, one corresponding to each Transactor dimension.

> <u>Proposition 2-6</u>: Participant perceptions of their own Transactor behavior will reflect greater increases in the training group than the comparison group.

The seventh proposition pertains to <u>subordinate</u> perceptions of the extent to which <u>trainees</u>, their supervisors, engage in Transactor behavior. Following a significant multivariate statistical test, subordinate perceptions for each Transactor dimension were to be tested separately. So the following proposition also potentially contained four implied subpropositions.

> <u>Proposition 2-7</u>: Subordinate perceptions of participant Transactor behavior will reflect greater increases in the training group than the comparison group.

The effects of SuperLeadership training on inspirational leadership are unclear. The results of Ball et al. (1991) indicate a degree of conceptual overlap between transactional and inspirational leadership. As such, SuperLeadership training might be expected to increase inspirational leadership as well. On balance, however, I had no a priori basis on which to develop a proposition concerning the effect of SuperLeadership training on inspirational leader behavior.

Chapter III: Organizational Citizenship Behavior: An External Criterion for SuperLeadership Training

Chapter II described SuperLeadership and outlined several internal criteria dimensions that were to be used to assess the effectiveness of the new SuperLeadership training program. This chapter shifts the focus to citizenship behavior, my external criterion, and discusses several dimensions of this external criterion. As mentioned earlier in this report, these external criterion dimensions were not specifically emphasized in the training but should be affected by the training on theoretical grounds. The pages that follow will discuss the relationship between citizenship behavior and SuperLeadership. In this discussion, I will review an established citizenship construct, organizational citizenship behavior (OCB), and assess its status as an external criterion for SuperLeadership training. I will then introduce counterproductive behavior (CB), a newer construct. The chapter will end with two research propositions that were tested as part of the experiment.

Organizational Citizenship Behavior

Organ (1988) defines organizational citizenship behavior (OCB) as "behavior [by the employee] that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (p. 4). Noting that discretionary behaviors vary in the likelihood with which they will be rewarded, Organ (1988) views OCBs as "nonrequired contributions that are regarded by the person as relatively less likely to lead along any clear, fixed path to formal rewards" (p. 5).

To qualify as OCB, then, a behavior must not be "directly or formally recompensed by the organization's reward system" (Organ, 1988, p. 5). To Organ (1988), for example, a salesperson's extra (discretionary) effort to increase sales volume is not OCB if pay and promotional opportunities are tied to sales volume. In this case, the extra effort produces rewards for the individual directly as a matter of organizational policy. Organ acknowledges that OCBs can have a beneficial cumulative effect for an individual and that the individual may consider these long-term benefits. The key to OCBs, however, is that their returns are "not contractually guaranteed," are "at best probabilistic," and are "at most an inference on the part of the individual who contemplates such returns" (Organ, 1988, p. 5).

OCBs can benefit the organization either directly or indirectly. Moreover, they can focus personally on an individual co-worker or more impersonally on the organization as an institution. Examples of OCB include volunteerism, assistance between co-workers, unusual attendance or punctuality, and active participation in organizational affairs (Farh, Podsakoff, & Organ, 1990).

OCB can be considered one of several classes of prosocial organizational behavior (POB) that have been identified by Brief and Motowidlo (1986). They defined the broader POB construct as:

> behavior which is (a) performed by a member of an organization, (b) directed toward an individual, group, or organization with whom he or she interacts while carrying out his or her organizational role, and (c) [is] performed with the intention of promoting the welfare of the individual, group, or organization toward which it is directed (p. 711).

POB differs slightly from OCB in that it also encompasses prosocial gestures that do not promote effective organizational functioning per se. Organ (1988) illustrates this distinction through the example of an employee who helps a co-worker cover up a potentially serious mistake. This act can be considered POB because it benefits the co-worker. However, it does not qualify as OCB because it is ultimately dysfunctional for the organization as a whole.

Considered as individual events, OCBs are almost taken for granted--as when one employee helps another who is having difficulty with a task. Such acts are too small to be noticed by management or directly rewarded in a performance appraisal. Perhaps for this reason, OCBs seem to occur without a calculated expectation of tangible gain or compensation. Though individually inconsequential, however, Organ (1988) contends that OCBs have a beneficial cumulative effect for organizations that is reflected in a strong undercurrent of cooperation.

OCBs imply a selfless sensitivity to co-workers or the organization as a whole--a free willingness to cooperate as an organizational player--that is difficult or impossible to directly reward or specifically require in an employment contract. Smith, Organ, and Near (1983) stress the benefits of OCBs for "lubricat[ing] the social machinery of the organization" (p. 654). They liken OCB to spontaneous behavior that "goes beyond role prescriptions" (p. 653), noting that Katz (1964) considered such behavior essential for strong organizational social systems. The organization, then, gains a measure of systemic resiliency from these small, spontaneous acts of selfless sensitivity, cooperation, and uncompensated contribution.

Dimensions of Organizational Citizenship Behavior

Research specifically directed toward OCB is relatively recent, extending back only to the early 1980s.

Much of this early research has been directed toward defining and clarifying the OCB construct. Two OCB behavioral factors have been repeatedly identified in past research: altruism or helping behavior and conscientiousness or generalized compliance (e.g., Farh, Podsakoff, & Organ, 1990; Organ, 1988; Organ & Konovsky, 1989; Smith, Organ, & Near, 1983).

Altruism. The altruism factor includes face-to-face behavior that directly aids others (Smith et al., 1983). Examples of altruistic OCB include volunteering for extra work or helping other employees who are new, who have been absent, or who have heavy work loads. Altruism increases the efficiency and flexibility of the work force; it reduces the need to devote organizational resources to "purely maintenance functions" and helps the social system accommodate environmental variance (Organ, 1988, p. 8).

Conscientiousness. The second factor, conscientiousness, is more impersonal. It reflects behavior that is "indirectly helpful to others involved in the system" but is not targeted directly toward a specific co-worker (Smith et al., 1983, p. 657). Examples of conscientiousness include above-average attendance and holding breaks to reasonable length. Conscientiousness signals an incremental investment in the productivity of the organization and lends a measure of orderly predictability to the social system.

Although the above two dimensions are well-documented, Organ (1988) notes that the dimensionality of OCB has not been definitively established. He suggests three additional OCB dimensions that had not been explored at the time of his review: courtesy, civic virtue, and sportsmanship.

Courtesy. Whereas altruism involves helping others solve problems that have already arisen, courtesy reflects a degree of interpersonal sensitivity that helps avoid problems from the outset (Organ, 1988). Examples of courtesy come readily to mind, such as being considerate of the impact of one's actions at work on others. The benefit of courtesy for the organization stems mainly from interpersonal conflict avoided.

Civic virtue. Civic virtue suggests an incremental investment in the global welfare, not just the productivity, of the organization. It reflects citizenship, belonging, and constructive engagement. An example might be rank-and-file attendance at meetings that are not required. Organ (1988) contends that civic participation benefits the organization indirectly by "bringing more knowledge and points of view to bear upon the formulation of [organizational] policy" (p. 13). The short-term cost of civic virtue in terms of productivity, he contends, can be offset by the benefits of better long-term decisions for the organization. The benefit of civic participation to the organization, increased knowledge and expressed diversity of opinion, is indirect but nevertheless potentially substantial (Organ, 1988).

Sportsmanship. Sportsmanship is defined primarily as the obverse of negative actions such as "complaining, petty grievances, railing against real or imagined slights, and making federal cases out of small potatoes" (Organ, 1988, p. 11). Sportsmanship spares the organization from the distracting dissipation of ceaseless grievances and infighting. This dimension has undergone considerable reconceptualization since its inception and is now considered by Ball, Trevino, and Sims (1991) to be a class of anti-citizenship behavior.

Counterproductive (Anti-Citizenship) Behavior

In their review of research on job satisfaction, Fisher and Locke (1991) reported research relating general job satisfaction to positive behaviors such as OCB. They also report research relating general job satisfaction to negative or "non-compliant" behaviors, defined by Puffer (1987) as "non-task behaviors that have negative organizational implications" (p. 615). Fisher and Locke focus particularly on behavioral responses to job dissatisfaction, which have not been explored as extensively as satisfaction-related behaviors. Conceptual typologies of likely responses to job dissatisfaction include physical and psychological withdrawal, perceptual adjustment, and protest actions (Fisher & Locke, 1991).

Based on preliminary research, Fisher and Locke (1991) developed an inductive taxonomy of negative behavioral responses to job dissatisfaction. A range of possible behaviors were identified in two early studies by asking respondents about actions they took, considered taking, or had seen taken by others in response to job dissatisfaction. Subsequent research built on this initial item pool, categorized the items into dimensions, and developed ratings of the relative "badness" of the items. Four behavioral dimensions from the Fisher and Locke taxonomy were later conceptualized as examples of anti-citizenship behavior by Ball et al. (1991).

As mentioned earlier, the four dimensions explored by Ball et al. were derived inductively through research reported in Fisher and Locke (1991). Clearly, four dimensions do not exhaust the range of negative behaviors that might be exhibited by employees. The present study will focus specifically on items from three of these four dimensions in order to extend the existing empirical base established by Fisher and Locke and Ball et al. However, note that the better-established organizational citizenship behavior construct remains the primary focus of this chapter.

This study substitutes the term counterproductive behavior (CB) for anti-citizenship behavior to accommodate the possibility that these negative behaviors might not directly oppose OCB to the extent implied by the term anti-citizenship. Sims, for example, has suggested that OCBs and CBs may be separate, coexisting dimensions that range from zero to some positive quantity (personal communication, March 13, 1991). Accordingly, reduced (increased) citizenship behavior need not necessitate a corresponding increase (reduction) in counterproductive behavior. The absence of citizenship behavior, for example, might only signal passivity with respect to positive citizenship. Counterproductive behavior, however, involves activity that has specifically negative implications for the organization. The term counterproductive behavior will be used instead of anti-citizenship behavior throughout the rest of this report.

Although Ball et al. (1991) found a substantial negative (-.74) correlation between organizational citizenship behavior and counterproductive behavior, their second-order factor analysis supported the conceptual distinctness of these two classes of behavior. This finding offers preliminary support for the separate dimensionality of OCB and CB.

Dimensions of Counterproductive Behavior

The first CB dimension included in the Ball et al. (1991) study was physical avoidance or escape from the job as a whole, reflecting behaviors like chronically late arrival to work or falsely calling in sick. The second dimension, more narrowly defined as avoidance of the work itself, includes gold-bricking behavior like letting others do one's own work or looking busy while doing nothing. The third dimension, defiance and resistance to authority, includes behavior like deliberately ignoring rules and regulations or talking back to supervisors. The fourth dimension, aggression, revenge, retaliation, getting even, includes destructive behaviors such as sabotage, lying, and purposeful interference with the work of others. For reasons that will be discussed later in the methods section, the aggression dimension was not included in the present research.

Measures of Citizenship

The development of OCB, like many emergent constructs in organizational research, is connected to the development of instruments used to measure its dimensions. The following paragraphs briefly trace the development of

OCB and CB measures, including those used in the present research.

The Bateman and Organ (1983) and Smith, Organ, and Near (1983) Measures

Two measures of OCB have been widely used in past OCB research. The first is a 30-item measure that was written by Bateman and Organ (1983) to tap behaviors thought related to the OCB construct. Subsequent analysis revealed psychometric problems including range restriction and inappropriate wording (Organ, 1988).

Partly in response to these problems, Smith, Organ, and Near (1983) produced a shorter, 16-item behavioral questionnaire that has also been popular. This measure was developed inductively by asking supervisors to "identify instances of helpful, but not absolutely required, job behavior" (Smith et al., 1983, p. 656). Factor analysis produced two factors, generally interpretable as the primary altruism and conscientiousness dimensions that have already been described.

The Smith et al. (1983) questionnaire has been the measure of choice in most OCB research (e.g., Dalton & Cosier, 1988; Farh, Podsakoff, & Organ, 1990; Organ & Konovsky, 1989; Smith, Organ, & Near, 1983). This research has generally reproduced the two-factor solution reported by Smith et al. (1983), though not without exception (e.g. Dalton & Cosier, 1988; Organ & Konovsky, 1989).

The Ball, Trevino, and Sims (1991) Citizenship Measure

OCB dimensions. As of 1988, Organ (1988) observed that OCB research was too new to have produced a definitive measure. Podsakoff and MacKenzie (1989) developed a new OCB survey in an attempt to more completely cover the full five dimensions of OCB proposed by Organ (1988). This measure was later validated by Podsakoff, MacKenzie, Moorman, and Fetter (1990) and used in modified form by Moorman (1991). Ball et al. (1991) adapted items from this measure for use in a citizenship behavior questionnaire that taps both OCB and CB. The Ball et al. citizenship measure, which was chosen for use in this research, will be discussed later in the methods section of this proposal. For now, however, note that the OCB dimensions in this instrument include items representing four of the five dimensions discussed by Organ (1988) with the exception of sportsmanship (see below).

CB dimensions. The Ball et al. (1991) citizenship measure also included CB dimensions based largely on items generated in research reported by Fisher and Locke (1991).

Besides including the four CB dimensions discussed above, the Ball et al. citizenship measure also included items that were originally part of the OCB sportsmanship dimension (Podsakoff & MacKenzie, 1989). This dimension had originally been identified in a reanalysis of data from Bateman and Organ (1983; Organ, 1988). However, Ball et al. objected to the label of this OCB dimension, claiming that the semantic content of the questionnaire items was more directly interpreted as reflecting complaining than sportsmanship.

Ball et al. (1991) renamed the dimension accordingly and included it in adapted form from Podsakoff and MacKenzie (1989) as a fifth dimension of counterproductive behavior in their citizenship measure. The wording of items in this dimension is consistent with the interpretation that they represent active CB: they refer to active, negative behaviors (e.g., "Since this incident occurred, he/she has consumed a lot of time complaining about trivial matters" (Ball, Trevino, & Sims, 1991, p. 50). The Ball et al. interpretation of complaining as a dimension of CB was supported by their second-order factor analysis, which found that this dimension loaded with the other four dimensions of counterproductive behavior contained in their citizenship measure.

The CB dimensions identified by Fisher and Locke (1991) and Ball et al. (1991) do not have an extensive track record in research. To extend their base of empirical support, four of these dimensions--avoidance of the job, avoidance of work, defiance, and complaining--were measured in the present study for exploratory purposes. The body of this chapter will be devoted to relating SuperLeadership specifically to the more-established OCB construct. CBs will be mentioned occasionally, however, and the research propositions presented at the end are written to reflect both OCB and CB. Table 3-1 summarizes the external dependent variables (OCB and CB dimensions) that were measured in the present study.

Organizational Citizenship Behavior and SuperLeadership Training

The remainder of this chapter will discuss OCB as an external criterion for the present SuperLeadership training intervention. Schmitt and Klimoski (1991) define criteria as "evaluative standard[s]. . .we can use to index the level of person, group, or organization effectiveness" (p. 158). Appropriate criterion specification requires a delicate balancing act between the yin and yang of deficiency and contamination: on one hand, the criterion must be sufficient to register the

Table 3-1

External Dependent Variables

Organizational Citizenship Behavior (Proposition 3-1)
Conscientiousness
Altruism
Courtesy
Civic Virtue
Teamwork

Counterproductive Behavior (Proposition 3-2)
Physical Avoidance or Escape from the Job as a Whole
Avoidance of the Work Itself
Defiance and Resistance to Authority
Complaining

effect of a predictor; on the other, it must be adequately circumscribed so that it is both interpretable and minimally affected by other sources of causation. This balance lies at the heart of the criterion problem. OCB satisfies the above requirements as a criterion for the present experiment's SuperLeadership training manipulation.

OCB as an External Criterion

Although it continues to evolve as a construct, OCB is rapidly emerging as an interpretable and practical criterion of employee effectiveness. OCB is sufficient and meaningful for the present application because it is a coherent, theoretically-grounded composite criterion of employee effectiveness; it includes a whole class of behaviors that are individually specified yet conceptually unified (e.g., Fisher & Locke, 1991). Furthermore, OCB is minimally contaminated for the present study because it is under the volitional control of individual employees (e.g., Bateman & Organ, 1983; Organ, 1988). In contrast, consider plausible alternative criteria for training effectiveness such as turnover or productivity. These criteria are contaminated by factors beyond the scope of this intervention such as the job market, product development and demand cycles, general economic conditions, and production technology. Critically, and unlike OCB, these criteria are also relatively narrowly-defined. Consequently, they may not capture the breadth of the SuperLeadership intervention.

The sufficiency of OCB is reflected in the wide range of variables that have been related to it. Although a comprehensive review of these variables and their relationships to OCB is beyond the scope of this proposal, past research has found relationships between various facets of OCB and employee demographic characteristics (Smith, Organ, & Near, 1983), perceived fairness (Farh, Podsakoff, & Organ, 1990; Moorman, 1991; Organ & Konovsky, 1989), job satisfaction (Bateman & Organ, 1983; Smith, Organ, & Near, 1983), supervisor punishment behavior (Ball, Trevino, & Sims, 1991), and task scope (Farh, Podsakoff, & Organ, 1990). The interested reader is referred to Organ (1988) for a thorough and relatively recent review of OCB research.

In the paragraphs that follow, I will argue that OCB was expected to emerge and increase as the transition to SuperLeadership progressed. Recall that two central elements characterize SuperLeadership: self-leadership and teamwork. I will relate these elements to OCB in the sections that follow.

OCB and SuperLeader Encouragement of Employee Self-Leadership

According to Manz and Sims (1990, 1991), the SuperLeader directly encourages a norm of employee self-leadership that will ideally become a mandate as the leader extricates herself from the command-and-control cycle. As the transition to self-leadership progresses, the SuperLeader serves less as a source of direction and command than "as a source of information and experience, as a sounding board, and as the transmitter of overall organizational goals" (Manz & Sims, 1991, p. 31). The role of consultant and facilitator, which typifies the SuperLeader's relationship with mature self-leaders, further reinforces the self-leadership norm. Ideally, the result is a cadre of nominal "followers" that have extensive, often decisive personal responsibility for their work and how they will carry it out. I contend that the personal responsibility mandated under SuperLeadership will foster employee behaviors that are consistent with Organ's conception of OCB.

No direct references were found in the organizational psychology literature to a connection between OCB and mandated employee responsibility of the kind that should emerge under SuperLeadership. Suggestive parallels were found, however, in the counselling psychology literature on therapy groups. Antonuccio, Davis, Lewinsohn, & Breckenridge (1987), for example, found that group cohesiveness was positively related to nondirective leader behavior in eight psychoeducational therapy groups. These findings are consistent with earlier work by Angell and DeSau (1974), who experimentally explored the relationship between leadership and group process in leaderless, democratically-led, and directively-led therapy groups. Only the leaderless group showed increases in problem-solving behavior over time. The authors attributed this to the <u>absence</u> of direct leader support, which may have produced "discomfort, anxiety, and unusual behavior in the common social sense [that] are related to group growth and problem solving" (p. 55).

Seligman and Desmond (1975) offered an historical review of leaderless group therapy that supports the observations of Antonuccio et al. (1987) and Angell and DeSau (1974). According to Seligman and Desmond, proponents of leaderless group therapy observe that "patients are actually helped by their peers and are cast into a constructive role of 'helper'" (p. 281). Group cohesiveness and shared leadership result from leaderless therapy's "denial of leader role[,] with resultant heightened 'group-centeredness' and individual sense of responsibility" (p. 282).

The generalizability of this research and commentary to non-therapeutic settings cannot be assumed. Nevertheless, it is broadly consistent with the idea that an absence of hierarchical control can promote greater personal responsibility, mutual assistance, and collaborative problem-solving among nominal followers. It is also consistent with Manz and Sims's (1990, 1991) assertion that self-leadership, with its accompanying feelings of ownership, commitment, and personal responsibility, can fill the void created by dissolving hierarchical reporting structures.

Summary. It seemed reasonable that OCBs would be promoted by the SuperLeader's emphasis on employee self-leadership rather than top-down direction. Mutual assistance and interpersonal cohesion imply altruism and courtesy, for example, setting aside for a moment the confrontational aspects of therapeutic introspection. Moreover, personal responsibility seems consistent with the OCB dimension of conscientiousness. On the other hand, several dimensions of CB should be suppressed under SuperLeadership. Heightened sensitivity to personal responsibility viz-a-vis co-workers, for example, should reduce physical avoidance from the job, avoidance of the work itself, and retaliation. By promoting a SuperLeader orientation toward employee self-leadership, then, the training was expected to increase employee OCB and reduce CB.

OCB and SuperLeader Encouragement of Teamwork

The discussion to this point makes a case that OCB should be promoted under SuperLeadership through self-leadership. The findings from the counselling psychology literature are suggestive because they trace a possible connection between self-leadership and OCB-like behavior among nominal followers in interventions that are not explicitly team-oriented. This section extends this notion by suggesting that the SuperLeader's direct encouragement of teamwork will also promote OCB-like behavior. The following research and commentary will link OCB-like behavior specifically to team self-leadership. This discussion will be used as a foil to suggest that OCB should also result from the SuperLeader's encouragement of teamwork.

Citizenship and self-leadership in self-managed teams. The organizational psychology literature contains extensive discussion of self-managing team-based production arrangements. Self-managed team interventions are necessarily sweeping, systemic, and sometimes wrenching for the participants (c.f., Rice, 1955; Trist, Susman, & Brown, 1977; Walton, 1972). As a consequence, the generalizability of this research to work settings is to some extent offset by its complexity, which defies definite causal statements about leadership, self-management, and OCB. Nevertheless, self-managing work teams share important similarities to SuperLed work contexts as portrayed by Manz and Sims (1990, 1991): they combine non-directive leadership from above with an emphasis on employee self-leadership and teamwork. Self-managed teams are also characterized by employee behaviors that are strikingly akin to OCB.

Consider, for example, some of the signal characteristics of self-managed work teams that have been observed by Hackman (1987). These characteristics unite self-leadership, teamwork, and OCB: team members feel personally responsible and accountable for their work; they self-lead by monitoring and directing their own performance and by taking corrective action on their own initiative (conscientiousness); and they actively help co-workers and constructively seek guidance, help, or resources from others (altruism). In a similar vein, the Tavistock Institute characterized self-managing teams as facilitating social relationships and cooperation that seem reminiscent of OCB (Pearce & Ravlin, 1987).

Walton's (1972) description of a team-based food processing plant is a case-in-point of how work behaviors and relational patterns among self-managed team members seem to capture several aspects of OCB. Below-average absenteeism in the plant and broad employee involvement in developing and implementing new production techniques, for example, suggest a great deal of conscientiousness. Employee altruism was evident on-site in extensive mutual assistance and adjustment. Civic virtue, both within and outside the plant, was evident in extensive self-governance by shop-floor team members and unusual activity in public affairs in the surrounding community. This experiment in self-managed team working--which also included extensive technical innovations not described here--reported impressive reductions in overhead and gains in quality.

Kolodny and Kiggundu (1980) illustrated the importance of OCB-like behavior to self-managing teams with their ethnographic account of woodlands harvesting teams. In attempting to explain large and consistent differences in productivity across different teams, the authors discovered that team productivity rested critically on behaviors that resemble altruism and courtesy as defined by Organ (1988). High-producing teams, for example, were characterized by extensive, informal altruism: experienced machine operators offered technical advice to each other on their radios and provided informal, after-hours training for less-experienced operators. High-producing teams also reflected courtesy, as when operators saved support mechanics several trips to the field by making an extra effort to precisely explain the nature of a mechanical problem.

Consistent with Organ's (1988) description of OCB, Kolodny and Kiggundu observed spontaneous and informal support between members of high-producing teams. Moreover, when certain employees failed to exercise their option of OCB, substantial disruptive consequences resulted for group performance and interpersonal relations. Kolodny and Kiggundu observed that some machine operators, for example, generated substantial interpersonal friction and productivity losses by merely reporting mechanical problems but not making the extra effort to troubleshoot their cause in the field. In essence, they used mechanical problems as an opportunity to take a break while uninformed mechanics ran the gauntlet between the field and the machine shed.

Before turning away from this case, a final comment should be made regarding CB. Earlier it was suggested that OCB and CB may be only loosely coupled: they are not necessarily polar opposites of the same behavioral continuum. Kolodny and Kiggundu's (1980) study, however, illustrates how difficult it can be in practice to distinguish between passivity with respect to OCB and active CB. The behavior of the non-communicative machine operators, for example, might plausibly be interpreted two ways. On one hand, it could be argued that their failure to troubleshoot problems before reporting them to mechanics represents passivity with respect to OCB dimensions such as courtesy and altruism. On the other hand, their conspicuous inactivity on the two-way radio might itself represent signal activity--avoidance of work or even attempted sabotage of the mechanics' efforts. The latter interpretation is supported by Kolodny and Kiggundu's description of how some operators resented the mechanics' overtime pay and working arrangements.

The mandate for positive citizenship in self-managed teams. Factor analysis of the Ball et al. (1991) citizenship measure can be undertaken to clarify the extent to which OCB and CB coexist independently in the present sample. Regardless of the ultimate dependence or independence of these two constructs, however, note that the very group-centeredness of self-managed team working has been found to have a "corrective" effect--I use the term advisedly--on employee indiscretions viz-a-vis co-workers; Lawler (1986) and Walton (1972) note that peer pressure can be a potent control mechanism in self-managed work groups.

In their analysis of problem-solving conversations within self-managing teams, Sims and Manz (1982) reached a similar conclusion. They observed infrequent but memorable confrontations between group co-workers and individuals who were seen as lacking in some aspect of performance. One specific confrontation, for example, concerned the absenteeism of a group member (i.e., passivity with respect to OCB conscientiousness or active CB job escape behavior).

Presumably, then, the glare of peer scrutiny in self-managed teams will tend to promote OCB and suppress CB. Certainly, positive citizenship in various incarnations does seem to be important for effective team functioning (c.f., Kolodny and Kiggundu, 1980). This is perhaps because OCBs enhance systemic resiliency by facilitating fluid mutual adjustment among employees (e.g., Organ, 1988; see also discussion of employee cooperation in self-managing teams by Rice, 1955).

SuperLeadership and self-managed teams. The findings of research on self-managed teams are consistent with the idea that the SuperLeader may raise the personal stakes considerably for employees by promoting employee self-leadership and teamwork. Because employees work for themselves and each other, not for the boss, team members themselves are likely to encourage--and if necessary, demand--positive citizenship from their colleagues.

Hackman (1987) makes the connection between SuperLeadership and self-managed teams explicit. He observes that leaders of self-managing teams concern themselves primarily with broad planning and team facilitation rather than direct intervention with team members. Hackman likens this leadership approach to Manz and Sims's (1984) idea of "unleadership" in self-managed teams. The "unleader," according to Manz and Sims (1984), is "the person who, rather than providing subordinates with specific directions, can best help others to find their own way. Thus, we might characterize the 'unleader' as one who leads others to lead themselves" (p. 411). The term <u>SuperLeader</u> follows directly from and replaces this early definition of "unleader."

Kolodny and Kiggundu (1980) paint a picture of SuperLeader-like leadership in their description of the harvesting teams. They found that effective leaders largely acted as process consultants: they facilitated group work while deemphasizing micromanagement of employees. Similarly, in Manz and Sims's (1984) field study (see also Sims & Manz, 1982; Manz & Sims, 1987), leaders who were perceived as effective were those who practiced unleadership or, in revised parlance, SuperLeadership, by encouraging employees to manage their own efforts.

Summary. Effective leaders of self-managed work teams seem primarily to facilitate teamwork and self-leadership. The above discussion associates these actions with social systems that virtually mandate positive citizenship. Of course, it is impossible to attribute positive citizenship to any specific aspect of self-managed group working per se. Moreover, the proposed training intervention is a good deal less sweeping than a switch to self-managed work groups. Nevertheless, the above discussion is consistent with the idea that the SuperLeader's encouragement of self-leadership and cooperative teamwork may enhance OCB and reduce CB.

Research Propositions

This final section distills the above discussion of organizational citizenship behavior and counterproductive behavior into two research propositions. These propositions concern OCB and CB as external criteria for the effectiveness of SuperLeadership training. Table 3-1 tags each group of external dependent variables with the research proposition that corresponds to it, described below.

The first proposition pertains to subordinate perceptions of the extent to which their co-workers who report to the same supervisor display behaviors from the four organizational citizenship dimensions: (a) conscientiousness, (b) altruism, (c) courtesy, and (d) civic virtue. Following a significant multivariate statistical test, subordinate perceptions for each dimension were to be tested separately. Consequently, the following proposition potentially contained four implied subpropositions, one corresponding to each of the above dimensions.

> Proposition 3-1: Subordinate perceptions of organizational citizenship behavior among co-workers will reflect greater gains in the training group than the comparison group.

The second proposition pertains to subordinate perceptions of the extent to which their co-workers who report to the same supervisor display behaviors from four counterproductive behavior dimensions: (a) avoidance of the job, (b) avoidance of the work itself, (c) defiance, and (d) complaining. As before, following a significant multivariate statistical test, subordinate perceptions for each dimension were to be tested separately. Consequently, the following proposition potentially contained four implied subpropositions, one corresponding to each of the above dimensions.

Proposition 3-2: Subordinate perceptions of counterproductive behavior among co-workers will reflect greater decreases in the training group than the comparison group.

Chapter IV: Method

Overview and Site Preparation

Leader behavior was experimentally manipulated through a field experiment using a leadership training program based on SuperLeadership principles inspired by Manz and Sims (1989, 1991). The experiment included both training (experimental) and comparison (control) conditions with data collected longitudinally on two occasions--both before and after training. The purpose of the experiment was to study the effects of leadership training on behavior and perceptions in an organization. Data were collected from a) the focal training participants, b) managers of the participants, and c) direct-report subordinates of the participants. Investigation focused specifically on the effects of the new training program on: a) the internal criteria of participant leader behavior and subordinate self-leadership behavior, and b) the external criterion of subordinate citizenship behavior.

Data were collected between July and November, 1992, at a defense electronics firm located in the mid-Atlantic United States. Permission for the research was granted after extensive discussion in several meetings with management at the site. During these meetings, the research team introduced SuperLeadership and described the training program, the research design, and management's part in facilitating and reinforcing behavioral change. Meetings were also held with human resources personnel, who assisted in locating several supervisors who were interested in receiving training. Subordinates of the prospective training participants were also contacted to solicit their participation in the program.

Under the terms of the research agreement, training was offered without charge and written feedback reports of aggregate-level data were provided to all members of the organization who participated in the training or provided data. In return, the firm agreed to release the participants for training and to allow data collection during regular business hours. To ensure that obligations to all experimental participants were met, the firm also agreed to host the study at least until all participants--both the test and comparison groups--had received training. The firm also provided facilities for the training, logistical support, and reimbursement to the research team for direct costs of the research.

Organizational Context

In an extensive review of empirical research on leadership training, Bass (1990) reports considerable evidence that leadership training can affect leader behavior and performance. Although research suggests that leadership skills can be trained, however, past evaluations also include many examples of leadership training programs that failed to produce change. Consequently, a primary concern was transfer of training from the instructional setting to the organization as a whole. Several characteristics of the organization, the training, and the training participants suggested that transfer was likely.

Training Support Factors at the Outset of Research

One key contributor to training success, top-level management support, was addressed early in the discussion phase of the project. Management showed early support for the project because the training was seen to meet an outstanding training need that had previously been identified by human resources personnel. Management also considered the training's emphasis on self-leadership and teamwork to be consistent with the company's transition from defense-related products toward a more civilian-dominated marketplace. The extensive time demands of training and evaluation were clearly explained from the outset and were accepted by management.

Another facilitator of training was management's recognition of the importance of a positive climate for transfer: early discussion emphasized the importance of ensuring that trainees would receive support from their supervisors for practicing SuperLeadership. To promote support throughout the organization, a two-hour introductory seminar was scheduled in late June, 1992, to acquaint top management with SuperLeadership, to emphasize the potential value of SuperLeadership principles, and to introduce the training program. Later, the actual training included upper-level management and selected professionals within each of the trained divisions <u>in addition</u> to the participants who were the focus of data collection. Including these managers and professionals was intended to maximize upper-level support by introducing SuperLeadership throughout the chain of command in each trained division. Also, a follow-up session was planned to help reinforce the training.

The characteristics of the participants and their subordinates also seemed to contribute to the probable effectiveness of training. The participants and their subordinates were generally professional engineers or skilled crafts supervisors who seemed positively disposed to embrace SuperLeadership's emphasis on self-problem solving and initiative.

<u>Organizational Changes During the Research</u>

Earlier it was mentioned that the host organization was entering a period of transition away from defense-related products towards civilian applications. A major drawback of this period of transition viz-a-viz the training was organizational stress. The transitional nature of the firm's market was discussed in early conversations with management. The consensus that emerged from these early discussions was that the organization was responding effectively to these changes.

Like many defense-related firms, employment at the host organization grew during the Reagan defense buildup of the mid-80s. Subsequent cutbacks in defense spending in the early 90s required a reduction-in-force (RIF) in the company. Because the RIF had occurred nine months before the date of training and because further cuts were not anticipated at the time of our initial discussions with management, the acute stress of job insecurity was originally not considered a serious threat to the project at the outset.

During the research, however, it became increasingly clear that a large-scale reduction in force (RIF) was likely to occur at the host facility. This RIF was a response to a persistent recession, deeper-than-expected cuts in defense-related products and services, and a worsening financial crisis in the parent corporation. Also, subsequent to the training, important bids for new contracts were not successful.

The exact timing of the anticipated RIF was unknown by the research team. To avoid the possibility that the RIF would occur in the midst of data collection, a decision was made to reduce the time lag to ten weeks from the originally-planned three months. The RIF actually did occur <u>immediately</u> after the last wave of data had been collected. Besides shortening the lag for data collection, the expected RIF created a climate that participants later described as hostile to implementing the training. The impact of the RIF on this project will be revisited in the discussion section of this report.

Participants

The basic unit of research was the focal training participant (training and comparison groups), her/his supervising manager, and her/his direct-report subordinates. The focal participants were middle-level managers whose direct-report subordinates were first-line supervisors. Hereafter, the focal middle-level manager training participants (training and comparison groups) will be called <u>trainees</u> or <u>participants</u>. The supervisors and direct-reports of the participants will be called <u>managers</u> and <u>subordinates</u>, respectively. The training participants were informed before training that, for logistical reasons, half of the total sample would be trained immediately and the other half would be trained later. Participants who received immediate training comprised the _training_ group; participants whose training was delayed comprised the no-treatment _comparison_ group for the duration of the study. The unit of analysis is illustrated in Figure 4-1.

The original sample identified by the human resources support team included 75 participants (units) who were available for assignment to either the comparison or training conditions. Associated with these participants were 37 supervising managers and 543 subordinates. However, the actual number of participants in the research was lower than this original sample; also, the sample size varied slightly for different analyses.

There were two minor sources of attrition in this sample. First, one of the training group participants who was the focus of data collection was unable to attend the training. Second, data on one of the focal comparison group participants had to be excluded because the participant left the company shortly after the study had begun. This left a total of 73 participants and 526 subordinates who were potentially available for statistical tests, for an average of 7.21 potential subordinates per participant at the outset.

Additional minor sources of attrition also impacted the amount of data that were available for analysis. For

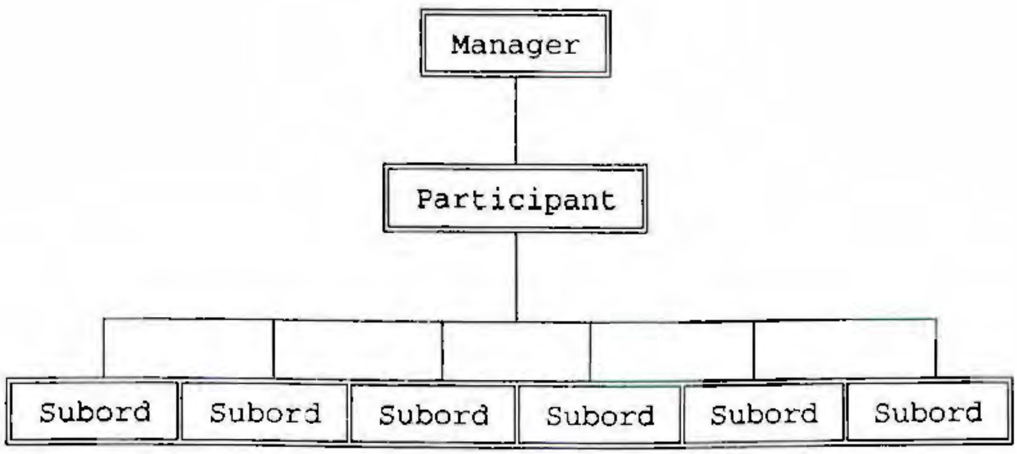

Figure 4-1. Participant-defined unit of analysis.

example, the personnel roster, though relatively current, did not reflect recent scattered transfers and/or attrition of direct-reports in this large organization. Also, a small number of subordinates (fewer than 5%) chose not to retain codes on their questionnaires that identified them and/or their supervisors (the participants). Consequently, their data could not be matched to test the propositions in the longitudinal design chosen for this research. Finally, not all participants, direct-reports, and supervising managers responded to requests for data on both occasions during the study. This time-based attrition further reduced the sample on which analyses were based. Specific sample sizes and response rates will be presented with the results of statistical analysis in the next chapter.

Research Design

Overview

A pre-test/post-test (time 1/time 2) comparison group design was used for the experiment. This relatively parsimonious design was chosen to maximize statistical power for purposes of direct comparison between conditions while minimizing many of the threats to internal validity identified by Cook and Campbell (1979). A coding system was used to tag each response with the identity of the respondent and the target (the participant or participant-defined work group). Although participants and subordinates were free to remove this identifying information, none of the participants and less than five percent of the subordinates chose to remain anonymous.

Selection for Training

From an initial pool of eligible departments identified by the firm, units were allocated randomly into either the comparison (delayed training) or training (immediate training) conditions by department. Thus, to minimize the possibility of contamination through communication between trained and (as yet) untrained participants, all units within a given department were assigned either to the training or comparison condition. This selection protocol can be summarized as follows: a) define departments available for training, b) randomly assign departments to training and comparison conditions, and c) train all participants within departments selected for training. A total of 34 participants with 214 direct-report subordinates were assigned to the training condition; 39 participants with 312 subordinates were assigned to the comparison condition.

Design

Table 4-1 summarizes the overall design of the experiment. Data were collected in three waves: a pre-training wave immediately before the training group

Table 4-1

Overview of Research Design in Training and Comparison Groups

Group	Training Session[b]	Time[a] 1		2[c]	3
Training	I	O	X	O	O
	II	O	X	O	O
Comparison	III	O			O
	IV	O			O

Note. "O" indicates an observation; "X" indicates treatment. [a]Times "1," "2," and "3" reflect observations before training, immediately after training, and after a ten-week lag, respectively. [b]Training sessions "I" and "II" reflect the two separate training sessions required by the large trainee sample. After data collection was complete, sessions "III" and "IV" were offered to the comparison group. [c]At time 2, manipulation checks taken only from the training group.

received training (time "1" in Table 4-1), a post-training wave immediately after the training group had received training (time "2" in Table 4-1), and a delayed post-training wave about ten weeks later (time "3" in Table 4-1). Most measures were taken at times 1 and 3; only the manipulation check quiz (discussed below) was administered at time 2 (immediately after training). In addition, all units provided data both before and after the training group had received training; except for the manipulation check quiz and trainee self-description (both discussed below), the comparison and training groups completed identical measures at the same time. Note from Table 4-1 that the large number of participants required two separate training sessions for the experimental group (and, later, the comparison group). The sessions for the training group will be called <u>Session I</u> and <u>Session II</u>.

<u>Time Lag</u>

Little information was found concerning the appropriate time lag for this experiment. Sims and Szilagyi (1979), however, conducted research on leader reward behavior that seems to bear on this issue. They found that correlations between leader behavior and subordinate performance were greatest in studies with time lags between three and nine months. Based on these findings, Sims and Szilagyi recommended a lag between three and six months for research on leader reward behavior.

Experimental research specifically concerned with leadership training seems to have adopted lags of less than six months. Tharenou and Lyndon (1990), for example, used a two-month lag in their study relating leadership training to subordinate ratings of consideration and initiating structure. In their review of twelve studies on Leader Match training, Fiedler and Mahar (1979) reported lags between leader training and performance ratings that were generally about three months. Intriguingly, Kidder (1990) found relationships between leadership training and subordinate perceptions of organizational climate with a lag of only one month. At the other extreme, Hand, Richards, and Slocum (1973) found that effects from a managerial "human relations" training program were not evident for 18 months.

A three-month time lag was originally chosen for this research. This lag was a judgment call that attempted to balance two central concerns. On one hand, it was important that the training be given adequate time to have a detectable effect on both supervisor and subordinate behavior in the host organization. On the other hand, the lag had to be short enough to minimize the possibility of significant organizational change unrelated to the intervention, such as dramatic attrition through reorganization. Three months seemed to be a reasonable compromise that was broadly consistent with past research on leadership training. However, as discussed earlier, the expected RIF shortened this lag to ten weeks.

<u>Training and Follow-Up</u>

Training was provided in two three-day sessions, Session I (July 21-23, 1992) and Session II (July 29-31, 1992). Two sessions were required because of the size of the training group. Participants from all eligible departments were assigned randomly to the sessions except for one or two instances of non-random assignment to accommodate scheduling conflicts. Session I included a total of 18 trainees who were the focus of data collection and 14 supervising managers or professionals; Session II included 16 focal trainees and 11 supervising managers or professionals. Consequently, a total of 34 focal trainees received training in these two sessions.

As presented to the trainees, the training generally occurred as described in the overview of the training presented in Chapter II. There were slight differences between the two sessions, mainly intended to take advantage of feedback from Session I. Table 4-2 lists the modules presented on each of the three days for both training sessions, with exercise numbers keyed to the

Table 4-2

Training Content of Sessions I and II

Session I (July 21-23, 1992)	
July 21	
IA2	Aircraft Carrier Captain Story (Warm-up, introduction to leadership alternatives)
IB1	Leadership Challenge Case (Strongman, Transactor, Visionary Hero, SuperLeader)
	Lecturette on Leadership Archetypes Supporting Examples on Video
IC1	Verbal Behavior and Feedback Scenarios
IC2	Communicating through Reward and Reprimand Exercise (Transactor)
IIA	Winter Survival Exercise (Teamwork)
IC3	Listening Exercise
July 22	
IA1	Leader Vision Exercise (Warm-up)
ID	Implementing Corporate Vision Exercise (Visionary Hero)
IE	Followership: What is it, how do you get it? (SuperLeadership)
IIB	New Truck Exercise (Teamwork)
IIC	Prisoner Dilemma Exercise (Teamwork)
(Discussion of Vision with Visiting Senior Manager)	
July 23	
IA3	Cigarette Smoking Exercise (Warm-up, Strongman)
IIF	Greenfield Case (SuperLeadership, teamwork)
	Supporting discussion of self-managing teams

(table continues)

IF	Video Case: Working smarter, not harder (SuperLeadership)
	Supporting discussion of SuperLeadership
	Session II (July 29-31)
<u>July 29</u>	
IA2	Aircraft Carrier Captain Story (Warm-up, introduction to leadership alternatives)
IB1	Leadership Challenge Case (Strongman, Transactor, Visionary Hero, SuperLeader)
	Lecturette on Leadership Archetypes (supporting examples on video)
IC2	Communicating through Reward and Reprimand Exercise (Transactor)
IC3	Listening Exercise
<u>July 30</u>	
IA1	Leader Vision Exercise (Warm-up)
ID	Implementing Corporate Vision Exercise (Visionary Hero)
IE	Followership: What is it, how do you get it? (SuperLeadership)
IIC	Prisoner Dilemma Exercise (Teamwork)
IIE	Teamwork Assessment Exercise
<u>July 31</u>	
IA3	Cigarette Smoking Exercise (Warm-up, strongman)
IIF	Greenfield Case (SuperLeadership, teamwork)
	Supporting discussion of self-managing teams

(<u>table continues</u>)

IB2	Assessing Your Leadership Culture
(Discussion with Visiting Senior Manager)	
IF	Video Case: Working smarter, not harder (SuperLeadership) Supporting discussion of SuperLeadership, with examples of several key behaviors

Note. Training module numbers and names keyed to comprehensive module listing reproduced as Appendix 2-1.

numbers in Appendix 2-1. Note that trainees in both sessions were presented with a copy of Manz and Sims (1990) at the end of training.

Training Session I

Day 1. Training began on Day 1 with the Aircraft Carrier Captain Story (Table 4-2, IA2), an "unfinished ending" technique designed to evoke participant interaction. This story stimulated an open-ended discussion of various approaches that could be chosen for dealing with a subordinate who had made a mistake. This discussion dovetailed into the Leadership Challenge Case (Table 4-2, IB1), which concerned leadership approaches to a poor-performing subordinate. The four leadership archetypes were then introduced and illustrated with short videotape scenarios. The Verbal Behavior and Feedback Scenarios video examples and the Communicating Through Reward and Reprimand Exercise (Table 4-2, IC2) were then used to illustrate how leader feedback, appropriately timed, can shape the behavior of subordinates. The Winter Survival Exercise (Table 4-2, IIA) was then used to illustrate how teams working together can outperform individuals working alone. The day concluded with the Listening Exercise (Table 4-2, IC3), in which trainees practiced listening skills.

Day 2. Training began on Day 2 with the Leader Vision Exercise (Table 4-2, IA1), which explored the meaning of the term leader to the trainees. This exercise was used to suggest a range of leader behaviors and to challenge the conventional view of leaders as Strongmen and Visionary Heros. Through the Implementing Corporate Vision Exercise (Table 4-2, ID), trainees developed vision statements for the host organization and discussed how an overall direction for the firm could be charted and pursued. The Followership (Table 4-2, IE) exercise presented trainees with an organization that suffers from a lack of employee initiative and elicited suggestions for promoting self-leadership. The Prisoner Dilemma Exercise (Table 4-2, IIC) and the New Truck Exercise (Table 4-2, IIB) were used to illustrate the advantages of group cooperation and to present techniques for working through disputes to encourage teamwork. At the end of Day 2, the Divisions Manager of the host organization visited the class, reviewed the vision statements prepared by the group earlier in the day, presented his own vision of the firm's future, and interacted with the participants.

Day 3. The Cigarette Smoking Exercise (Table 4-2, IA3) was used to illustrate some of the problems with relying on command-and-control, Strongman-oriented leadership. The Greenfield Case (Table 4-2, IIF) was then presented as a lead-in to an extensive discussion of employee team self-management and appropriate leader behavior in a self-managing environment. A videotape, "Teamwork," illustrated techniques for encouraging cooperation within teams. Another video, Working Smarter, Not Harder (Table 4-2, IF), was then used to introduce a discussion of SuperLeadership. Key SuperLeader behaviors were briefly reviewed.

Impressions of Session I. Comments by the participants indicated that they appreciated the pace of training and felt that the exercises were relevant, well-chosen, and well-timed. The Manager of Human Resources for the host organization attended portions of the training and evaluated the class positively. Feedback was solicited from participants, and suggestions centered mainly on improving the manner in which exercises and examples could be targeted specifically to the host organization. Two trainees also suggested greater specificity regarding SuperLeader behavior. Session II was modified slightly to respond to these suggestions.

Training Session II

On Day 1, training proceeded as in Session I with the exception of the Verbal Behavior and Feedback Scenarios and the Winter Survival Exercise, which were dropped. On Day 2, training again followed the general framework of

Session I with two exceptions. First, the Divisions Manager's visit was scheduled for Day 3. Second, the New Truck Exercise was dropped in favor of the newly-developed Teamwork Assessment Exercise (Table 4-2, IIE), an exercise more directed to the host organization. In this exercise, trainees were asked to consider the kinds of teams that were presently in use in the host organization (e.g., concurrent engineering teams, quality improvement teams, hourly employee teams, etc.). Trainees then chose one team application, analyzed its strengths and weaknesses, and discussed how team effectiveness might be improved.

Day 3 followed the pattern established in Session I, with two exceptions. First, on this day the Divisions Manager visited the class, reviewed the mission statements previously written by the participants, made his presentation, and solicited questions. Second, again in response to trainee comments in Session I, a new exercise, Assessing Your Leadership Culture (Table 4-2, IB2) was introduced to focus discussion specifically on leadership in the host organization. In this exercise, trainees were asked to consider the leadership culture at the firm in relation to the firm's present business context. Trainees evaluated the appropriateness of their leadership culture and considered ways in which the present culture or (if appropriate) other approaches to leadership could be strengthened and reinforced. Third, again in response to comments from Session I, key SuperLeader behaviors were described to the class at the end of Day 3. Through role-play, selected behaviors were demonstrated to the class; trainees were also given an opportunity to practice these behaviors. A list of key SuperLeader behaviors was also distributed to the trainees.

Impressions of Session II. Although the dynamics of interaction in this group seemed slightly less enthusiastic than Session I, trainees reported no major criticisms with the content, timing, or delivery of the training. In addition, this training session was evaluated by a professional trainer who was on staff with the host organization. This evaluation was also positive: the delivery and supporting materials for the training were evaluated positively, as was the training content.

Follow-up to the Training

Follow-up sessions were conducted on September 2, 1992. Follow-up consisted of one three-hour morning session and one three-hour afternoon session. Both sessions went as planned, with trainees offering examples of strategies they had used to encourage self-leadership among their subordinates. Problems with implementation were discussed among the trainees, including the conflict between their own ultimate responsibility for project outcomes and their desire to encourage independence among their subordinates. The strategies used by trainees centered primarily on selectively withholding direct advice and turning over projects for subordinates to complete without the trainees' direct intervention.

The trainer generally stayed in the background during much of the discussion. Although he offered advice and encouragement periodically, the trainees were ultimately more familiar with the pressures of their leadership roles and the capabilities of their subordinates. Consequently, trainees were primarily responsible for diagnosing and solving their own implementation problems. A list of key SuperLeader behaviors was again distributed to the trainees during this meeting.

Although the follow-up session was generally successful in eliciting helpful suggestions, attendance was relatively low. Of 59 trainees who attended either Session I or Session II training, only 30--about half--attended the follow-up session. Of the 34 trainees who were the focus of data collection, only 16--again, about half--attended the follow-up. A review of the attendance roster indicated that a greater proportion of Session I trainees attended the follow-up than Session II trainees. Later inquiries revealed that an emergency meeting involving many of the trainees had unexpectedly conflicted with the follow-up session. Unfortunately, at the time of the follow-up, this conflict was not made known to the researchers.

Measures

This section of the report covers the measures used in the experiment. Discussion will consider development of the measures and the procedures used to create and test the final working variables. Two terms--dimension and cluster--will be used while discussing the measures in this chapter and presenting results in Chapter V. The term dimension refers to a tightly-linked group of items intended to be essentially identical in meaning. In essence, dimensions are variables. Dimensions will be defined through exploratory factor analysis later in this chapter. The term cluster refers to a group of dimensions that are conceptually linked, though not identical in meaning. For example, SuperLeader behavior from the LSQII-sub will be measured using a multivariate SuperLeader cluster consisting of four related dimensions: encourages self-reward, encourages teamwork, encourages independent action, and encourages opportunity thought.

Table 4-3 summarizes the dependent variable measures and descriptive measures used for the present experiment, including the name of each measure, its purpose, its source and object of data collection, and the timing of

Table 4-3

Summary of Measures

Name	Purpose	Source of Data	Object of Data	Time[a]
Leadership Strategies Questionnaire II (LSQII-sub)	Internal Criterion	Subordinate	Participant	1,3
Leadership Strategies Questionnaire II (LSQII-train)	Internal Criterion	Participant	Participant	1[b],3
Self-Leadership Questionnaire (SLQ)	Internal Criterion	Subordinate	Subordinates	1,3
Citizenship Behavior Questionnaire (CBQ)	External Criterion	Subordinate	Subordinate Work Group	1,3
Desire for Self-Leadership	Individual-Level Moderator	Subordinate	Subordinate	1,3
Demographics	Description	Subordinate	Subordinate	1,3
Effectiveness	Exploratory	Subordinate	Participant	1,3
	Exploratory	Participant	Participant	1,3
Performance	Exploratory	Manager	Participant	1,3
Job Satisfaction	Exploratory	Subordinate	Subordinate	1,3
Quiz[c]	Manipulation Check	Participant		2[b]

Note. [a]Time of data collection (1 = before training, 2 = immediately after training, 3 = after lag). [b]Administered to trainees in the immediate training group only. [c]Manipulation check not used for further analysis.

its administration. These measures will be detailed below.

Leadership Strategies Questionnaire II, Subordinate Description of Participants (LSQII-sub)

Descriptions of participant leader behavior (training and comparison groups) were collected using the Leadership Strategies Questionnaire II subordinate report (LSQII-sub). Examples of items on the LSQII-sub used in this study are provided in Table 4-4 along with brief descriptions of each a priori leader behavior dimension. The LSQII-sub was an extended version of the Leadership Strategies Questionnaire (LSQ) used most recently by Scully et al. (1992) and Ball et al. (1991).

Antecedents of the LSQ. The LSQ was inspired by Manz and Sims's (1987) earlier Self-Management Leadership Questionnaire (SMLQ). Both the SMLQ and LSQ, however, are rooted in earlier leadership questionnaires. The Scully et al. research team developed the LSQ as a substantial extension of the SMLQ. Besides drafting original questionnaire items for the LSQ, Scully et al. adapted items for the LSQ Strongman, Transactor, and Visionary Hero dimensions from questionnaires used in past leadership research (e.g., Bass, Waldman, Avolio, & Bebb, 1987; Manz & Sims, 1987; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) including the Multifactor Leadership

Table 4-4

Leadership Strategies Questionnaire II (Subordinate Report, LSQII-sub) A Priori Dimensions with Dimension Definitions and Sample Items

Strongman

01.[a] Instruction and Command: Direct instruction or command by the supervisor regarding task performance with little input or self-direction by the subordinate. ("He/she gives me instructions about how to do my job.")

81. Assigned Goals: Direct assignment of goals or performance objectives by the supervisor with little or no direct input from the subordinate. ("He/she establishes my performance goals.")

07. Non-Contingent Reprimand: Reprimand by the supervisor that is largely or wholly unrelated to performance. ("He/she is often displeased with my work for no apparent reason.")

14. Intimidation: Overt or implied threat or coercion of a subordinate by the supervisor. ("He/she can be quite intimidating.")

Transactor

67. Contingent Material Reward: Material reward by the supervisor that is related to subordinate performance. ("If I perform well, he/she will recommend more compensation.")

10. Contingent Personal Reward: Non-material reward by the supervisor such as praise and recognition that is related to subordinate performance. ("He/she gives me special recognition when my work performance is especially good.")

15. Contingent Reprimand: Reprimand by the supervisor that is related to subordinate performance. ("He/she lets me know about it when I perform poorly.")

21. Interactive Goals: Negotiation of goals or performance objectives by the supervisor with direct input from the subordinate. ("He/she works with me to develop my performance goals.")

Visionary Hero

29. Vision: Communication by the supervisor to the subordinate of a guiding vision regarding organizational purpose, destiny, or overarching goals. ("He/she provides a clear vision of where we are going.")

74. Stimulation and Inspiration: Supervisor motivation of the subordinate towards higher levels of achievement or performance. ("He/she inspires me to strive for achievements I would not normally pursue.")

39. Idealism: Expressed, inner-directed dedication by the supervisor to fundamental personal beliefs, ideals, or overarching goals. ("He/she is driven by higher purposes or ideals.")

22. Challenge to the Status Quo: Supervisor behavior that challenges established ideas, routines, and conventions. ("He/she challenges established ways of doing things.")

(table continues)

SuperLeader

Meta-Dimensions

70.[a] Encourages Self-Problem Solving: Supervisor encouragement of problem-solving by the subordinate without supervisory input, approval, or assistance. ("He/she advises me to solve problems when they pop up without always getting his/her stamp of approval.")

35. Encourages Initiative: Supervisor encouragement of spontaneous innovation and assumption of responsibility by the subordinate without supervisory input or approval. ("He/she provides the opportunity for me to take initiative on my own.")

Behavioral Strategies (content)

09. Encourages Self-Observation and Evaluation: Supervisor encouragement of observation and evaluation by the subordinate of her/his own work performance. ("He/she encourages me to judge how well I am performing.")

20. Encourages Self-Reward: Supervisor encouragement of contingent self-reward by the subordinate. ("He/she urges me to reward myself with something I like when I have successfully completed a major task.")

02. Encourages Self-Goal Setting: Supervisor encouragement of self-setting of goals and performance objectives by the subordinate without direct supervisor input. ("He/she urges me to define the goals myself.")

Cognitive Strategies (content)

28. Encourages Finding Natural Rewards: Supervisor encouragement of spontaneous self-job design by the subordinate to find satisfaction from the work itself. ("He/she advises me to find my own favorite ways to get work done.")

11. Encourages Opportunity Thought: Supervisor encouragement of an opportunity-oriented rather than obstacle-oriented response to adversity by the subordinate. ("He/she advises me to look for the opportunities contained in problems I face.")

16. Encourages Efficacy Expectations: Supervisor encouragement of confidence by the subordinate in her/his own performance or potential for performance. ("He/she encourages me to think I can do very well in my work.")

Teamwork (context)

61. Encourages Teamwork: Supervisor encouragement of cooperation and coordinated action among subordinates. ("He/she encourages me to work together with other managers/supervisors who report to him/her.")

Note. [a]Item numbers keyed to Section II of the subordinate questionnaire packet reproduced as Appendix 4-2.

Questionnaire (Bass, 1985) and transformational and Transactor leadership scales by Podsakoff et al. (1990). Recent applications of the LSQ by Scully et al. and Ball et al. (1991) will now be discussed in greater detail.

<u>The Scully et al. (1992) and Ball et al. (1991) LSQ applications</u>. In their study of CEO leader behavior, Scully et al. used their LSQ to measure the extent to which leaders engaged in behaviors associated with the Manz and Sims (1991) archetypes. Responses were registered on Likert-type scales with response categories of 1 ("Definitely Not True"), 2 ("Not True"), 3 ("Uncertain"), 4 ("True"), and 5 ("Definitely True"). As part of their research, Scully et al. conducted a factor analysis based on LSQ descriptions of CEOs from 259 individuals in 56 top-management teams. Analysis revealed a 14-factor solution that generally conformed to a priori expectations. This finding provides support that the LSQ captured a range of archetypical leader behaviors across dimensions contained in the Manz and Sims (1991) typology.

The Scully et al. LSQ was intended to provide approximately equal coverage of the leadership archetypes proposed by Manz and Sims; SuperLeader behaviors were not emphasized in the questionnaire. The present research, however, adopts SuperLeadership as its primary focus. Consequently, the LSQ was modified to provide more complete coverage of SuperLeader behaviors while retaining dimensions that were descriptive of the other three archetypes as well. For the present study, the midpoint of the Scully et al. response scale was also changed from uncertain to neither true nor untrue. Modifications were undertaken in several stages to produce the revised LSQ used in the present research.

Ball et al. (1991) also used a variation on the LSQ in their study of punishment incidents. They were not able to confirm the specific dimensionality of their variation of the LSQ through factor analysis because of inadequate sample size. However, Ball et al. used alpha analysis to confirm the reliability of their dimensions, which were generally consistent with the Manz and Sims (1991) typology.

Extending the LSQ to the LSQII-sub. This study expanded on the LSQ of Scully et al. (1992) and Ball et al. (1991) in two stages. First, a pool of items representing the non-SuperLeader archetypes was selected by retaining the strongest-loading items from Scully et al. for the non-SuperLeader dimensions. Second, items were retained or added to more fully extend the SuperLeader dimensions. Although some items were drafted specifically for the LSQII-sub, many were adapted from a variety of published and unpublished sources including

Ball et al. (1991), Scully et al. (1992), Manz (1992), Manz and Sims (1991b), internal drafts of self-leadership questionnaires, and the personal notes and working papers of Dr. Charles C. Manz and Dr. Henry P. Sims, Jr. To maximize continuity between the LSQ and the LSQII-sub, preference was given to Scully et al. items whenever possible. These items were also preferred because the Scully et al. study was the best empirical analysis to date. A minimum of four items were selected for dimensions that had previously demonstrated reliability. Other, newer dimensions frequently contained five or six items.

The content of SuperLeadership was represented by items that captured the self-leadership strategies. These items were almost entirely adapted from published sources (e.g., Manz, 1992; Scully et al., 1992), working papers, and notes. Examples of these items are listed in the SuperLeader section of Table 4-4. The context of SuperLeadership was represented by items that tapped leader encouragement of teamwork. Items in the teamwork dimension were all drafted specifically for this questionnaire because of the emphasis on teams as part of the training. A complete listing of items on the LSQII-sub subordinate report, categorized by a priori dimension, is provided in Appendix 4-1. This appendix also includes a table that lists the origins of all items on the LSQII. These items appeared in Section II of the subordinate questionnaire packet, which is reproduced as Appendix 4-2.

Forming the final working dimensions. The final set of working dimensions was derived using principal components analysis with varimax rotation. Scales were constructed by unit-weighting the items that clustered in the resulting factors. These scales were then tested for internal consistency reliability and interrater consensus within the participant-defined units.

There are multiple and potentially conflicting guidelines for determining when sample size is sufficient for factor analysis. Alliger (1991) notes several proposed guidelines including a) recommended ratios of the number of respondents to the number of questionnaire items, and b) recommended sample sizes of 150 to 300 or more cases depending on the size and number of loadings on expected factors (e.g., Guadagnoli & Velicer, 1988). Alliger (1991) concludes that sample sizes approaching 300 are desirable in many applications of exploratory factor analysis.

The number of subordinate questionnaires available for factor analysis exceeded 300 both at time 1 (n = 404) and time 2 (n = 320). Consequently, the present sample seems acceptably large according to the above sample size-based criteria. However, according to respondent/item ratio criteria, the large number of items (96) in the LSQII produced ratios of only 3:1 or 4:1 if the time 1 or time 2 data were considered alone. Recognizing that larger samples will generally produce more stable factor structures, a decision was made to combine the time 1 and time 2 data for factor analysis. Consequently, the factor analyses reported below that are based on subordinate data include approximately 700 responses. The length of the questionnaire and the ten-week lag between subordinate responses were thought to mitigate a minor technical violation of the assumption of response independence. This procedure resulted in an interpretable, meaningful factor structure. Furthermore, when the solution based on the combined sample was compared with solutions derived only from time 1 and time 2 data, the combined solution was quite similar and slightly more interpretable.

An iterative, judgmental process was then used to form the final dimensions. First, an unconstrained factor analysis was run to provide a scree plot and a basis for rough application of the eigenvalue-greater-than-one rule. After visually inspecting the result, constraints were placed on the number of factors to produce successively more parsimonious solutions. Once a final factor structure was approximated, items with ancillary factor loadings within .20 of the primary factor loading were examined for possible deletion. These items were deleted when their loss did not compromise the theoretical richness of the resulting solution. The factor analysis was then rerun after these items had been deleted. In practice, the .20 criterion was applied almost universally; artifactual multicollinearity in the resulting solution is minimal. After the final dimensions had been formed, internal consistency was assessed based on the time 1 data. Table 4-5 reproduces the factor names, items, and factor loadings from the final 15-dimension LSQII-sub solution based on the combined time 1 and time 2 sample. Table 4-6 summarizes this factor structure including a priori dimension names, final dimension names, and final dimension descriptions. The item numbers in each final dimension are keyed to the item numbers in Appendix 4-1 and Section II of the subordinate questionnaire reproduced as Appendix 4-2.

Assessing internal consistency and within-unit consensus for the final working dimensions. Internal consistency was assessed for each dimension using Crohnbach's alpha (e.g., Crohnbach, 1951). Table 4-6 presents alpha coefficients (based on time 1 data, n = 389 to 402) for the final scales. Alpha coefficients in the

Table 4-5

Leadership Strategies II (LSQII) Factor Loadings

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
I.	Aversive Behavior															
76.	He/she behaves in a threatening manner.	-.83	-.14	.00	-.10	-.12	-.09	-.11	.04	-.05	-.09	.12	-.07	.06	-.03	-.11
57.	He/she tries to influence me through threat and intimidation.	-.80	-.11	-.06	-.16	-.14	-.09	-.12	.03	.02	-.06	.10	-.12	.09	-.02	-.06
36.	I feel intimidated by his/her behavior.	-.80	-.15	.01	-.07	-.16	-.10	-.10	.06	-.12	-.08	.11	-.08	.05	-.01	-.12
14.	He/she can be quite intimidating.	-.72	-.19	.12	.01	-.13	-.07	-.02	.07	-.03	.01	.18	-.02	.05	-.04	-.13
51.	He/she is often critical of my work, even when I perform well.	-.69	.00	-.06	-.16	-.13	-.16	-.15	.04	-.08	-.21	.17	.04	.03	-.07	.07
30.	I frequently am reprimanded by him/her without knowing why.	-.69	.06	-.06	-.10	-.13	-.22	-.16	.00	-.15	-.09	.11	-.09	.07	-.12	.19
07.	He/she is often displeased with my work for no apparent reason.	-.57	-.09	-.09	-.21	-.20	-.17	-.17	.03	-.14	-.18	.11	.05	.02	-.10	.19
II.	Encourages Self-Reward															
27.	He/she encourages me to treat myself to something I enjoy when I do a task especially well.	.08	.83	.15	.05	.07	.07	.18	.08	.13	.04	.01	.05	.09	.06	.00
20.	He/she urges me to reward myself with something I like when I have successfully completed a major task.	.07	.82	.16	.05	.14	.08	.12	.08	.17	.06	.01	.03	.02	.01	-.03
62.	He/she urges me to reward myself for doing a good job.	.13	.77	.11	.13	.11	.15	.18	.06	.08	.17	.06	.11	.10	.08	.04
42.	He/she encourages me to give myself a pat on the back when I meet a new challenge.	.11	.60	.08	.12	.16	.15	.17	.04	.10	.40	.03	.17	.11	.13	.05
48.	He/she encourages me to take time to do work tasks that I like to do.	.16	.60	.17	.07	.10	.20	.09	.04	.10	.15	.02	.09	.07	.31	.14
86.	He/she urges me to do tasks at work that make me feel good about myself.	.21	.59	.13	.11	.13	.31	.14	.08	.08	.14	.03	.15	.06	.28	.11
III.	Challenge to the Status Quo															
64.	He/she isn't afraid to "buck the system" if he/she thinks it is necessary.	.04	.12	.81	.09	.11	.13	.11	-.01	.16	.08	.07	.13	.09	.05	.03
44.	He/she is a non-traditional type who "shakes up the system" when necessary.	-.15	.10	.80	.10	.04	.08	.04	.01	.08	.04	.08	.10	.01	.04	.04

(table continues)

#[a]	Factor Name / Item Content	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
								Factor Loadings								
93.	He/she isn't bound by tradition when it comes to getting things done.	.08	.14	.78	.11	.11	.16	.10	-.00	.17	.07	.04	.18	.06	.08	.01
85.	He/she is not afraid to "break the mold" to find different ways of doing things.	.12	.14	.76	.11	.08	.15	.11	.01	.21	.11	.04	.15	.08	.09	.06
22.	He/she challenges established ways of doing things.	-.01	.14	.76	.11	.07	.05	.11	.08	.04	.06	.05	.08	.10	.09	-.01
IV.	Encourages Teamwork															
50.	He/she advises me to work together with other managers/-supervisors who report to him/her as a team.	.13	.09	.14	.84	.12	.20	.10	.07	.12	.11	.05	.09	.06	.03	.03
61.	He/she encourages me to work together with other managers/-supervisors who report to him/her.	.10	.12	.15	.83	.13	.22	.09	.09	.08	.14	.09	.06	.03	.10	.03
92.	He/she urges me to work as a team with other managers/-supervisors who report to him/her.	.12	.14	.12	.80	.17	.24	.10	.09	.11	.12	.06	.05	.03	.11	.04
40.	He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her.	.12	.15	.13	.75	.13	.17	.15	.08	.11	.06	.03	.11	.08	.19	-.07
18.	He/she wants teamwork between me and other managers/-supervisors who report to him/her.	.18	-.05	.07	.67	.17	.15	.09	.08	.12	.13	.09	.18	.09	.00	.09
V.	Participative Goal-Setting															
91.	He/she and I work together to decide what my performance goals should be.	.26	.09	.08	.12	.79	.20	.17	.10	.08	.16	.02	.09	.10	-.02	.06
43.	He/she and I sit down together and reach agreement on my performance goals.	.22	.08	.09	.17	.78	.08	.13	.11	.11	.15	.01	.09	.04	.08	.07
83.	He/she and I reach a mutual understanding regarding the goals for my work.	.30	.11	.08	.18	.74	.15	.16	.07	.12	.15	.03	.09	.03	.00	.06
21.	He/she works with me to develop my performance goals.	.12	.20	.14	.17	.72	.12	.13	.12	.15	.10	-.00	.08	.05	.17	-.02
46.	He/she advises me to set goals for my own performance.	.14	.24	.14	.15	.53	.28	.16	.01	.13	.11	.13	.16	.09	.33	-.05
25.	He/she actively encourages me to set goals for myself.	.19	.27	.20	.18	.48	.25	.10	-.04	.18	.12	.13	.11	.05	.37	-.06
VI.	Independent Action															
96.	He/she encourages me to search for solutions to my problems on the job without his/her supervision.	.20	.19	.13	.24	.15	.77	.12	.02	.13	.11	.05	-.00	.00	.07	.03
70.	He/she encourages me to find solutions to my problems at work without his/her direct input.	.11	.13	.12	.22	.09	.77	.05	-.01	.13	.05	.04	.02	-.03	.03	.06

(*table continues*)

#[a]	Factor Name / Item Content	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
87.	He/she advises me to solve problems when they pop up without always getting his/her stamp of approval.	.29	.11	.15	.25	.21	.72	.09	-.05	.11	.09	-.00	.01	-.01	.07	-.00
75.	He/she urges me to assume responsibilities on my own.	.20	.17	.16	.21	.21	.61	.14	.03	.14	.10	.04	.10	.06	.22	.04
88.	He/she advises me to make improvements in how I do my work on my own initiative without being told to do so.	.13	.20	.16	.23	.15	.57	.15	.10	.13	.14	.07	.13	.08	.22	.04
VII.	Contingent Material Reward															
03.	He/she will recommend that I am compensated well if I perform well.	.21	.21	.13	.11	.09	.12	.79	.03	.14	.13	.03	.11	.02	.09	-.02
26.	He/she will recommend that I am compensated more if I perform well.	.19	.29	.14	.14	.18	.12	.78	.04	.10	.15	.02	.08	.02	.08	.03
67.	If I perform well, he/she will recommend more compensation.	.18	.24	.10	.15	.17	.09	.77	-.01	.12	.23	.01	.08	.03	.10	.09
47.	His/her recommendations regarding my compensation depend on my performance.	.16	.09	.16	.12	.21	.12	.70	.06	.04	.18	.05	.07	.03	.06	.04
VIII.	Assigned Goals															
81.	He/she establishes my performance goals.	-.02	.04	-.12	.08	.08	.02	.03	.88	.07	.02	.10	.05	.06	.03	.08
90.	He/she sets the goals for my performance.	-.05	.06	-.02	.06	.07	.08	.03	.87	.00	.05	.09	.04	.07	.02	.05
41.	He/she establishes the goals for my work.	-.05	.08	.03	.11	.10	.00	.03	.78	.05	.07	.06	.03	.21	.00	.01
19.	He/she establishes my goals for me.	-.06	.05	.04	.03	.01	-.06	.02	.75	.04	.03	.02	.06	.24	.03	-.13
IX.	Vision															
49.	He/she provides a clear vision of who and what we are.	.13	.16	.27	.15	.10	.18	.13	.06	.76	.10	.06	.16	.09	.07	.03
29.	He/she provides a clear vision of where we are going.	.17	.20	.17	.10	.20	.17	.09	.07	.74	.11	.05	.14	.12	.12	.06
69.	Because of him/her, I have a clear vision of our organization.	.12	.19	.25	.15	.16	.18	.08	.09	.73	.08	.07	.14	.10	.07	.14
05.	He/she provides his/her vision of our organization to me.	.07	.15	.16	.23	.14	.12	.14	.04	.62	.19	.09	.21	.03	.15	-.06
X.	Contingent Personal Reward															
72.	When I do a job well, he/she tells me about it.	.20	.20	.12	.25	.23	.14	.22	.11	.16	.72	.09	.11	.03	.09	-.01
53.	He/she gives me positive feedback when I perform well.	.21	.20	.14	.18	.23	.19	.24	.06	.12	.72	.11	.08	.03	.10	.03

(table continues)

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
32.	He/she commends me when I do a better-than-average job.	.22	.24	.11	.22	.22	.14	.24	.08	.15	.70	.09	.11	.05	.11	.07
10.	He/she gives me special recognition when my work performance is especially good.	.19	.26	.18	.12	.16	.07	.32	.05	.17	.60	.01	.09	.09	.19	.07
XI.	Contingent Reprimand															
15.	He/she lets me know about it when I perform poorly.	-.06	-.03	.12	.07	.06	.00	.03	.04	.06	.07	.75	.09	.10	.08	.08
77.	He/she reprimands me when my performance is not up to par.	-.30	.03	.01	-.02	.01	.13	.03	.06	.02	-.05	.75	.03	.07	-.07	-.08
58.	When my work is not up to par, he/she points it out to me.	-.13	.11	.15	.13	.06	.01	.04	.11	.13	.10	.75	.07	.05	.06	.07
37.	He/she reprimands me if my work is below standard.	-.22	.03	-.02	.06	-.02	.01	.00	.09	-.02	.04	.73	-.04	.06	.09	-.01
XII.	Idealism															
39.	He/she is driven by higher purposes or ideals.	.09	.12	.21	.18	.13	.06	.14	.08	.20	.08	.04	.78	.08	.14	.04
79.	He/she has a strong personal dedication to higher purposes or ideals.	.12	.17	.31	.15	.14	.08	.12	.09	.20	.11	.07	.75	.03	.08	.06
60.	He/she strives towards higher purposes or ideals.	.10	.16	.35	.17	.16	.05	.09	.10	.19	.12	.10	.74	.02	.11	.01
XIII.	Instruction and Command															
45.	When it comes to my work, he/she gives me instructions on how to carry it out.	-.07	.15	.09	.07	.04	.05	.04	.19	.11	.03	.05	.03	.77	.06	.12
01.	He/she gives me instructions about how to do my job.	.03	.10	.12	.12	.11	.04	.16	.17	.10	.13	.09	.09	.71	.15	.22
24.	He/she provides commands in regard to my job.	-.22	.11	.13	.02	-.00	-.01	-.05	.25	-.01	.01	.14	-.00	.66	.07	-.33
65.	He/she gives me orders about my work.	-.30	.01	.04	.06	-.02	-.06	-.09	.35	.10	-.04	.19	.01	.59	-.15	-.03
XIV.	Encourages Opportunity Thought															
11.	He/she advises me to look for the opportunities contained in problems I face.	.10	.25	.19	.18	.17	.20	.12	.05	.15	.16	.06	.17	.10	.66	-.03
33.	He/she encourages me to view unsuccessful performance as a chance to learn.	.13	.30	.10	.14	.13	.12	.19	-.00	.14	.13	.13	.10	.08	.57	.22
54.	He/she urges me to think of problems at work as opportunities rather than obstacles.	.13	.23	.21	.23	.17	.28	.12	.09	.19	.18	.12	.13	.03	.54	.01

Factor Loadings

(table continues)

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
XV.	Stimulation and Inspiration															
34.	He/she inspires me to get a lot more done than I could have if he/she were not around.	.11	.39	.22	.15	.16	.17	.14	.04	.16	.11	.15	.09	.19	.12	.48
12.	Because of him/her, I do more than I expected I could do.	.09	.26	.27	.13	.14	.21	.14	.03	.29	.16	.07	.14	.17	.23	.47
	Eigenvalues	22.0	6.07	3.15	2.81	2.34	2.02	1.76	1.54	1.36	1.31	1.19	1.09	1.03	.82	.79
	Percent Variance	33.3	9.2	4.8	4.3	3.6	3.1	2.7	2.3	2.1	2.0	1.8	1.7	1.6	1.2	1.2

Note. [a]Item numbers keyed to Section II of the subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-6

Final Leadership Strategies Questionnaire (LSQII)

Dimensions, Grouped by Archetype

A Priori Dimension	Final Dimension (Item Numbers)[a]	Description	Alpha (James)
I. Strongman			
Intimidation Non-Contingent Reprimand	Aversive Behavior (76, 57, 36, 14, 51, 30, 7)	Leader behaves in threatening, non-contingent ways	.91[d] (.82)[e] (.86)[f]
Assigned Goals	Assigned Goals (81, 90, 41, 19)	Leader sets goals and communicates expectations with little or no subordinate input	.86 (.85) (.83)
Instruction and Command	Instruction and Command (45, 1, 24, 65)	Leader orders subordinates to do specific tasks and provides explicit instructions for task completion	.73 (.67) (.84)
II. Transactor			
Interactive Goals Self-Goal Setting[b]	Participative Goal-Setting (91, 43, 83, 21, 46, 25)	Leader involves subordinates in the process of setting goals	.90 (.78) (.88)
Contingent Material Reward	Contingent Material Reward (3, 26, 67, 47)	Leader offers financial rewards or perqs based on subordinate performance	.91 (.76) (.74)
Contingent Personal Reward	Contingent Personal Reward (72, 53, 32, 10)	Leader offers praise based on subordinate performance	.92 (.69) (.76)
Contingent Reprimand	Contingent Reprimand (15, 77, 58, 37)	Leader reprimands subordinates based on performance	.81 (.75) (.85)
III. Visionary Hero			
Challenge to the Status Quo	Challenge to the Status Quo (64, 44, 93, 85, 22)	Leader adopts unconventional perspectives and/or finds novel ways of approaching problems	.91 (.76) (.84)
Vision	Vision (49, 29, 69, 5)	Leader traces a vision of the organization that is meaningful and engaging for subordinates	.88 (.77) (.80)

(table continues)

A Priori Dimension	Final Dimension (Item Numbers)[a]	Description	Alpha (James)
Idealism	Idealism (39, 79, 60)	Leader is guided by noble or virtuous ideals or principles	.90[d] (.92)[e] (.83)[f]
Stimulation and Inspiration[c]	Stimulation and Inspiration (34, 12)	Leader stimulates high performance and/or inspires subordinates towards achievement through the force of her/his personality	.75 (.60) (.70)
IV. SuperLeader			
Encourages Self-Reward Encourages Finding Natural Rewards	Encourages Self-Reward (27, 20, 62, 42, 48, 86)	Leader encourages subordinates to reward themselves, either directly or by finding ways to work that are personally enjoyable	.89 (.86) (.92)
Encourages Teamwork	Encourages Teamwork (50, 61, 92, 40, 18)	Leader encourages subordinates to work together to provide support and coordinate their activities	.92 (.82) (.87)
Encourages Self-Problem Solving Encourages Initiative	Encourages Independent Action (96, 70, 87, 75, 88)	Leader encourages subordinates to solve problems and take initiative without leader involvement	.88 (.74) (.88)
Encourages Opportunity Thought	Encourages Opportunity Thought (11, 33, 54)	Leader encourages subordinates to view problems at work as opportunities or challenges to be overcome rather than insurmountable obstacles	.79 (.78) (.84)
Encourages Self-Goal Setting	(See "Participative Goal Setting" entry in Section II above)		
Encourages Self-Observation and Evaluation Encourages Efficacy Expectations	(A priori dimensions did not survive exploratory factor analysis)		

Note. [a]Item numbers keyed to Section II of the subordinate questionnaire packet reproduced as Appendix 4-2. [b]Originally a SuperLeadership dimension. [c]Dimension not retained for further analysis related to trainee self-description (LSQII-train). [d]Column 1 coefficient alpha based on subordinate reports (n = 389 to 402). [e]Column 2 coefficient alpha based on trainee self-reports (n = 31 to 32). [f]Column 1 James coefficient (3 or more reporting subordinates, n = 61 units, mean n = 6.23 subordinates per unit).

first column of the table reflect subordinate reports on participants. Alpha coefficients in the second column reflect participant self-appraisals, which will be discussed in the next section.

Note that the first column in Table 4-6 also includes James coefficients (in parentheses; e.g., James, Demaree, & Wolf, 1984) for each of the final dimensions. The James method for assessing interrater consensus was applied to each dimension to support aggregation of individual-level subordinate responses to the participant-defined unit level for analysis. Koslowski and Hattrup (1992) have distinguished between indices of interrater reliability and interrater consensus. Whereas reliability is a correlational statement on "the proportional consistency of variance among raters," consensus "addresses the extent to which raters make essentially the same ratings" (p. 162). The James index of interrater agreement was chosen to demonstrate consensus within the participant-defined units. This consensus, in turn, "provides the justification for aggregation--it substantiates the construct validity of higher level climate means" (Koslowski & Hattrup, 1992, p. 162).

The James index of agreement was applied in the present study because, unlike indices of interrater reliability such as the intraclass correlation coefficient

(ICC; e.g., Shrout & Fliess, 1979), it is unaffected by range restriction. James, Demaree, & Wolf (1984, p. 89) illustrate how range restriction can produce paradoxical results when reliability indices are used. Under conditions of between-unit range restriction, it is possible to have high levels of within-unit agreement (consensus) and yet find low levels of interrater reliability. This effect occurs because consistency indices lack power when variance between targets (in the present experiment, the participant and/or participant-defined work unit) is low.

Because this research had been undertaken in a single host organization, a degree of homogeneity was expected because of selection and climate effects (e.g., George, 1990; Schneider, 1987). Consequently, range restriction was probable and reliability indices that depend on between-unit heterogeneity were likely to be insensitive. Of equal concern is the failure of consistency indices to capture "the shared perceptions phenomenon that is central to the composition of higher levels of the climate construct" which, in the present research, is the participant-defined work unit (Kozlowski & Hattrup, 1992, p. 163). In the present study, the issue of interest was the extent to which subordinate raters agreed in their description of the target.

Final working dimensions. Note from Table 4-6 that the a priori intimidation and non-contingent reprimand dimensions of the Strongman archetype collapsed into a single dimension which was labelled aversive behavior. The final Strongman cluster, then, included three dimensions. Within the Transactor archetype, the a priori interactive goals and self-goal setting (from SuperLeadership) dimensions collapsed into a single participative goal-setting dimension. The final Transactor cluster, then, included four dimensions. All four a priori dimensions in the Visionary Hero cluster were preserved. Within the SuperLeader archetype, the a priori encourages self-reward and encourages finding natural rewards dimensions collapsed into a single dimension defined primarily by self-reward items, labelled encourages self-reward. The a priori encourages self-problem solving and encourages initiative dimensions collapsed into a single dimension labelled encourages independent action. Items in the a priori encourages self-observation and evaluation and encourages efficacy expectations dimensions did not survive the item-culling process. Thus, the final SuperLeader cluster included four dimensions.

As indicated in Table 4-6, all final LSQII-sub dimensions had alpha coefficients of .73 or better, which was judged satisfactory for subsequent statistical analysis. The James coefficients in parentheses in the first column of Table 4-6 (based on time 1 subordinate data) were computed for participant-defined units in which three or more subordinates had provided LSQII-sub data. A James coefficient of .70 or better can be considered evidence of within-group consensus (e.g., George, 1990). Mean James coefficients of .70 of more were obtained for all 15 LSQII-sub behavior dimensions. Of the 61 units to which the James procedure was applied (mean $\underline{n}$ = 6.2 subordinates per unit), between 38 and 59 units produced James coefficients of .70 or greater across the various LSQII-sub dimensions. James coefficients of .80 or better were obtained from between 24 and 58 units, while coefficients of .90 or better were obtained from between 5 and 44 units. Overall, the James analysis demonstrated consensus among subordinates within participant-defined units in their perceptions of their supervisors, the participants.

Leadership Strategies Questionnaire II Participant Self-Report (LSQII-train)

A second form of the LSQII, the LSQII-train, was administered to participants to gauge their perceptions of their own behavior. The LSQII-train was created by writing first-person translations of all items in the

LSQII-sub. Examples of the items on the LSQII-train participant self-report are presented in Table 4-7. A complete listing of LSQII-train items, categorized by a priori dimension, is provided in Appendix 4-3. The item numbers in this Appendix are keyed to the item numbers in Section II of the participant questionnaire packet, reproduced as Appendix 4-4. Note that the same five-point response scale was retained for the LSQII-train. The LSQII-train was administered only to the participants in the training condition at time 1; after the ten-week lag, it was administered to participants in both the training and comparison conditions.

Final working dimensions. Because the limited participant sample precluded independent factor analysis (time 1 training group n = 31; time 2 training and comparison group total n = 60), the scales used in later analysis were constructed based on the factor analysis of subordinate LSQII-sub data. Internal consistencies for the 15 final dimensions were generally satisfactory based on time 1 data (n = 31 to 32), as shown in the last column of Table 4-6. Note from this table that self-report internal consistencies ranges from a high of .92 for idealism to lows of .69 (contingent personal reward) and .67 (instruction and command). The internal consistency of the stimulation and inspiration dimension was judged

Table 4-7

Leadership Strategies Questionnaire II (Participant Self-Report, LSQII-train) A Priori Dimensions with Sample Items

Strongman

01.[a] Instruction and Command: I give my subordinates instructions about how to do their jobs.

81. Assigned Goals: I establish my subordinates' performance goals.

07. Non-Contingent Reprimand: I am often displeased with the work of my subordinates for reasons that are not apparent to them.

14. Intimidation: I can be quite intimidating.

Transactor

67. Contingent Material Reward: If my subordinates perform well, I will recommend more compensation.

10. Contingent Personal Reward: I give my subordinates special recognition when their work performance is especially good.

15. Contingent Reprimand: I let my subordinates know about it when they perform poorly.

21. Interactive Goals: I work with my subordinates to develop their performance goals.

Visionary Hero

29. Vision: I provide a clear vision of where we are going.

74. Stimulation and Inspiration: I inspire my subordinates to strive for achievements they would not normally pursue.

39. Idealism: I am drive by higher purposes or ideals.

22. Challenge to the Status Quo: I challenge established ways of doing thing.

(table continues)

SuperLeader

Meta-Dimensions

70.[a] Encourages Self-Problem Solving: I encourage my subordinates to find solutions to their problems without seeking my direct input.

35. Encourages Initiative: I provide the opportunity for my subordinates to take initiative on their own.

Behavioral Strategies (content)

09. Encourages Self-Observation and Evaluation: I encourage my subordinates to judge how well they are performing.

20. Encourages Self-Reward: I urge my subordinates to reward themselves with something they like when they have successfully completed a major task.

02. Encourages Self-Goal Setting: I urge my subordinates to define the goals themselves.

Cognitive Strategies (content)

28. Encourages Finding Natural Rewards: I advise my subordinates to find their own favorite ways to get work done.

11. Encourages Opportunity Thought: I advise my subordinates to look for the opportunities contained in the problems they face.

16. Encourages Efficacy Expectations: I encourage my subordinates to think they can do very well in their work.

Teamwork (context)

61. Encourages Teamwork: I encourage my subordinates to work together.

Note. [a]Item numbers keyed to Section II of participant questionnaire packet reproduced as Appendix 4-5.

unacceptably low at .60. Consequently, this dimension was dropped from further consideration.

Self-Leadership Questionnaire Subordinate Self-Report (SLQ)

A third form of the LSQII, the Self-Leadership Questionnaire (SLQ), was administered to subordinates of participants to gauge their perceptions of their own self-leadership behavior. The SLQ was based on the a priori SuperLeadership dimensions from the LSQII-sub. To create this questionnaire, items were translated into the first-person and references to "supervisor" were deleted. Examples of the items on the SLQ are presented in Table 4-8. A complete listing of SLQ items, categorized by a priori dimension, is provided in Appendix 4-5. The item numbers in this Appendix are keyed to the item numbers in Section III of the subordinate questionnaire packet, reproduced as Appendix 4-2.

Final working dimensions. The same factor-analytic strategy discussed above with respect to the LSQII was applied to the SLQ. Table 4-9 reproduces the factor names, items, and factor loadings from the final 8-factor SLQ solution based on the combined time 1 and time 2 sample. Table 4-10 summarizes the final SLQ factor structure, including alpha coefficients (based on time 1 data, n = 395 to 403) for the final dimensions. The item

Table 4-8

Self-Leadership Questionnaire (SLQ) A Priori Dimensions with Sample Items

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Meta-Dimensions

30.[a] Self-Problem Solving: "I solve problems when they pop up without always getting my supervisor's stamp of approval."

41. Initiative: "I make improvements in how I do my work on my own initiative without being told to do so."

Behavioral Strategies (content)

02. Self-Observation and Evaluation: "I judge how well I am performing."

12. Self-Reward: "I give myself a pat on the back when I meet a new challenge."

27. Self-Goal Setting: "I define goals for myself."

Cognitive Strategies (content)

04. Finding Natural Rewards: "I seek out activities in my work that I enjoy doing."

06. Opportunity Thought: "I look for the opportunities contained in the problems I face."

24. Efficacy Expectations: "I expect that I will perform well."

Teamwork (context)

26. Teamwork: "I work together with other managers/supervisors who report to my supervisor."

Note. For dimension definitions, see SuperLeader section of Table 4-3 and discussion of self-leadership strategies in Chapter II.

[a]Item numbers keyed to Section III of subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-9

Self-Leadership Questionnaire (SLQ) Factor Loadings

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII	VIII
I.	Independent Action								
40.	I search for solutions to my problems on the job without supervision.	.81	.09	.10	.01	.13	.08	.08	.12
34.	I find solutions to my problems at work without seeking my supervisor's direct input.	.81	.10	.07	.03	.17	.07	.00	.04
30.	I solve problems when they pop up without always getting my supervisor's stamp of approval.	.81	.16	.06	-.04	.08	.08	-.00	.05
35.	I assume responsibilities on my own.	.67	.30	.15	.05	.19	.03	.15	.09
08.	I solve my own problems without being dependent on solutions from above.	.66	.28	.02	-.00	.18	.07	.05	-.06
09.	I take initiatives on my own.	.60	.39	.07	.07	.23	.05	.20	.02
II.	Efficacy Expectations								
16.	I think I am capable of high performance.	.16	.80	.09	.06	.10	.18	.07	.07
07.	I think I can do very well in my work.	.13	.79	.13	-.01	.05	.13	.11	.06
24.	I expect that I will perform well.	.26	.74	.10	.01	.09	.09	.12	.16
33.	I have confidence in my ability to meet challenges at work.	.33	.72	.08	-.00	.11	.05	.21	.04
39.	I am sure that I am capable of overcoming almost any obstacle at work.	.21	.58	.08	.05	-.01	.02	.32	.14
III.	Teamwork								
42.	I work as a team with other managers/supervisors who report to my supervisor.	.09	.08	.92	.04	.03	.05	.09	.06
26.	I work together with other managers/supervisors who report to my supervisor.	.07	.10	.92	.02	.08	.04	.07	.09
05.	I work together with other managers/supervisors who report to my supervisor as a team.	.04	.14	.88	.02	.06	.06	.10	.04
18.	I coordinate my efforts with other managers/supervisors who report to my supervisor.	.16	.09	.84	.01	-.04	.05	.09	.10
IV.	Self-Reward								
21.	I reward myself for doing a good job.	.01	.00	.00	.90	.10	.20	.07	.10
36.	I treat myself to something I enjoy when I do a task especially well.	.06	-.02	-.01	.90	.06	.18	.03	.07
03.	I reward myself with something I like when I have successfully completed a major task.	.07	-.03	.01	.88	.09	.17	.08	.06
12.	I give myself a pat on the back when I meet a new challenge.	-.09	.14	.09	.73	.16	.22	.06	.03

(table continues)

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII	VIII
V.	Self-Goal Setting								
27.	I define goals for myself.	.18	.02	.04	.12	.83	.15	.06	.14
19.	I set goals for my own performance.	.15	.13	.08	.19	.79	.09	.10	.16
10.	I set goals for myself.	.20	.14	.07	.17	.77	.03	.15	.05
01.	I define the goals myself.	.23	.03	-.04	-.03	.72	.13	.01	-.02
VI.	Finding Natural Rewards								
22.	I take time to do work tasks that I like to do.	.06	.03	.07	.24	.05	.80	.08	.10
04.	I seek out activities in my work that I enjoy doing.	-.03	.09	.01	.26	.09	.76	.09	-.08
14.	I find my own favorite ways to get work done.	.11	.18	.02	.08	.18	.68	.00	.03
37.	I do tasks at work that make me feel good about myself.	.04	-.00	.05	.32	.13	.63	.22	.10
31.	I do my work in ways that I enjoy rather than just trying to get it over with.	.24	.19	.08	.04	-.02	.60	.24	.11
VII.	Opportunity Thought								
23.	I think of problems at work as opportunities rather than obstacles.	.09	.13	.12	.03	.05	.10	.83	.11
06.	I look for the opportunities contained in problems I face.	.16	.16	.11	.06	.11	.18	.71	.01
15.	I view unsuccessful performance as a chance to learn.	-.11	.16	.06	.19	.17	.12	.59	.07
32.	I think about how challenges at work can be met, rather than why they cannot.	.26	.34	.10	-.04	-.01	.11	.55	.17
VIII.	Self-Observation								
20.	I try to keep track of how well I'm doing while I work.	.05	.18	.15	.20	.10	.07	.18	.80
28.	I keep track of my progress on tasks I'm working on.	.14	.21	.14	.08	.21	.11	.13	.79
	Eigenvalues	9.10	3.97	2.95	2.21	1.67	1.50	1.23	1.02
	Percent Variance	26.8	11.7	8.7	6.5	4.9	4.4	3.6	3.0

Note. [a]Item numbers keyed to Section III of subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-10

Final Self-Leadership Questionnaire (SLQ) Dimensions

A Priori Dimension	Final Dimension (Item Numbers)[a]	Description	Alpha[b] (James[c])
Self-Problem Solving Initiative	Independent Action (40, 34, 30, 35, 8, 9)	Subordinate solves problems and takes initiative without leader intervention	.88 (.96)
Efficacy	Efficacy (16, 7, 24, 33, 39)	Subordinate is confident in her/his ability to perform tasks required on the job	.83 (.96)
Teamwork	Teamwork (42, 26, 5, 18)	Subordinate works together with her/his colleagues to provide support and coordinate activities	.93 (.90)
Self-Reward	Self-Reward (21, 36, 3, 12)	Subordinate rewards her/himself for effective performance on the job	.91 (.82)
Self-Goal Setting	Self-Goal Setting (27, 19, 10, 1)	Subordinate sets her/his own goals for task accomplishment and work performance	.84 (.89)
Natural Rewards	Natural Rewards (22, 4, 14, 37, 31)	Subordinate finds ways to get work done in ways that are personally enjoyable or meaningful	.78 (.90)
Opportunity Thought	Opportunity Thought (23, 6, 15, 32)	Subordinate views problems at work as opportunities or challenges to be overcome rather than insurmountable obstacles	.69 (.91)
Self-Observation and Evaluation	Self-Observation and Evaluation (20, 28)	Subordinate monitors and evaluates her/his own performance on the job	.73 (.87)

Note. [a]Item numbers keyed to Section III of the subordinate questionnaire packet reproduced as Appendix 4-2. [b](n = 395 to 403). [c](3 or more reporting subordinates, n = 61 units, mean n = 6.23 subordinates per unit).

numbers in each final factor are keyed to the item numbers in Appendices 4-2 and 4-5.

As with the LSQII factor analysis, the a priori self-problem solving and initiative dimensions collapsed into a single dimension, which was labelled independent action. Unlike the previous factor structure, the remaining self-leadership dimensions retained their a priori identities. Alpha coefficients for the self-leadership scales were generally satisfactory, with coefficients in the .80s or .90s. The opportunity thought scale had the lowest alpha at .69. Because of its a priori theoretical interest, this scale was also retained for statistical analysis. Mean James coefficients of .82 or better were obtained for all eight SLQ behavior dimensions. Of the 61 units to which the James procedure was applied, between 53 and 61 produced James coefficients of .70 or greater across the various SLQ dimensions. James coefficients of .80 or better were obtained from between 47 and 60 units, while coefficients of .90 or better were obtained from between 24 and 58 units.

Citizenship Behavior Questionnaire, Subordinate Report on Participant-Defined Work Units (CBQ)

Subordinate perceptions of organizational citizenship behavior (OCB) and counterproductive behavior (CB) in their participant-defined work groups were measured by a Citizenship Behavior Questionnaire (CBQ).

Developing the CBQ. The measure chosen for this research was a variation on a citizenship behavior questionnaire by Ball et al. (1991), which the authors successfully used to demonstrate relationships between supervisor punishment incidents and subordinate citizenship. OCB items for the measure were based on an earlier five-factor OCB measure by Podsakoff, MacKenzie, Moorman, and Fetter (1990), which was validated in a large-scale field study. Podsakoff et al. found that internal consistency reliabilities for four of the five scales exceeded .80 (conscientiousness, sportsmanship, courtesy, and altruism); the reliability of the civic virtue dimension reached .70 (total sample n = 988; n used to compute reliability coefficients was not reported). Confirmatory factor analysis indicated a strong overall fit between employee responses to this questionnaire and Organ's (1988) a priori five-factor model.

Ball et al. (1991) found reliabilities of .82 for the conscientiousness (n = 90) and altruism (n = 88) dimensions; the reliabilities for courtesy (n = 90) and civic virtue (n = 88) were .70 and .55, respectively (G. Ball, personal communication, May 8, 1992). The low reliability of the civic virtue dimension may be related to the work context studied by Ball et al. (1991): the targets of the OCB measure were relatively low-level employees who had few opportunities for involvement in civic affairs within the organization (G. Ball, personal communication, May 8, 1992). The present study permitted additional exploration of all four dimensions among higher-level employees who were likely to have greater opportunities for civic involvement.

CB items in the Ball et al. measure were based on the cumulative work of several unpublished studies reported in Fisher and Locke (1991). These preliminary studies eventuated in a CB measure with six behavioral dimensions. As discussed in Chapter 3, items from four of these dimensions were later chosen for use by Ball et al. (1991). Fisher and Locke reported internal reliabilities for three of these four dimensions, _job avoidance_, _work avoidance_, and _defiance_, of .77, .76, and .65, respectively. .

Both Fisher and Locke (1992) and Ball et al. (1991) also explored a fourth dimension, _aggression_. Fisher and Locke reported that the reliability of this dimension could not be calculated because of severe range restriction on many of the items. Perhaps reflecting the strong wording of the _aggression_ items, Ball et al. also encountered range restriction and positive skew (G. Ball, personal communication, May 8, 1992). Because of the wording of the items, past psychometric problems, and the time constraints of data collection, the Fisher and Locke aggression dimension was not included in the present research.

The Ball et al. (1991) CB measure also included the OCB sportsmanship scale from Podsakoff et al. (1990), which Ball et al. renamed complaining. Ball et al. (G. Ball, personal communication, May 8, 1992) reported reliabilities for the four CB scales used in the present study of .71 for job avoidance, .87 for work avoidance, .77 for defiance, and .85 for complaining (all n = 90). Ball et al. were unable to confirm the specific dimensionality of their CB and OCB items because of inadequate sample size. However, they were able to use second-order factor analysis to demonstrate that OCB and CB items loaded on separate meta-dimensions.

Ball et al. originally administered their CBQ to supervisors in order to describe the citizenship of individual subordinates. In the present study, however, the questionnaire were modified so that subordinates described the citizenship behavior of their colleagues who report to the same supervisor as a group, not as individuals. The present approach differs from past research on OCB, which has generally relied on supervisor ratings of the OCB of individual subordinates (Moorman, 1991; Organ, 1988). While novel, the present focus on citizenship assessment by subordinates is indicated by the nature of citizenship behavior: almost by definition, citizenship behavior is not likely to come to the attention of supervisors. Furthermore, collecting CBQ data from multiple subordinates rather than a single supervisor provides several sources of convergent information.

In addition to the OCB and CB items, appropriate translations of teamwork items from the LSQII were also added to the citizenship measure for this study. This permitted an assessment of teamwork at the group level. Items in this dimension paralleled the construction of teamwork items on the other measures. However, in this case the referent was the teamwork behavior of subordinate colleagues rather than encouragement of teamwork by the training participants (LSQII-sub, LSQII-train) or teamwork behavior by the subordinate (SLQ). Examples of the items on the CBQ are presented in Table 4-11. A complete listing of CBQ items, categorized by a priori dimension, is provided in Appendix 4-6. The item numbers in this Appendix are keyed to the item numbers in Section I of the subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-11

Citizenship Behavior Questionnaire (CBQ) A Priori Dimensions with Sample Items

Organizational Citizenship Behavior[b]

29.[a] Conscientiousness: "My colleagues obey company rules and regulations even when no one is watching."

19. Altruism: "My colleagues help others who have heavy workloads."

05. Courtesy: "My colleagues are mindful of how their behavior affects other people's jobs."

34. Civic Virtue: "My colleagues attend meetings that are not mandatory, but are considered important."

Counterproductive Behavior[b]

25. Physical Avoidance or Escape from the Job: "My colleagues avoid their jobs by coming in late or leaving early."

13. Avoidance of the Work Itself: "My colleagues try to look busy doing nothing."

03. Defiance, Resistance to Authority: "My colleagues have been deliberately ignoring rules and regulations."

08. Complaining: "My colleagues consume a lot of time complaining about trivial matters."

Teamwork[c]

01. My colleagues work with each other as a team.

Note. [a]Item numbers keyed to Section I of subordinate questionnaire packet reproduced as Appendix 4-2. For dimension descriptions, see discussion of teamwork (Chapter II) and citizenship (Chapter III). [b]Adapted from "'Just' and 'Unjust' Organizational Punishment: Influences on Subordinate Performance and Citizenship Behavior" by G. A. Ball, L. K. Trevino, and H. P. Sims, 1991. Unpublished manuscript. [c]Adapted from LSQII.

Final working dimensions. The same factor-analytic approach used for the LSQII and SLQ was also used for the CBQ. Table 4-12 reproduces the final factor names, items, and factor loadings from the final 7-factor CBQ solution based on the combined time 1 and time 2 sample. Table 4-13 summarizes the final CBQ factor structure, including alpha coefficients (based on time 1 data, n = 379 to 388) for the final scales. The item numbers in each final dimension are keyed to the item numbers in Appendices 4-2 and 4-6.

Among the OCB items, note from Table 4-13 that the a priori teamwork and altruism dimensions collapsed into a single dimension which was labelled interpersonal support. The a priori courtesy dimension retained is identity. The a priori civic virtue dimension broke apart into two separate dimensions reflecting the dual emphasis of the a priori dimension on a) keeping abreast of news and developments in the organization and b) attending meetings that are not required. These dimensions were labelled civic virtue (news) and civic virtue (meetings). The alphas for the courtesy and civic virtue (news) dimensions were somewhat low at .66 and .67, respectively. Because of their a priori theoretical importance, these two scales were retained along with the interpersonal support dimension for subsequent analysis. The alpha for the last

Table 4-12

Citizenship Behavior Questionnaire (CBQ) Factor Loadings

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII
I.	Interpersonal Support							
26.	My colleagues work together as a team.	.80	.20	-.13	.27	.13	-.01	-.05
36.	My colleagues work together.	.78	.20	-.08	.31	.16	-.00	-.04
01.	My colleagues work with each other as a team.	.76	.17	-.10	.27	.19	-.13	-.06
12.	My colleagues help orient new people even though it is not required.	.70	.15	-.21	-.07	.01	.21	-.08
19.	My colleagues willingly help others who have work-related problems.	.68	.27	-.12	.04	.01	.16	-.04
38.	My colleagues help others who have heavy work loads.	.68	.20	-.18	.21	.12	.15	-.10
09.	My colleagues coordinate their efforts with each other.	.67	.12	-.17	.16	.20	.05	-.11
03.	My colleagues have always been ready to lend a helping hand to those around them.	.66	.25	-.05	.25	.05	-.03	.01
31.	My colleagues help others who have been absent.	.64	.22	-.18	.03	.07	.16	-.12
II.	Unreliability							
17.	My colleagues get away from the job by calling in sick when they are not really sick.	-.15	-.76	.17	-.05	-.10	-.02	.04
18.	My colleagues make frequent and/or long trips to the water fountain, vending machines, or restroom to avoid work.	-.27	-.75	.21	-.04	-.10	-.00	.10
28.	My colleagues take frequent or extra long breaks to avoid doing work.	-.26	-.75	.19	-.06	-.06	-.08	.02
25.	My colleagues avoid their jobs by coming in late or leaving early.	-.27	-.73	.14	-.19	-.05	-.08	.02
10.	The attendance of my colleagues has been above the norm.	.22	.58	-.03	.31	.14	.10	.05
29.	My colleagues obey company rules and regulations even when no one is watching.	.16	.52	-.09	.07	.20	.13	-.30
III.	Complaining							
16.	My colleagues focus on what's wrong, rather than the positive side.	-.24	-.14	.70	-.11	-.13	-.13	.14
23.	My colleagues tend to "make mountains out of molehills."	-.30	-.31	.68	-.22	-.07	.01	.05
08.	My colleagues consume a lot of time complaining about trivial matters.	-.20	-.36	.68	-.11	-.07	-.04	.09

(table continues)

#[a]	Factor Name Item Content	I	II	III	IV	V	VI	VII
V.	Courtesy							
05.	My colleagues are mindful of how their behavior affects other people's jobs.	.31	.11	-.26	.73	.01	.11	-.06
14.	My colleagues consider the impact of their actions on co-workers.	.37	.20	-.17	.62	.12	.11	-.13
21.	My colleagues try to avoid creating problems for co-workers.	.39	.26	-.03	.48	.08	.06	-.10
VI.	Civic Virtue (News)							
24.	My colleagues have been reading and keeping up with organization announcements, memos, etc.	.14	.14	-.13	.04	.82	.20	-.03
02.	My colleagues have been keeping abreast of changes in the organization.	.28	.23	-.07	.10	.74	.04	-.10
VII.	Civic Virtue (Meetings)							
34.	My colleagues attend meetings that are not mandatory, but are considered important.	.22	.20	.05	.00	.06	.79	-.10
15.	My colleagues attend functions that are not required, but help the company image.	.00	.02	-.18	.17	.16	.77	-.04
VIII.	Defiance							
30.	My colleagues talk back to their supervisor.	-.09	-.13	-.03	-.11	.04	-.06	.83
20.	My colleagues resist the influence of their supervisor.	-.13	-.02	.30	-.04	-.16	-.07	.69
Eigenvalues		10.1	1.87	1.51	1.19	1.01	.99	.86
Percent Variance		37.5	6.9	5.6	4.4	3.8	3.7	3.2

Note. [a]Item numbers keyed to Section I of the subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-13

Final Citizenship Behavior Questionnaire (CBQ) Dimensions

A Priori Dimension	Final Dimension (Item Numbers)[a]	Description	Alpha[d] (James[e])
I. Organizational Citizenship Behavior (OCB)			
Teamwork Altruism	Interpersonal Support (26, 36, 1, 12, 19, 38, 9, 3, 31)	Work group coordinates action and provides mutual assistance with work-related activities within the group	.91 (.94)
Courtesy	Courtesy (5, 14, 21)	Work group avoids interpersonal conflict by acting in ways that are sensitive to others in the group	.66 (.78)
Civic Virtue	Civic Virtue (News) (24, 2)	Work group keeps abreast of developments in the organization	.67 (.80)
Civic Virtue[b]	Civic Virtue (Meetings) (34, 15)	Work group attends meetings and other functions in the organiza- that are considered important but are not required	.50 (.77)
II. Counterproductive Behavior (CB)			
Job Avoidance Work Avoidance Conscientiousness[c]	Unreliability (17, 18, 28, 25, 10, 29)	Work group avoids work-related responsibilities and/or discharges work-related responsibilities unreliably	.84 (.89)
Complaining	Complaining (16, 23, 8)	Work group habitually complains about work-related policies, practices, and procedures	.74 (.79)
Defiance[b]	Defiance (30, 20)	Work group actively defies management	.46 (.75)

Note. [a]Item numbers keyed to Section I of the subordinate questionnaire packet reproduced as Appendix 4-2. [b]Dimension not retained for further analysis. [c]Originally an OCB dimension; loaded in opposite direction compared with other items in the scale. [d](n = 379 to 388). [e](3 or more reporting subordinates, n = 61 units, mean n = 6.23 subordinates per unit).

OCB dimension, <u>civic virtue (meetings)</u> was an unacceptably low .50. Consequently, it was dropped from further consideration. Mean James coefficients of .80 or better were obtained for the three surviving dimensions in the OCB cluster. Of the 61 units to which the James procedure was applied, between 49 and 61 units produced James coefficients of .70 or greater across the various OCB dimensions. James coefficients of .80 or better were obtained from between 34 and 59 units, while coefficients of .90 or better were obtained from between 13 and 53 units.

Among the CB items, all of which have been developed relatively recently, the a priori <u>job avoidance</u>, <u>work avoidance</u>, and (opposite-loading) <u>conscientiousness</u> (originally an OCB dimension) items collapsed into a single dimension labelled <u>unreliability</u>. The a priori <u>complaining</u> and <u>defiance</u> dimensions retained their identities. Because the alpha of the <u>defiance</u> dimension was an unacceptably low .46, this dimension was dropped from further consideration. Mean James coefficients of .79 or better were obtained for the two surviving CB dimensions. Of the 61 units to which the James procedure was applied, 52 and 57 units produced James coefficients of .70 or greater. James coefficients of .80 or better were obtained from between 38 and 53 units, while coefficients of .90 or better were obtained from 14 and 42 units.

Participant Effectiveness (Subordinate Report and Participant Self-Report)

Participant effectiveness was assessed for exploratory purposes by administering a 4-item measure a) to subordinates as part of their description of participant leader behavior and b) to participants as part of their self-description. This measure had been used successfully in earlier self-management leadership research by Manz and Sims (1987), who reported a reliability coefficient of .92 for the scale. All items from this measure are reproduced in Table 4-14 in both subordinate and participant translations. Item numbers in this table are keyed to the item numbers in Sections II of the subordinate and participant questionnaire packets reproduced as Appendices 4-2 and 4-4, respectively. Note that the effectiveness items were included toward the end of Section II in the LSQII-sub and LSQII-train and used the same five-point response scale.

The subordinate report effectiveness scale had an alpha of .95 in the present study based on time 1 data ($\underline{n}$ = 399) and produced a mean James coefficient of .73. Of the 61 units to which the James procedure was applied, 41 produced James coefficients of .70, 26 were .80 or

Table 4-14

Trainee Effectiveness Items (Subordinate Report and Trainee Self-Report Versions)

Subordinate Report on Trainee (LSQII-sub)[a]
80. His/her performance is very high.
84. He/she is very effective.
89. He/she performs very well.
94. His/her overall effectiveness is excellent.
Trainee Self-Report (LSQII-train)[b]
80. My performance is very high.
84. I am very effective.
89. I perform very well.
94. My overall effectiveness is excellent.

Note. [a]Item numbers keyed to Section II of the subordinate questionnaire packet reproduced as Appendix 4-2. [b]Item numbers keyed to Section II of the trainee questionnaire packet reproduced as Appendix 4-5.

better, and 5 were .90 or better. The participant self-report had an alpha of .87 based on time 1 data (immediate training group only, n = 32).

Participant Performance (Manager Report)

For exploratory purposes, the supervisors of participants completed a short performance questionnaire immediately before training and ten weeks after training. Because participants were assigned to condition by department, the participant(s) reported on by any given manager were either all in the immediate training group or all in the comparison group. The performance questionnaire included translations of several general performance dimensions derived by Goodale & Burke (1975). These performance dimensions were verified by management at the host organization to ensure their applicability to the participants. The previous Goodale & Burke measure had been administered to employees of an airline by Neck (1992), who reported a reliability coefficient of .93 (n = 47; personal communication, April 24, 1992).

The shortened measure used for the present study is reproduced as Appendix 4-7. This measure asked managers to evaluate the participants on nine performance dimensions: a) organizing and planning, b) reaction to problems, c) reliability, d) adaptability, e) productivity, f) quality, g) team orientation, h) delegation, and i) subordinate development. Each dimension was labelled and defined on the form. As presented to the managers, this measure listed the name(s) of participant-subordinates in the boxes to the right of the response scale at the top of the form. Ratings for each subordinate appeared in the corresponding column. These ratings were entered using a five-point frequency scale with response categories of 1 ("Never/Almost Never"), 2 ("Infrequently"), 3 ("Occasionally"), 4 ("Frequently"), and 5 ("Always/Almost Always").

Final working dimensions. Originally, all dimensions on this performance measure were intended to be combined into a single overall performance variable. For exploratory purposes, manager responses from time 1 and time 2 (n = 131 total responses, n = 36 different managers) were combined for factor analysis. Of the 36 responding managers, 17 were managers of participants in the training group while 19 were managers of the control group. Because managers typically provided performance ratings on multiple subordinates, responses were likely to be somewhat correlated. Furthermore, the measure was likely to be contaminated by knowledge of the contents of the training by managers whose departments fell were in the training group. Recall that these managers were also included in the training with their subordinates, the participants who were the focus of data collection. A review of attendance rosters revealed that only two of the 17 training group managers had not received training along with their subordinates.

Despite these problems, three meaningful factors emerged. Table 4-15 reproduces the final dimension names, dimension labels and descriptions, and factor loadings from the final 4-factor solution based on the combined time 1 and time 2 sample. Table 4-16 summarizes the final performance factor structure, including alpha coefficients (based on time 1 manager responses, $\underline{n}$ = 70 to 71 responses, $\underline{n}$ = 36 different managers providing responses) for the final scales. The item labels for each final dimension are keyed to the labels in Appendix 4-7.

The a priori reliability, quality, and productivity items collapsed into a single dimension labelled output effectiveness. This dimension reflected items that dealt specifically with the participants' own work. The a priori delegation, subordinate development, and team orientation items collapsed into an interpersonal effectiveness dimension, reflecting the participant's effectiveness in delegating and promoting autonomy among subordinates. The a priori adaptability and reaction to problems items collapsed into a dimension labelled change effectiveness, which pertained to the participant's

Table 4-15

Trainee Performance Factor Loadings

Factor Name Dimension Description	Factor Loadings I	 II	 III	 IV
I. Interpersonal Effectiveness				
Delegation: Encourages subordinates to work independently; delegates important parts of assignments to subordinates.	.85	.14	.08	.15
Subordinate Development: Develops the skills of subordinates.	.74	.07	.15	.33
Team Orientation: Encourages and facilitates teamwork and cooperation among subordinates.	.73	.20	.39	-.12
II. Output Effectiveness				
Reliability: Performs work conscientiously and dependably.	.28	.83	-.04	.18
Productivity: Provudes a volume of work consistent with established standards.	-.05	.78	.41	-.02
Quality: Performs duties accurately and effectively.	.23	.69	.16	.43
III. Change Effectiveness				
Adaptability: Changes behavior to mee the demands of the situation.	.20	.21	.85	.04
Reaction to Problems: Identifies, analyzes, and acts upon problems in a constructive, responsible manner.	.28	.07	.69	.45
IV. Organizing and Planning Effectiveness				
Organizing and Planning: Sets goals and priorities for maximum efficiency.	.15	.23	.12	.88
Eigenvalues	3.94	1.25	.94	.82
Percent Variance	43.8	13.9	10.5	9.1

Note. Dimension definitions keyed to Appendix 4-8.

Table 4-16

Final Participant Performance Dimensions

A Priori Dimension[a]	Final Dimension	Description	Alpha
Reliability Productivity Quality	Output Effectiveness	Trainee reliably produces an acceptable volume of work that is of acceptable quality	.71
Delegation Subordinate Development Team Orientation	Interpersonal Effectiveness	Trainee effectively utilizes subordinate capabilities by appropriately delegating tasks while preparing subordinates to handle delegated tasks by developing their abilities and facilitating teamwork	.78
Adaptability Reaction to Problems	Change Effectiveness	Trainee effectively accommodates change by appropriately adapting behavior and appropriately identifying and acting upon problems	.70
Organization and Planning	Organizing and Planning Effectiveness	Trainee sets goals and priorities for maximum efficiency	--
(All a priori dimensions)	Overall Effectiveness	Trainee is an effective in terms of her/his personal work performance and her/his leadership of subordinates	.83

Note. [a]A priori variable labels keyed to the dimension labels and descriptions on the performance questionnaire reproduced as Appendix 4-8.

effectiveness in accommodating and responding to change and/or unexpected problems. The a priori _organizing and planning_ item remained as its own factor (single-item alpha could not be calculated). All nine items were also summed to form a fifth dimension, _overall effectiveness_. Because all calculable alphas were .70 or better, all dimensions in this exploratory measure were retained for possible use later on.

Subordinate Job Satisfaction

For exploratory purposes, a job satisfaction measure was adapted in abbreviated form from Hackman and Oldham's (e.g., 1980) Job Diagnostic Survey for administration to subordinates as part of the subordinate questionnaire packet. This measure included a total of 15 items assessing _overall_ job satisfaction (3 items) as well as five facet satisfaction dimensions: a) satisfaction with opportunities for _growth_ on the job (3 items), b) satisfaction with _pay_ (2 items), satisfaction with _job security_ (2 items), satisfaction with _social_ interaction on the job (3 items), and satisfaction with _supervision_ (2 items). Subordinates responded to these items using a five-point scale with response categories of 1 ("Very Dissatisfied"), 2 ("Slightly Dissatisfied"), 3 ("Neutral"), 4 ("Slightly Satisfied"), and 5 ("Very Satisfied"). Examples of items from the abbreviated job satisfaction measure, classified by dimension, appear in Table 4-17. The job satisfaction instrument is reproduced in its entirety, with items classified by dimension, as Appendix 4-8. Item numbers from Table 4-17 and Appendix 4-8 are keyed to the satisfaction items in Section IV of the subordinate questionnaire, reproduced as Appendix 4-2.

Final working dimensions. Exploratory factor analysis based on the combined time 1 and time 2 subordinate sample produced five factors. Table 4-18 reproduces the final dimension names, dimension labels and descriptions, and factor loadings from the final 5-factor solution. Table 4-19 summarizes the final job satisfaction factor structure, including alpha coefficients (based on time 1 data, n = 398 to 403) for the final scales. The item numbers in Tables 4-18 and 4-19 are again keyed to the items in Section IV of Appendix 4-2.

As indicated in Table 4-19, the a priori overall and growth satisfaction dimensions collapsed into a single dimension that was simply labelled overall satisfaction. In retrospect, this result was not particularly surprising given the professional and managerial nature of the jobs held by respondents. The remaining pay, job security, supervisory, and social satisfaction dimensions retained their a priori identities. Because the alpha for social

Table 4-17

Subordinate Job Satisfaction A Priori Dimensions with Sample Items

01.[a]	Overall Job Satisfaction: My job as a whole
02.	Growth Satisfaction: The amount of personal growth and development I get in doing my job
03.	Pay Satisfaction: The amount of pay and fringe benefits I receive
04.	Job Security Satisfaction: The amount of job security I have
05.	Social Satisfaction: The people I talk to and work with on my job
06.	Supervision Satisfaction: The degree of respect and fair treatment I receive from my supervisor

Note. [a]Item numbers keyed to Section IV of subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-18

Subordinate Job Satisfaction Factor Loadings

#[a]	Factor Name / Item Content	I	II	III	IV	V
I.	Overall Satisfaction					
01.	My job as a whole	.90	.14	.12	.15	.10
13.	My job in general	.90	.17	.14	.14	.12
07.	My overall job	.88	.17	.13	.15	.13
08.	The feeling of worthwhile accomplishment I get from doing my job	.77	.05	.12	.11	.17
02.	The amount of personal growth and development I get in doing my job	.75	.08	.10	.22	.08
14.	The amount of challenge in my job	.75	.02	.10	.14	.22
II.	Pay Satisfaction					
09.	The degree to which I am fairly paid for what I contribute to this organization	.15	.94	.09	.14	.08
03.	The amount of pay and fringe benefits I receive	.17	.94	.11	.12	.05
III.	Job Security Satisfaction					
10.	How secure things look for me in the future in this organization	.18	.06	.93	.10	.08
04.	The amount of job security I have	.20	.15	.91	.11	.07
IV.	Supervision Satisfaction					
06.	The degree of respect and fair treatment I receive from my supervisor	.23	.15	.13	.86	.14
12.	The overall quality of the supervision I receive in my work	.30	.13	.09	.85	.13

(table continues)

#[a]	Factor Name Item Content	Factor Loadings I	 II	 III	 IV	 V
V.	Social Satisfaction					
05.	The people I talk to and work with on my job	.19	.03	.09	.07	.82
11.	The chance to get to know other people while on the job	.22	.09	.05	.16	.78
Eigenvalues		6.16	1.67	1.37	1.17	.99
Percent Variance		44.0	12.0	9.8	8.4	7.1

Note. [a]Items keyed to Section IV of the subordinate questionnaire packet reproduced as Appendix 4-2.

Table 4-19

Final Job Satisfaction Dimensions

A Priori Dimension	Final Dimension (Item Numbers)[a]	Description	Alpha[c] (James[d])
Overall Satisfaction Growth Satisfaction	Overall Satisfaction (1, 13, 7, 8, 2, 14)	The work in general is satisfying	.93 (.70)
Pay Satisfaction	Pay Satisfaction (9, 3)	The pay is satisfactory	.94 (.41)
Job Security Satisfaction	Job Security Satisfaction (10, 4)	The job security is satisfactory	.90 (.46)
Supervisory Satisfaction	Supervisory Satisfaction (6, 12)	The supervision provided on the job is satisfactory	.84 (.48)
Social Satisfaction[b]	Social Satisfaction (5, 11)	The social relationships at work are satisfactory	.57 (.74)

Note. [a]Item numbers keyed to Section IV of the subordinate questionnaire packet reproduced as Appendix 4-2. [b]Dimension not retained for further analysis. [c](n = 398 to 403). [d](3 or more reporting subordinates, n = 61, mean n = 6.23 subordinates per unit).

satisfaction was an unacceptably low .57, this dimension was dropped from further consideration. In addition, only the James coefficients of the surviving overall satisfaction dimension (.70) suggested intra-unit agreement. Consequently, all four surviving job satisfaction dimensions were retained for analysis at the individual level rather than the participant-defined unit level.

Subordinate Desire for Self-Leadership (Subordinate Self-Report)

A measure was included in a special subsection at the end of the SLQ to assess the extent to which subordinates desired to engage in key self-leadership behaviors. To construct this desire for self-leadership measure--an individual-level moderator--two questions were created to reflect each of four key self-leadership dimensions: the two self-leadership meta-variables (a) initiative and (b) self-problem solving, (c) the self-goal setting content variable, and (d) the teamwork context variable. Unlike the rest of the subordinate questionnaire, the desire measure included reverse-scored items--one item for each of the four key variables. To answer the questions, respondents were asked to imagine an ideal job situation; all items followed the initial probe "in my ideal job" and were answered using the same five-point response scale. Sample items appear in Table 4-20.

Final working dimensions. Exploratory factor analysis of this questionnaire failed to produce an interpretable factor structure. When a two-factor solution was attempted, the positively- and negatively-worded items loaded on separate factors (with one exception). Consequently, all items in the scale were grouped together to form a single moderator variable. The resulting scale had an alpha coefficient of .64 (n = 402). When positively- and negatively-worded items were broken out for separate reliability analysis, the resulting alpha coefficients were .66 (n = 404) and .62 (n = 404), respectively. Based on these results, all items were retained in the single scale for possible moderator analysis at the individual level. This subordinate-report moderator, with items classified by dimension, is included in Appendix 4-9. The item numbers in this Appendix are keyed to the last portion of Section III of the subordinate questionnaire, which is reproduced as Appendix 4-2.

Subordinate Demographics

A brief demographic questionnaire was administered for descriptive purposes as part of the questionnaire packet completed by subordinates. This measure appears in

Table 4-20

Desire for Self-Leadership Sample Items

Teamwork

43.[a] I would collaborate with other employees at my level to accomplish tasks without involving my supervisor.

Self-Goal Setting

49. I would define goals for myself without my supervisor's intervention.

Self-Problem Solving

44. I would find solutions to my problems at work without consulting my supervisor.

Initiative

50. I would make decisions on my own initiative without involving my supervisor.

Note. [a]All items adjoin the stem "In my ideal job. . . ." Item numbers keyed to Section III of the subordinate trainee questionnaire packet reproduced as Appendix 4-2.

Section V of the subordinate questionnaire packet reproduced in Appendix 4-2.

Manipulation Check

To provide a rough estimate of whether learning had taken place during the training, a brief 12-item quiz was administered to the trainees in both training sessions immediately after training. This quiz, which is reproduced in Appendix 4-10, was structured around the four leadership archetypes which were the core of the training. The quiz included three sections, each of which asked trainees to match the four archetypes with exemplary behaviors.

Analyses

To control the experiment-wise error rate (e.g., Cliff, 1987), multivariate tests of the propositions were conducted using multiple analysis of covariance (MANCOVA) as recommended by O'Brien and Kaiser (1985). Using this approach, pre-training dimension scores were treated as covariates with post-training scores as dependent variables and experimental condition (comparison or training group) as a factor. Each preliminary MANCOVA included all variables within each leadership archetype and citizenship meta-dimension. Significant multivariate results were followed by univariate analyses of covariance (ANCOVAs) for the constituent variables.

After the multivariate and univariate proposition tests and exploratory analyses had been conducted, hierarchical regression was used to perform univariate moderator analysis at the individual level based on the desire for self-leadership moderator questionnaire. This moderator analysis involved regressing each time 2 dimension on four independent variables (in order): a) the corresponding time 1 dimension, b) condition (training or comparison), c) the time 1 desire score, and d) the desire x condition interaction. A significant interaction term would indicate a moderator effect. This individual-level analysis was performed on all dimensions for which individual-level data were available.

Chapter V: Results

This chapter will present the results of the experiment in two major sections. The first section includes descriptive statistics and selected time 1 comparisons between the training and comparison conditions. The second section tests the propositions in Chapters II and III and presents the results of additional exploratory analyses. The third section presents the results of moderator analysis at the individual (subordinate) level and the participant-defined unit (aggregate) level.

The clusters and dimensions included in the questionnaires analyzed for this experiment are summarized in Table 5-1, which will be presented and discussed in the next section. Recall that the LSQII-sub and LSQII-train included four leader behavior clusters at the participant-defined unit level: Strongman (three dimensions), Transactor (four dimensions), Visionary Hero (four dimensions for the LSQII-sub, three dimensions for the LSQII-train), and SuperLeader (four dimensions). These questionnaires also included a unidimensional, unit-level participant effectiveness scale from the perspective either of the training participant (training and comparison group) or subordinate. The SLQ included a unit-level self-leadership behavior cluster (eight dimensions) and an individual-level desire for self-leadership moderator dimension. The CBQ included two unit-level clusters: organizational citizenship behavior (three dimensions) and counterproductive behavior (two dimensions). The subordinate job satisfaction questionnaire was composed of a single individual-level job satisfaction cluster (four dimensions). Finally, the manager performance questionnaire included a unit-level overall performance dimension and a unit-level facet performance cluster consisting of four performance dimensions.

To avoid capitalizing on chance, multivariate statistical comparisons and tests were first conducted on whole clusters. If statistically significant multivariate differences were found, univariate tests of individual dimensions followed. In the tables used to present the results, cluster labels appear at the left margin; individual dimension labels are indented and appear immediately below the corresponding cluster label.

Preliminary Analysis

First, the results of the manipulation check will be reported. Then, this section will present descriptive statistics and time 1 comparisons for the various clusters and dimensions in the experiment.

Manipulation Check

Recall from Chapter IV that a 12-item quiz was administered to the training participants immediately after training. The quiz, structured around the four Manz and Sims (1991) leadership archetypes, included three sections. Each section asked the training participants to match the four archetypes with exemplary behaviors. Out of 12 possible points, participants in Sessions I and II achieved average scores of 10.69 and 11.65, respectively. These results suggested that learning had taken place: participants were able to successfully distinguish the four leadership archetypes, including SuperLeader.

Time 1/Time 2 Descriptive Statistics

Table 5-1 summarizes the cluster and dimension labels along with time 1 and time 2 means, standard deviations, and sample sizes computed at the level used for statistical comparison and analysis (either the participant-defined unit level or the individual level).

Subordinate demographics. Time 1 demographic data for participating subordinates appear in Section I of Table 5-1. Subordinates averaged 40 years in age and had worked in the host organization for an average of 14 years, four of which were spent with their present supervisor. In addition, responding subordinates were predominantly male and generally well-educated, having

Table 5-1

Time 1/Time 2 Dimension Descriptives at the Level of Analysis Used for Proposition Testing

Cluster Dimension	Time 1 Mean (Std Dev) n			Time 2 Mean (Std Dev) n		
I. Subordinate Demographics						
Demographics[a]						
Age	40.0	(10.8)	370			
Years with Host Organization	14.3	(9.51)	368			
Years with Present Supervisor	4.29	(1.34)	376			
II. Leadership Strategies Questionnaire, Trainee Self-Report (LSQII-train)						
Strongman						
Aversive Behavior	2.10	(.61)	31	2.03	(.74)	60
Assigned Goals	3.24	(.60)	31	3.06	(.77)	60
Instruction and Command	2.81	(.57)	31	2.62	(.58)	60
Transactor						
Participative Goals	3.96	(.46)	31	3.99	(.61)	60
Material Reward	4.15	(.51)	31	4.08	(.75)	60
Contingent Personal Reward	4.05	(.40)	31	4.20	(.72)	60
Contingent Reprimand	3.40	(.60)	31	3.40	(.57)	60
Visionary Hero						
Challenge to the Status Quo	3.78	(.52)	31	3.74	(.76)	60
Vision	3.51	(.55)	31	3.64	(.69)	60
Idealism	3.81	(.72)	31	3.71	(.92)	60
SuperLeader						
Self-Reward	3.02	(.59)	31	3.25	(.70)	60
Teamwork	4.34	(.46)	31	4.32	(.82)	60
Independent Action	4.01	(.40)	31	3.94	(.62)	60
Opportunity Thought	3.81	(.60)	31	3.74	(.68)	60
III. Leadership Strategies Questionnaire, Subordinate Report (LSQII-sub)						
Strongman						
Aversive Behavior	1.90	(.52)	72	1.91	(.54)	71
Assigned Goals	3.05	(.42)	72	3.03	(.48)	71
Instruction and Command	2.82	(.45)	72	2.84	(.51)	71
Transactor						
Participative Goals	3.54	(.42)	72	3.62	(.42)	71
Contingent Material Reward	3.27	(.51)	72	3.36	(.53)	71
Contingent Personal Reward	3.47	(.46)	72	3.54	(.47)	71
Contingent Reprimand	2.91	(.43)	72	2.91	(.40)	71
Visionary Hero						
Challenge to the Status Quo	3.05	(.62)	72	3.16	(.58)	71
Vision	3.09	(.50)	72	3.17	(.52)	71
Idealism	3.36	(.47)	72	3.43	(.45)	71
Stimulation and Inspiration	2.76	(.53)	72	2.89	(.50)	71

(table continues)

Cluster Dimension	Time 1 Mean (Std Dev) n	Time 2 Mean (Std Dev) n
SuperLeader		
Self-Reward	2.65 (.35) 72	2.79 (.39) 71
Teamwork	3.75 (.40) 72	3.77 (.39) 71
Independent Action	3.49 (.43) 72	3.53 (.46) 71
Opportunity Thought	3.16 (.45) 72	3.28 (.42) 71
IV. Self-Leadership Questionnaire, Subordinate Report (SLQ)		
Self-Leadership		
Independent Action	4.09 (.39) 72	4.06 (.37) 71
Efficacy	4.19 (.27) 72	4.14 (.28) 71
Teamwork	3.90 (.41) 72	3.97 (.32) 71
Self-Reward	2.98 (.47) 72	3.06 (.47) 71
Self-Goal Setting	3.71 (.37) 72	3.67 (.39) 71
Natural Reward	3.58 (.28) 72	3.55 (.33) 71
Opportunity Thought	3.68 (.26) 72	3.77 (.28) 71
Self-Observation	3.82 (.30) 72	3.81 (.34) 71
V. Citizenship Behavior Questionnaire, Subordinate Report (CBQ)		
Organizational Citizenship Behavior		
Interpersonal Support	3.72 (.34) 72	3.77 (.39) 71
Courtesy	3.50 (.38) 72	3.60 (.37) 71
Civic Virtue (News)	3.71 (.34) 72	3.80 (.33) 71
Counterproductive Behavior		
Unreliability	1.97 (.39) 72	1.96 (.35) 71
Complaining	2.64 (.45) 72	2.53 (.44) 71
VI. Job Satisfaction Questionnaire, Subordinate Report		
Job Satisfaction[a]		
Overall	3.53 (.95) 387	3.60 (.95) 306
Pay	3.09 (1.26) 387	3.22 (1.19) 306
Job Security	2.37 (1.14) 387	2.28 (1.11) 306
Supervision	3.60 (1.15) 387	3.69 (1.03) 306
VII. Trainee Performance/Effectiveness		
Overall Performance (Manager Report)	4.13 (.48) 70	4.26 (.46) 61
Facet Performance (Manager Report)		
Output	4.51 (.47) 70	4.60 (.51) 61
Interpersonal	3.83 (.66) 70	4.05 (.62) 61
Change	4.04 (.67) 70	4.06 (.69) 61
Organizing/Planning	4.04 (.81) 70	4.25 (.75) 61
Trainee Effectiveness (Self-Report)	3.69 (.66) 31	3.69 (.79) 60
Trainee Effectiveness (Subordinate)	3.41 (.58) 72	3.53 (.53) 71
VIII. Moderator		
Desire[a]	3.26 (.48) 390	3.27 (.48) 308

Note. Except where noted, all descriptives at the unit level of analysis.

[a]Descriptives based on unaggregated data.

completed a Bachelors degree with some additional post-college training.

<u>Leadership Strategies Questionnaire (LSQII-train, participant self-report)</u>. Descriptives for the LSQII-train leader behavior clusters are presented in Section II of Table 5-1. Because these data were collected from participants in the comparison and training groups, all descriptives reflect the participant-defined unit level of analysis. Note that the number of participant self-reports differs between time 1 and time 2: to avoid possible contamination, participants in the comparison group did not receive the LSQII-train at time 1. At time 1, of the 34 participants assigned to the training group, 31 (91%) returned usable LSQII-train self-report data. At time 2, of the total 73 participants who received questionnaires, 60 (82%) returned usable data. Within the time 2 sample, 25 (74%) of the 34 trainees and 35 (90%) of the 39 comparison group participants returned usable data. Intercorrelations among LSQII-train leadership dimensions for both time 1 and time 2 are presented in Appendix 5-1. Time 1/time 2 intercorrelations among all unit-level dimensions in the experiment appear in Appendix 5-7.

Leadership Strategies Questionnaire (LSQII-sub), Self-Leadership Questionnaire (SLQ), and Citizenship Behavior Questionnaire (CBQ) (all subordinate report). Subordinate descriptives for the LSQII-sub, SLQ, and CBQ are presented in Sections III, IV, and V of Table 5-1, respectively. Because these data were aggregated to the unit level, descriptives reflect the participant-defined unit level of analysis. Of the 526 subordinates who received questionnaire packets at time 1, between 373 (71%) and 391 (74%) returned usable data on the various LSQII-sub, SLQ, and CBQ dimensions. Within the time 1 sample, between 150 (70%) and 153 (71%) of the 214 subordinates in the training group returned usable data; between 223 (71%) and 238 (76%) of the 312 subordinates in the comparison group returned usable data.

At time 2, between 301 (57%) and 308 (59%) subordinates returned usable data on the various LSQII-sub, SLQ, and CBQ dimensions. Within the time 2 sample, between 116 (54%) and 118 (55%) of the training group subordinates and between 185 (59%) and 190 (61%) of the comparison group subordinates returned usable data. When aggregated to the participant-defined unit level of analysis, 72 (99%) of the 73 participants were represented with usable subordinate data at time 1; at time 2, 71 (97%) participants were represented with usable subordinate data. Time 1/time 2 intercorrelations among LSQII-sub, SLQ, and CBQ dimensions are presented in Appendices 5-2, 5-3, and 5-4, respectively. Time 1/time 2 intercorrelations among all unit-level dimensions in the experiment appear in Appendix 5-7.

Subordinate job satisfaction. Subordinate descriptives for job satisfaction are presented in Section VI of Table 5-1. Because these data were unaggregated, descriptives reflect the individual level of analysis. At time 1, 387 (74%) subordinates returned usable satisfaction data; 306 (58%) returned usable data at time 2. Within the time 1 sample, usable data were returned by 151 (71%) training group and 236 (76%) comparison group subordinates. Within the time 2 sample, usable data were returned by 117 (50%) of the training group and 189 (61%) of the comparison group subordinates. Time 1/time 2 intercorrelations among the individual-level job satisfaction dimensions are presented in Appendix 5-5.

Participant performance/effectiveness (manager performance report, effectiveness self-report, subordinate effectiveness report on participants). Descriptives for manager reports on participant performance, participant self-reports on own effectiveness, and subordinate reports on participant effectiveness appear in Section VII of Table 5-1. Because all of these data were either collected at the participant-defined unit level (manager reports, participant self-reports) or aggregated to the unit level (subordinate reports), descriptives reflect the unit level of analysis. Of the 73 reports requested from managers at time 1, 70 (96%) were returned, including all 34 reports for training group participants and 36 (92%) comparison group. At time 2, 61 (84%) reports were received from managers, including 30 (88%) training group reports and 31 (79%) comparison group reports.

The return rate for participant effectiveness self-reports mirrored the return rate of LSQII-train self-report data. At time 1, 31 (91%) of the trainees returned usable effectiveness self-report data. At time 2, 60 (82%) participants returned usable effectiveness data, including 25 (74%) trainees and 35 (90%) participants in the comparison group reports. Within the time 1 subordinate sample, 153 (71%) from the training group and 237 (76%) from the comparison group provided usable effectiveness data. Within the time 2 sample, 118 (55%) training group and 190 (61%) comparison group subordinates returned usable data. When aggregated to the unit level, 72 (99%) participants were represented with usable subordinate data at time 1; at time 2, 71 (97%) were represented with usable data. Time 1/time 2 intercorrelations among the performance and effectiveness dimensions are presented in Appendix 5-6. Time 1/time 2 intercorrelations among all unit-level dimensions in the experiment appear in Appendix 5-7.

Moderator. Descriptives for the individual-level desire for self-leadership moderator are presented in Section VIII of Table 5-1. At time 1 390 (74%) of the subordinates returned usable desire moderator data, including 152 (71%) from the training group and 238 (76%) from the comparison group. At time 2, 308 (59%) returned usable data, including 118 (55%) from the training group and 190 (61%) from the comparison group.

Time 1 Comparability of Clusters Across Condition

Analysis of covariance (ANCOVA) and multiple analysis of covariance (MANCOVA) were chosen for proposition testing and exploratory statistical analysis in this experiment because of its repeated measures design. Covariate procedures are advantageous because they increase power by controlling for between-condition differences at time 1. To determine whether there were significant pre-existing differences between the training and comparison conditions, analysis of variance (ANOVA) and multiple analysis of variance (MANOVA) were applied to time 1 data before the propositions were tested.

A total of nine MANOVAs were performed to assess pre-existing time 1 differences at the multivariate level.

These MANOVAs covered: a) the Strongman, Transactor, Visionary Hero, and SuperLeader clusters from the LSQII-sub; b) the SLQ self-leadership cluster; c) the CBQ organizational citizenship and counterproductive behavior clusters; d) the subordinate job satisfaction cluster; and e) the multivariate performance cluster based on supervising manager data. Pre-existing differences in leader behavior clusters from the LSQII-train were excluded from this analysis because time 1 self-reports were not solicited from participants in the comparison condition.

Three ANOVAs were performed to assess pre-existing differences at the univariate level. These included the participant effectiveness and the desire for self-leadership dimension data provided by subordinates in the LSQII-sub and SLQ, respectively, and the combined performance dimension provided by managers. Except for the subordinate job satisfaction data, which were not aggregated, all of these analyses were performed at the participant-defined unit level of analysis.

The results of these analyses are shown in Table 5-2. Also presented in the table are the results of post-hoc univariate tests which followed significant multivariate tests. As shown in Section I of the table, pre-existing multivariate differences in leader behavior as perceived

Table 5-2

Time 1 Cluster Comparability by Condition

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
I. Leadership Strategies Questionnaire, Subordinate Report (LSQ-sub)			
Strongman			*F* (3, 68) = .493 (*p* < .689)
Aversive Behavior	1.91 (.40) 39	1.90 (.64) 33	
Assigned Goals	3.08 (.36) 39	3.00 (.49) 33	
Instruction and Command	2.81 (.34) 39	2.84 (.55) 33	
Transactor			*F* (4, 67) = .449 (*p* < .773)
Participative Goals	3.60 (.35) 39	3.49 (.49) 33	
Contingent Material Reward	3.29 (.43) 39	3.25 (.60) 33	
Contingent Personal Reward	3.50 (.42) 39	3.43 (.50) 33	
Contingent Reprimand	2.95 (.36) 39	2.87 (.50) 33	
Visionary Hero			*F* (4, 67) = .219 (*p* < .927)
Challenge to the Status Quo	3.09 (.59) 39	3.01 (.66) 33	
Vision	3.10 (.41) 39	3.07 (.59) 33	
Idealism	3.36 (.43) 39	3.37 (.52) 33	
Stimulation and Inspiration	2.74 (.41) 39	2.78 (.64) 33	
SuperLeader			*F* (4, 67) = 2.41 (*p* < .058)
Self-Reward	2.68 (.26) 39	2.62 (.43) 33	
Teamwork	3.79 (.27) 39	3.70 (.51) 33	
Independent Action	3.61 (.28) 39	3.36 (.54) 33	
Opportunity Thought	3.26 (.36) 39	3.05 (.53) 33	
II. Self-Leadership Questionnaire, Subordinate Report (SLQ)			
Self-Leadership			*F* (8, 63) = 1.57 (*p* < .152)
Independent Action	4.16 (.24) 39	4.01 (.50) 33	
Efficacy	4.21 (.25) 39	4.16 (.29) 33	
Teamwork	4.01 (.30) 39	3.77 (.49) 33	
Self-Reward	3.07 (.43) 39	2.88 (.51) 33	
Self-Goal Setting	3.77 (.29) 39	3.64 (.44) 33	
Natural Reward	3.64 (.27) 39	3.51 (.29) 33	
Opportunity Thought	3.73 (.27) 39	3.63 (.25) 33	
Self-Observation	3.85 (.27) 39	3.79 (.33) 33	
III. Citizenship Behavior Questionnaire, Subordinate Report (CBQ)			
Organizational Citizenship Behavior			*F* (3, 68) = .100 (*p* < .960)
Interpersonal Support	3.72 (.34) 39	3.73 (.34) 33	
Courtesy	3.51 (.35) 39	3.48 (.42) 33	
Civic Virtue (News)	3.72 (.26) 39	3.69 (.41) 33	
Counterproductive Behavior			*F* (2, 69) = .257 (*p* < .774)
Unreliability	1.97 (.34) 39	1.97 (.45) 33	
Complaining	2.67 (.37) 39	2.61 (.53) 33	
IV. Job Satisfaction Questionnaire, Subordinate Report			
Job Satisfaction[a]			**F* (4, 382) = 2.78 (*p* < .027)
Overall	3.53 (.97) 236	3.55 (.93) 151	*F* (1, 385) = .050 (*p* < .823)
Pay	3.20 (1.27) 236	2.92 (1.22) 151	**F* (1, 385) = 4.60 (*p* < .033)
Job Security	2.38 (1.12) 236	2.36 (1.18) 151	*F* (1, 385) = 0.02 (*p* < .892)
Supervision	3.71 (1.16) 236	3.42 (1.12) 151	**F* (1, 385) = 5.58 (*p* < .019)

(table continues)

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
V. Trainee Performance/Effectiveness[a]			
Overall Performance (Manager)	4.27 (.48) 36	3.97 (.43) 34	**F (1, 68) = 7.33 (p < .009)
Facet Performance (Manager)			**F (4, 65) = 5.69 (p < .001)
Output	4.57 (.52) 36	4.45 (.40) 34	F (1, 68) = 1.04 (p < .312)
Interpersonal	3.95 (.73) 36	3.71 (.57) 34	F (1, 68) = 2.49 (p < .119)
Change	4.25 (.62) 36	3.82 (.67) 34	**F (1, 68) = 7.67 (p < .007)
Organizing/Planning	4.42 (.65) 36	3.65 (.77) 34	**F (1, 68) = 20.4 (p < .000)
Trainee Effectiveness (Subord)	3.48 (.46) 39	3.33 (.69) 33	F (1, 70) = 1.17 (p < .283)
VI. Moderator			
Desire for Self-Leadership[b]	3.25 (.46) 238	3.28 (.52) 152	F (1, 388) = .53 (p < .469)

Note. *p < .05. **p < .01. Except where noted, all tests at the unit level of analysis.

[a]No time 1 effectiveness self-report data available for comparison group. [b]Data unaggregated.

by subordinates were non-significant. However, between-group differences in SuperLeader behavior approached significance at conventional levels ($\underline{F}$ (4, 67) = 2.41, $\underline{p} < .058$). Though non-significant, this finding suggests time 1 subordinate perceptions of greater SuperLeader behavior from participants in the comparison group than the training group.

Sections II and III of the table show non-significant differences in subordinate perceptions of their own self-leadership behavior (Section II) and citizenship behavior displayed by colleagues in their participant-defined work groups (Section III). The strongest of these differences at time 1, in subordinate self-leadership, were still non-significant at conventional levels ($\underline{F}$ (8, 63) = 1.57, $\underline{p} < .152$). The trend, if any, suggested by this difference was in the direction of greater self-leadership reported by subordinates of participants in the comparison group.

As shown in Section IV of Table 5-2, individual-level time 1 differences in subordinate job satisfaction were significant at conventional levels ($\underline{F}$ (4, 382) = 2.78, $\underline{p} < .027$). Subsequent univariate tests revealed that subordinate satisfaction with pay ($\underline{F}$ (1, 385) = 4.60, $\underline{p} < .033$) and supervision ($\underline{F}$ (1, 385) = 5.58, $\underline{p} < .019$)

were significantly higher among subordinates of participants in the comparison group.

Section V shows that time 1 supervising manager ratings of overall performance (F (1, 68) = 7.33, p < .009) and facet performance (F (4, 65) = 5.69, p < .001) differed significantly between the two groups. Specifically, the overall performance of comparison group participants was rated higher by their supervising managers than the training group. Univariate tests following the significant multivariate test for facet effectiveness revealed that comparison group participants were rated significantly higher in terms of their ability to manage change (F (1, 68) = 7.67, p < .007) and their organizing/planning effectiveness (F (1, 68) = 20.4, p < .000). Note that although these ratings were provided before training had begun, supervising managers were aware of whether their subordinates had been chosen to receive immediate or delayed training. Section V also shows that subordinate perceptions of participant effectiveness did not differ significantly between the two groups. Note that participant self-appraisals of effectiveness were not compared at time 1 because self-report data were not collected from participants in the comparison group.

Had these results been uniformly negative, it would have been statistically appropriate--though perhaps less powerful--to test the propositions by comparing dimensions and clusters at time 2 through simple ANOVAs and MANOVAs. However, the time 1 comparison indicated that there was a near-significant difference in participant SuperLeader behavior and statistically significant differences in subordinate job satisfaction and supervising manager ratings of performance. Overall, these findings suggest somewhat greater SuperLeader behavior, greater subordinate job satisfaction, and higher performance among participants in the comparison group. Given these time 1 differences, the covariate approach was employed as originally planned.

Tests of Propositions and Exploratory Dimensions/Clusters

To control the experiment-wise error rate, proposition tests and other statistical tests were first performed at the multivariate (cluster) level whenever possible. Time 2 dimension responses were treated as dependent variables, time 1 dimension responses as covariates and experimental condition (training or comparison) as a factor. An exception was the LSQII-train self-report data. Because there was no time 1 participant self-report data in the comparison group, LSQII-train self-reports were compared at time 2 between the training and comparison groups.

This portion of the results chapter will be divided into several sections. The first section will treat participant leader behavior in the order in which the archetypes were presented by Manz and Sims (1991) and in which they have generally been presented: Strongman, Transactor, Visionary Hero, and SuperLeader. Discussion will then turn to subordinate self-leadership behavior, citizenship behavior, and several exploratory dimensions.

Leader Behavior

Recall that data on participant leader behavior were provided from two perspectives: the participants themselves (LSQII-train) and the subordinates of participants (LSQII-sub). The results of multivariate tests on these data sources are presented in Table 5-3.

Strongman behavior (Propositions 2-4 and 2-5). Proposition 2-4 addressed participant perceptions of their own Strongman behavior, while Proposition 2-5 addressed subordinate perceptions of participant Strongman behavior. Recall that Strongman behavior was viewed as incompatible with SuperLeadership. Consequently, these propositions predicted that participants and subordinates in the SuperLeadership training group would perceive less participant Strongman behavior than their counterparts in the comparison group. Time 2 descriptives and statistical tests for the three Strongman dimensions appear in

Table 5-3

Multivariate Tests of Leadership Propositions

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
	Propositions 2-4 and 2-5 -- Strongman Behavior		
I. Proposition 2-4: Leadership Strategies Questionnaire (Trainee Self-Report, LSQII-train)			
Strongman[a]			F (3, 56) = 1.33 (p < .273)
Aversive Behavior	1.97 (.60) 35	2.11 (.90) 25	
Assigned Goals	3.19 (.81) 35	2.88 (.68) 25	
Instruction and Command	2.67 (.56) 35	2.56 (.63) 25	
II. Proposition 2-5: Leadership Strategies Questionnaire (Subordinate Report, LSQII-sub)			
Strongman			F (3, 64) = .847 (p < .473)
Aversive Behavior	1.86 (.39) 39	1.97 (.69) 32	
Assigned Goals	3.04 (.44) 39	3.02 (.52) 32	
Instruction and Command	2.83 (.44) 39	2.84 (.59) 32	
	Propositions 2-6 and 2-7 -- Transactor Behavior		
III. Proposition 2-6: Leadership Strategies Questionnaire (Trainee Self-Report, LSQII-train)			
Transactor[a]			F (4, 55) = .580 (p < .679)
Participative Goals	4.10 (.48) 35	3.85 (.74) 25	
Contingent Material Reward	4.19 (.67) 35	3.94 (.85) 25	
Contingent Personal Reward	4.28 (.71) 35	4.09 (.74) 25	
Contingent Reprimand	3.40 (.59) 35	3.41 (.55) 25	
IV. Proposition 2-7: Leadership Strategies Questionnaire (Subordinate Report, LSQII-sub)			
Transactor			F (4, 62) = .998 (p < .415)
Participative Goals	3.63 (.44) 39	3.60 (.42) 32	
Contingent Material Reward	3.41 (.49) 39	3.30 (.57) 32	
Contingent Personal Reward	3.57 (.51) 39	3.49 (.43) 32	
Contingent Reprimand	2.90 (.34) 39	2.93 (.48) 32	
	Exploratory Analysis -- Visionary Hero Behavior		
V. Trainee Self-Report: Leadership Strategies Questionnaire (LSQII-train)			
Visionary Hero[a]			F (3, 56) = .369 (p < .776)
Challenge to the Status Quo	3.83 (.77) 35	3.62 (.75) 25	
Vision	3.66 (.68) 35	3.60 (.71) 25	
Idealism	3.78 (.91) 35	3.61 (.93) 25	

(table continues)

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
VI. Subordinate Report: Leadership Strategies Questionnaire (LSQII-sub)			
Visionary Hero			F (4, 62) = 1.27 (p < .292)
Challenge to the Status Quo	3.16 (.58) 39	3.17 (.60) 32	
Vision	3.20 (.43) 39	3.14 (.61) 32	
Idealism	3.41 (.44) 39	3.46 (.46) 32	
Stimulation and Inspiration	2.95 (.41) 39	2.82 (.59) 32	
Propositions 2-1 and 2-2 -- SuperLeader Behavior			
VII. Proposition 2-1: Leadership Strategies Questionnaire (Trainee Self-Report, LSQII-train)			
SuperLeader[a]			F (4, 55) = 2.15 (p < .086)
Self-Reward	3.12 (.71) 35	3.43 (.65) 25	
Teamwork	4.40 (.78) 35	4.22 (.88) 25	
Independent Action	3.91 (.53) 35	3.98 (.74) 25	
Opportunity Thought	3.75 (.61) 35	3.73 (.77) 25	
VIII. Proposition 2-2: Leadership Strategies Questionnaire (Subordinate Report, LSQII-sub)			
SuperLeader			F (4, 62) = 1.90 (p < .122)
Self-Reward	2.88 (.41) 39	2.68 (.34) 32	
Teamwork	3.82 (.39) 39	3.72 (.39) 32	
Independent Action	3.65 (.30) 39	3.38 (.56) 32	
Opportunity Thought	3.36 (.41) 39	3.19 (.43) 32	

Note. All tests at the unit level of analysis.

[a]Time 2 comparison.

Sections I and II of Table 5-3. Section I shows that there were no significant time 2 between-group differences in Strongman behavior as perceived by the participants themselves. Section II similarly shows, controlling for time 1 responses, that there was no significant time 2 between-group difference for subordinate perceptions of participant Strongman behavior. These results failed to support Propositions 2-4 and 2-5.

Transactor behavior (Propositions 2-6 and 2-7). Proposition 2-6 addressed participant perceptions of their own Transactor behavior, while Proposition 2-7 addressed subordinate perceptions of participant Transactor behavior. Transactor behavior was seen as a useful approach early in the transition to SuperLeadership. Consequently, these propositions predicted that participants and subordinates in the SuperLeadership training group would perceive more participant Transactor behavior than their counterparts in the comparison group. Time 2 descriptives and tests of these propositions for the four Transactor dimensions appear in Sections III and IV of Table 5-3. Section III shows that there was no significant time 2 between-group difference in Transactor behavior as perceived by the participants themselves. Section IV similarly shows, controlling for time 1 responses, that there was no significant time 2 between-group difference for subordinate perceptions of participant Transactor behavior. These results failed to support Propositions 2-6 and 2-7.

Visionary Hero behavior (exploratory only). Although additional exploratory tests will be presented later on, exploratory tests of Visionary Hero behavior are presented here because of their theoretical association with the other three Manz and Sims (1991) leadership archetypes. Based on the treatment of SuperLeadership in Chapter II, no specific propositions were developed with respect to participant Visionary Hero leader behavior. Time 2 descriptives and statistical tests for the four Visionary Hero dimensions appear in Sections V and VI of Table 5-3. As indicated in the Table, neither time 2 participant perceptions (three dimensions; excludes stimulation and inspiration because of inadequate internal consistency) nor subordinate perceptions of participant Visionary Hero behavior (four dimensions controlling for time 1 responses) differed significantly between the training and comparison groups. These results indicate that SuperLeadership training had no effect on participant Visionary Hero behavior.

SuperLeader behavior (Propositions 2-1 and 2-2). Proposition 2-1 addressed self-perceptions of participant SuperLeader behavior, while Proposition 2-2 addressed subordinate perceptions of participant SuperLeader behavior. These propositions stated that participants and their subordinates in the training group would perceive greater participant SuperLeader behavior than their counterparts in the comparison group. Time 2 descriptives and statistical tests of these propositions for the four SuperLeader dimensions appear in the Sections VII and VIII of Table 5-3. Section VII shows that time 2 differences between the self-perceptions of training and comparison group participants approached significance (F (4, 55) = 2.15, p < .086) but were still non-significant at conventional levels. Section VIII shows that time 2 differences in subordinate perceptions of participant SuperLeader behavior, controlling for time 1 responses, were also nonsignificant. These results failed to support Propositions 2-1 and 2-2.

Self-Leadership Behavior (Proposition 2-3)

The above statistical tests considered participant and subordinate perspectives on the leadership behavior of participants. The test of Proposition 2-3 specifically addressed the self-leadership behavior of subordinates themselves. This proposition predicted that subordinates of participants in the training group would report greater self-leadership behavior than subordinates in the comparison group. A multivariate test of this proposition, controlling for time 1 responses, appears in Table 5-4 along with time 2 descriptives. The result fails to support Proposition 2-3: the SuperLeadership training had no significant effect on subordinate self-leadership behavior.

Organizational Citizenship/Counterproductive Behavior

The above tests considered dependent variables related to participant leader behavior and subordinate self-leadership behavior. These have been called internal dependent variables because they were derived directly from the theory that was the foundation of the training. The results reported in this section pertain to the citizenship behavior of subordinates of the participants. Propositions outlined in Chapter III predicted how the training would affect two aspects of subordinate citizenship: organizational citizenship behavior and counterproductive behavior. These are external dependent variables because they are conceptually, but not directly, related to the training.

Organizational citizenship behavior (Proposition 3-1). Proposition 3-1 addressed the organizational citizenship behavior (OCB) perceived by subordinates among colleagues in their participant-defined work groups. Recall that the SuperLeader's emphasis on employee self-leadership was thought to promote teamwork and cooperation

Table 5-4

Multivariate Test of Self-Leadership Proposition

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
	Proposition 2-3 -- Self-Leadership		
Subordinate Self-Report: Self-Leadership Questionnaire (SLQ)			
Self-Leadership			F (8, 54) = .591 (p < .781)
Independent Action	4.15 (.26) 39	3.95 (.45) 32	
Efficacy	4.20 (.28) 39	4.07 (.28) 32	
Teamwork	4.01 (.27) 39	3.92 (.37) 32	
Self-Reward	3.10 (.46) 39	3.01 (.50) 32	
Self-Goal Setting	3.72 (.32) 39	3.61 (.47) 32	
Natural Rewards	3.59 (.29) 39	3.51 (.37) 32	
Opportunity Thought	3.79 (.26) 39	3.74 (.30) 32	
Self-Observation	3.82 (.37) 39	3.80 (.31) 32	

Note. All tests at the unit level of analysis.

akin to OCB. Consequently, Proposition 3-1 predicted that subordinates in the training group would perceive greater OCB among their colleagues than their counterparts in the comparison group. Time 2 descriptives and statistical tests of this proposition for the three dimensions in the OCB cluster appear in Section I of Table 5-5. Controlling for time 1 responses, there was no significant difference between the training and comparison groups in perceived OCB. These results fail to support Proposition 3-1.

Counterproductive behavior (Proposition 3-2). Proposition 3-2 addressed the counterproductive behavior (CB) perceived by subordinates among colleagues in their participant-defined work groups. Recall that the SuperLeader's emphasis on self-managed teamwork was thought to suppress counterproductive behavior among subordinates. Consequently, Proposition 3-2 predicted that subordinates in the training group would perceive less CB among their colleagues than their counterparts in the comparison group. Time 2 descriptives and statistical tests of this proposition for the two dimensions in the CB cluster appear in Section II of Table 5-5. Controlling for time 1 responses, subordinates in the training group perceived significantly more unreliability among their colleagues than subordinates in the comparison group. These results directly contradict Proposition 3-1: the

Table 5-5

Multivariate Tests of Citizenship Behavior Propositions

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
	Proposition 3-1 -- Organizational Citizenship Behavior		
I. Proposition 3-1: Citizenship Behavior Questionnaire (CBQ)			
Organizational Citizenship Behavior			F (3, 64) = .494 (p < .687)
Interpersonal Support	3.78 (.35) 39	3.76 (.44) 32	
Courtesy	3.57 (.37) 39	3.63 (.37) 32	
Civic Virtue (News)	3.79 (.31) 39	3.80 (.37) 32	
	Proposition 3-2 -- Counterproductive Behavior		
II. Proposition 3-2: Citizenship Behavior Questionnaire (CBQ)			
Counterproductive Behavior			*F (2, 66) = 4.06 (p < .022)
Unreliability	1.90 (.28) 39	2.05 (.41) 32	**F (1, 67) = 8.20 (p < .006)
Complaining	2.51 (.43) 39	2.55 (.45) 32	F (1, 67) = 1.12 (p < .294)

Note. *p < .05. **p < .01. All tests at the unit level of analysis.

effect of SuperLeadership training on subordinate CB was opposite to the prediction.

Exploratory Dimensions

Besides participant Visionary Hero behavior discussed above, several additional exploratory dimensions or clusters were analyzed in the present research. These analyses, presented in Table 5-6, will be discussed below.

Manager perceptions of performance. Performance data provided by the managers of participants was analyzed in two ways. The first, facet approach was a multivariate test based on the results of factor analysis reported in Chapter IV. The second, overall approach was a univariate test based on the arithmetic mean of all a priori dimensions in the performance measure completed by managers. The results of both analyses are presented at the top of Section I in Table 5-6. According to the multivariate test of performance facets, controlling for time 1 responses, there was no significant difference in participant facet performance between the training and comparison groups as perceived by managers. According to the univariate test of overall performance, however, there was a significant training effect. Although time 1 training group mean performance ratings (3.95) were lower than comparison group mean ratings (4.23), by time 2 the performance ratings had achieved parity (4.26).

Table 5-6

Tests of Exploratory Clusters/Dimensions

Cluster Dimension	Comparison Mean (Std Dev) n	Training Mean (Std Dev) n	F Statistic
I. Trainee Performance/Effectiveness			
Facet Performance			F (4, 52) = 1.12 (p < .358)
Output	4.59 (.53) 31	4.62 (.51) 30	
Interpersonal	4.08 (.61) 31	4.03 (.65) 30	
Change	4.03 (.68) 31	4.08 (.71) 30	
Organizing and Planning	4.29 (.64) 31	4.20 (.85) 30	
Overall Performance Scale	4.26 (.46) 31	4.26 (.47) 30	*F (1, 58) = 5.37 (p < .024)
Trainee Effectiveness[a] (Self-Report)	3.71 (.73) 35	3.66 (.88) 25	F (1, 58) = .07 (p < .795)
Trainee Effectiveness (Subordinate)	3.57 (.45) 39	3.48 (.62) 32	F (1, 68) = .02 (p < .878)
II. Job Satisfaction Questionnaire, Subordinate Report			
Job Satisfaction[b]			F (4, 238) = .261 (p < .903)
Overall	3.61 (.95) 157	3.69 (.98) 90	
Pay	3.37 (1.19) 157	3.19 (1.21) 90	
Job Security	2.27 (1.09) 157	2.24 (1.13) 90	
Supervision	3.74 (1.07) 157	3.73 (1.04) 90	
III. Moderator			
Desire for Self-Leadership[b]	3.29 (.46) 158	3.25 (.41) 90	F (1, 245) = .71 (p < .402)

Note. *p < .05. Except where noted, all tests at the unit level of analysis.

[a]Time 2 comparison. [b]Test on unaggregated data.

Consequently, SuperLeadership training seemed to increase the performance of training group participants as perceived by managers.

Participant and subordinate perceptions of participant effectiveness. Recall that participants were asked for their perceptions of their own effectiveness on the job as part of the LSQII-train. As shown in the middle of Section I in Table 5-6, there was no significant difference in self-perceptions of time 2 effectiveness between the training and comparison groups. In parallel items as part of the LSQII-sub, subordinates were also asked about their perceptions of participant effectiveness. As shown at the bottom of Section I in Table 5-6, controlling for time 1 responses, there was no significant difference in subordinate perceptions of participant effectiveness between the two groups.

Subordinate job satisfaction. Individual-level subordinate job satisfaction data were also compared between the training and comparison groups. As shown in Section II of Table 5-6, there was no significant difference in subordinate job satisfaction between groups, controlling for time 1 responses.

Moderator. The individual-level desire for self-leadership moderator data collected from subordinates were also compared between the training and comparison groups.

As shown in Section III of Table 5-6, there was no significant difference in subordinate desire for self-leadership controlling for time 1 responses.

Univariate Moderator Analysis

The desire for self-leadership moderator scale was included to enable moderator analysis at the individual level if it appeared that the participant-defined unit level of analysis was inappropriate. Although analysis supported aggregation, individual-level moderator analysis was nevertheless performed on each dimension to further explore the data. Analysis was performed on a dimension-by-dimension basis using step-wise regression, with time 2 subordinate responses on each dimension as the dependent variables. Predictors were entered in the following order: (1) the corresponding time 1 dimension provided by the subordinate; (2) the condition (training or comparison) for the participant who was the focus of data collection from the subordinate; (3) the subordinate response on the time 1 desire moderator dimension; and (4) the interaction between condition and desire. Consequently, the regression equation was as follows:

$$\underset{}{T_2} = \overset{(1)}{(B_1)(T_1)} + \overset{(2)}{(B_2)(\text{Cond})} + \overset{(3)}{(B_3)(\text{Desire})} + \overset{(4)}{(B4)(\text{Cond*Desire})} + K,$$

where K is a constant.

Table 5-7 presents the results of this analysis in condensed form, with beta weights for each component from the four-factor regression equation. Underlined beta weights reflect a significant step-wise increment in explained variance for that component (based on the order-of-entry described above). Note that LSQII-train dimensions, participant self-assessments of effectiveness, and supervising manager assessments of participant performance reflect the participant-defined unit level only. Consequently, they are not included in this analysis.

Table 5-7 shows that time 1 dimension scores were, in every case, predictive of time 2 scores. Once this auto-correlation effect was removed, in effect, partialled out, condition contributed significantly to explained variance for only one dimension. This confirms the generally non-significant unit-level findings reported for the experiment as a whole. Desire only occasionally contributed significantly to explained variance. However, the (condition * desire) interaction made a significant--sometimes quite strong--contribution for 19 of the 33 dimensions. Furthermore, 12 of the 33 dimensions displayed a specific pattern: the time 1 dimension main effect was significant and positive, the time 1 interaction effect was significant and negative, and no

Table 5-7

Individual Level (Subordinate Desire) Moderator Analysis

	Desire Betas (Individual Level)				
Order of Entry ===>	(1)	(2)	(3)	(4)	
	time[a]	cond[b]	desire[c]	inter[d]	d.f.[e]
Cluster	1				
Dimension					
III. Leadership Strategies Questionnaire, Subordinate Report (LSQII-sub)					
Strongman	0.83	-1.03	-0.39	1.09	(4, 242)
Aversive Behavior	0.56	0.44	-0.01	-0.46	(4, 242)
Assigned Goals	[f]0.61	1.05	0.38	-1.19	(4, 242)
Instruction and Command					
Transactor	[f]0.70	1.14	0.43	-1.20	(4, 242)
Participative Goals	0.66	-0.40	-0.08	0.40	(4, 241)
Contingent Material Reward	0.71	0.28	0.10	-0.27	(4, 242)
Contingent Personal Reward	0.62	-0.93	-0.42	0.99	(4, 242)
Contingent Reprimand					
Visionary Hero	[f]0.81	1.88	0.72	-2.03	(4, 242)
Challenge to the Status Quo	0.73	1.81	0.68	-2.01	(4, 242)
Vision	[f]0.70	1.20	0.40	-1.28	(4, 242)
Idealism	[f]0.68	1.04	0.40	-1.21	(4, 242)
Stimulation and Inspiration					
SuperLeader	0.73	-0.17	-0.14	0.15	(4, 242)
Self-Reward	0.63	-0.23	-0.16	0.29	(4, 240)
Teamwork	[f]0.67	0.89	0.33	-0.99	(4, 242)
Independent Action	[f]0.69	0.70	0.26	-0.77	(4, 242)
Opportunity Thought					
IV. Self-Leadership Questionnaire, Subordinate Report (SLQ)					
Self-Leadership	[f]0.73	2.60	1.05	-2.97	(4, 243)
Independent Action	[f]0.59	1.97	0.84	-2.29	(4, 243)
Efficacy	0.45	-0.10	0.04	0.11	(4, 240)
Teamwork	0.69	-0.69	-0.23	0.71	(4, 243)
Self-Reward	0.63	0.51	0.40	-0.63	(4, 243)
Self-Goal Setting	[f]0.68	1.29	0.63	-1.47	(4, 243)
Natural Reward	0.63	-0.23	-0.07	0.26	(4, 243)
Opportunity Thought	[f]0.48	1.84	0.84	-2.09	(4, 240)
Self-Observation					
V. Citizenship Behavior Questionnaire, Subordinate Report (CBQ)					
Organizational Citizenship Behavior	0.72	0.05	-0.03	-0.06	(4, 233)
Interpersonal Support	0.66	0.34	0.08	0.28	(4, 233)
Courtesy	0.50	0.12	-0.12	-0.13	(4, 233)
Civic Virtue (News)					

(table continues)

Cluster Dimension	Desire Betas (Individual Level)				
Order of Entry ===>	(1)	(2)	(3)	(4)	
	time 1[a]	cond[b]	desire[c]	inter[d]	d.f.[e]
Counterproductive Behavior					
Unreliability	0.69	0.64	0.31	-0.64	(4, 231)
Complaining	0.62	-0.44	-0.19	0.49	(4, 231)
VI. Job Satisfaction Questionnaire, Subordinate Report					
Job Satisfaction					
Overall/Growth	0.67	-0.03	-0.02	0.07	(4, 242)
Pay	0.79	-0.99	-0.43	1.09	(4, 242)
Job Security	0.72	1.02	0.33	-1.11	(4, 242)
Supervision	0.78	1.11	0.43	-1.12	(4, 242)
VII. Trainee Performance/Effectiveness					
Trainee Effectiveness (Subordinate)	[f]0.79	1.99	0.80	-2.14	(4, 242)

Note. Underlined beta weights significant at $p < .05$ or better. [a]Corresponding individual-level time 1 dimension rating. [b]Experimental condition (training/comparison). [c]Time 1 individual-level "desire for self-leadership" score. [d]Interaction between condition and individual-level "desire for self-leadership" score. [e]Degrees of freedom reflecting individual level of analysis.

other independent variable were significant. Dimensions with this pattern are indicated with the superscript "f" in Table 5-7.

Figure 5-1 portrays an example of this pattern--in this case for the LSQII-sub SuperLeadership meta-dimension encourages independent action. Note that this is only one illustration of the general pattern; similar results, for example, were also found for other dimensions, including Strongman instruction and command, Transactor participative goal-setting, and three of the four Visionary Hero dimensions. Note also that in this example of the general pattern, for the comparison group, time 2 subordinate perceptions of participant encouragement of independent action were relatively unchanged with increasing subordinate desire for self-leadership. For the training group, however, time 2 perceptions decreased as subordinate desire for self-leadership increased.

To summarize, subordinates of participants who received the training were influenced by their own desire for self-leadership: subordinates who had a strong desire for self-leadership reported lower levels of their leader encouraging independent action. Possible explanations for this pattern of results will be discussed in greater detail in the next chapter.

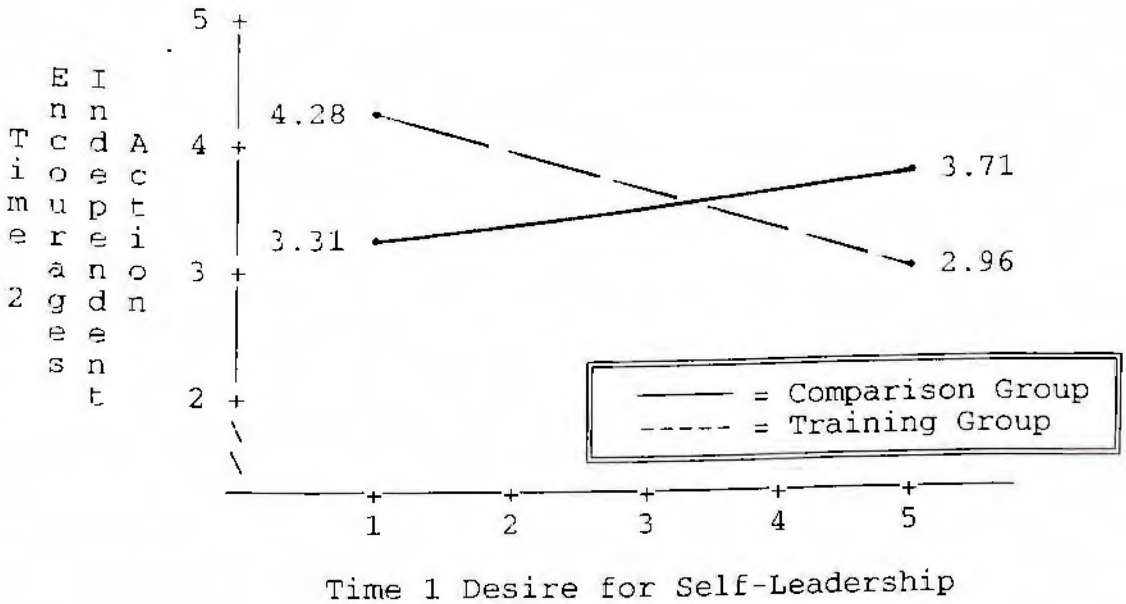

Figure 5-1. Example individual (subordinate) level interaction effect for subordinate Desire for Self-Leadership.

Summary of Results

The results of the experiment generally did not support the propositions advanced in Chapters II and III: none of the four leader behavior clusters differed between conditions at conventional significant levels for either the LSQII-sub or LSQII-train. The results also did not support propositions concerning subordinate self-leadership (SLQ) and subordinate citizenship behavior (CBQ). Between-condition differences were significant for subordinate counterproductive behavior (CBQ), but the direction of the relationship was opposite to prediction. In tests of the exploratory clusters and dimensions, only manager ratings of overall participant performance differed significantly between the training and comparison conditions. That is, training group participants were perceived not to be performing as well comparison group participants at time 1, whereas performance ratings for both groups had reached parity by time 2. Finally, a pattern of significant interaction effects was found for the moderator, desire for self-leadership.

Chapter VI: Discussion

As shown in Chapter V, the results of the experiment did not support the research propositions. The experiment did not find a significant effect for the training on the behavior of middle-level managers who were the focus of data collection: neither the manager self-descriptions nor the descriptions of managers by their subordinates demonstrated training-related change. This chapter presents post-hoc speculation and investigation concerning <u>why</u> the results came out as they did. Discussion in this chapter will focus on three broad explanations for why the research propositions were not supported:

- Questions about the research itself, including an inadequate time lag, the content of criterion questionnaires, individual differences in subordinate responses to the questionnaires, and the research sample;
- Questions about the training; and
- Questions about the climate for transfer in the host organization.

Each of these explanations will be discussed in detail later in this chapter.

<u>Organization of Chapter VI</u>

A central part of the post-hoc speculation of this chapter was a series of interviews with managers who participated in the first two training sessions. Because these interviews will be important for explaining the results, they will be briefly overviewed in the next section. (Specific comments produced by these interviews will appear throughout the chapter for illustrative purposes.) Discussion will then consider some statistically significant findings that emerged from the research. These findings will help frame discussion in the following section, which will consider several possible explanations for the dominant finding that the training did not produce detectable behavioral effects. The final section will offer some suggestions for future research on SuperLeadership.

Post-Training Evaluation Interviews

To better interpret the results of the experiment, in early February, 1993, semi-structured interviews were conducted with 14 trainees who had received training in July, 1992. These interviews consisted of probes designed to elicit wide-ranging commentary on key aspects of the training and research. Starting with an initial pool of trainees who were unaffected by the RIF in October, 1992, interviewees were selected so that all divisions would be represented. The final sample included 13 middle-level managers who were the central focus of training and data collection and one senior manager who received training but was not the focus of questionnaires. Interviews occurred on-site when possible; to accommodate scheduling conflicts, however, about 1/3 of the interviews were conducted by telephone. At the time of initial contact, interviewees were asked to think about the training program itself, the actions they took to implement the training, and how their implementation efforts had worked out.

Appendix 6-1 presents an outline for the interviews, including the introduction that was read to the trainees. The interview included two sets of related questions. The first set asked trainees for their retrospective impressions of the training based on their experiences with SuperLeadership since July, 1992. These questions concerned aspects of training that were particularly helpful, the central messages conveyed by the training, and changes the trainees would recommend. The second set of questions solicited information concerning implementation of the training, including difficulties applying the training and actions taken to implement SuperLeadership. Specific responses provided by the trainees will be highlighted periodically throughout the rest of this chapter.

Overview of Trainee Reactions and Responses to the Training

The interviewees provided much helpful information, including some surprisingly candid and specific impressions of the training itself and the climate for transfer. This section summarizes these impressions; specific comments will also be cited throughout the remainder of this chapter.

Retrospective impressions of the training. Interviewees reported two major messages that were generally consistent with the overall philosophical intent of the training. The first message concerned the importance of employee empowerment and initiative. As one trainee reported,

> The major thing I learned was the importance of empowering the employee. To me, that means letting them be in control of how they achieve their specific objectives. It means giving them the support, tools, and other things they need. I see myself more as a coach.

A second central message was the importance of teamwork: one interviewee said, "the course gave me a better structure [for encouraging self-managing teams] than I had before."

In general, interviewees felt the training provided useful insights and reinforced a leadership approach they wished to pursue. Some interviewees went even further by asserting that the training sent an important message about how top management expected them to lead:

> The message this training sent about what was expected was as important as the skill-building. This is one of the few courses I took where I felt like I did something. . .because management is sending a signal that this is how I should behave.

In essence, trainees felt the training was something of an implicit policy statement--a corporate imprimatur--that gave them permission to push forward. As such, the mere presence of the training may have been perceived as signalling top management support for the messages it conveyed. Some trainees also commented favorably on the time allocated to the training (three working days), considering this a signal about the perceived importance of the training to the company.

Responses to the training. Interviewees generally reported that they discussed the content of the course with their subordinates when they returned from the training. Discussion ranged from informal conversation to formal presentations. One trainee, for example, discussed the content of the training in a staff meeting, circulated

Manz and Sims' (1990) book, and distributed a summary listing of SuperLeadership strategies. Another trainee carried this strategy even further by meeting with each subordinate to discuss the training and to work out strategies on how to implement SuperLeadership on an individual basis. In general, trainees made an effort to communicate the broad intent of the training to their direct-reports. The possible effects of communication will be revisited periodically in this chapter.

Specific interviewee actions after the training centered mainly on encouraging autonomy and teamwork. One approach used by trainees to encourage self-leadership involved withholding direct advice: "I changed the way I approached it when someone brought a problem to me. I asked 'how would you solve that problem?' I now try to do that consistently." One comment illustrated just how hard it can be to hold back--to let employees solve their own problems--when solutions seems obvious:

> I tended to delegate more [as a result of the training]. I'm trying to let people do their own thing even on problems that I have expertise with. Sometimes it's hard for me to bite my tongue. . .[but] they gained more positive experiences because of [my] backing off.

Another trainee specifically cited greater reliance on teamwork for making decisions:

> I [have] used more of a team approach in delegating responsibilities [since the training]. . . . Our group made assignments for developing a survey to assess people's feelings about the change [to a four-day work week]. I kicked in a few items, but the group did most of it and made the assignments to implement it.

The majority of trainees felt that the training offered important insights that affected their leadership. Furthermore, in general, the post-hoc interviews strongly suggested that trainees <u>attempted</u> to change their behavior in ways that were consistent with the intent of the training.

Comment on Significant Findings

Later sections of this chapter will directly address the question of why trainee <u>attempts</u> at behavioral change did not produce statistically significant <u>perceived</u> changes in manager behavior which might be detected by the behavioral questionnaires. The post-hoc interviews were quite helpful for elaborating possible reasons for the apparent lack of perceived change. But although there was no direct support for the research propositions, the experiment <u>did</u> produce some statistically significant findings. This section will highlight three significant findings before more extensive discussion turns to the broader question of why the experiment generally did not produce evidence of behavioral change. These significant findings include: (a) a between-condition difference in subordinate counterproductive behavior that was opposite to the expected direction, (b) a between-condition difference in supervising manager ratings of overall participant performance, and (c) a pattern of significant interaction effects for the desire for self-leadership moderator variable.

Subordinate Counterproductive Behavior

In Chapter V, Table 5-5 showed a significant multivariate training effect on the two-dimension counterproductive behavior cluster (F (2, 66) = 4.06, p < .022). Univariate ANCOVAs found no significant effect for the complaining dimension (F (1, 67) = 1.12, p < .294). However, the univariate effect for unreliability was significant ((F (1, 67) = 8.20, p < .006). When the time 1 and time 2 means were compared between the comparison and training groups, the direction of this effect was found to be opposite to prediction. In the comparison group, the time 1 and time 2 means for unreliability decreased slightly from 1.97 to 1.90; comparison group subordinates perceived their colleagues as slightly less unreliable, that is, slightly more reliable at time 2 than time 1. In the training group, the time 1 and time 2 means increased from 1.94 to 2.05; subordinates in the training group perceived their colleagues as more unreliable, that is less reliable at time 2 than time 1.

The reasons for these findings are not clear. One speculative explanation is that something occurred in the environment of the organization that differentially affected the training and comparison groups. Because departments were randomly assigned to condition within each division, however, this explanation seems unlikely. Another possibility is that communication by returning trainees about the importance of empowerment and teamwork may have differentially affected the salience of co-worker reliability between the groups. Perhaps this somehow accounts for the opposing directional trends between the groups. But if differential sensitivity explains this finding, sensitivity effects must have been quite selective. Recall, for example, that the training had no significant effect on the SuperLeader behavior cluster--including empowerment-related dimensions such as encouraging independent action and encouraging teamwork--based on responses by participants (F (4, 55) = 2.15, p < .086), time 2 comparison only) and their subordinates

(F (4, 62) = 1.90, p < .122). Furthermore, no significant training effect was found for subordinate organizational citizenship behavior (F (3, 64) = .494, p < .687), which included the teamwork- and reliability-related interpersonal support dimension.

Ultimately, conclusions about this isolated finding must be tempered in light of the broad non-significance for the leadership, self-leadership, and citizenship clusters as a whole. The scope of data collection--the sheer number of clusters and dimensions considered in this experiment--may have increased the likelihood of finding significance somewhere in the data set despite the broad absence of detectable significant effects. In essence, this lone statistically significant finding may be a Type I error. Certainly, on the basis of these results, it would be premature to argue that the SuperLeadership training actually promoted unreliability among followers.

Performance Ratings by Supervising Managers

A significant training effect was found for the overall performance scale completed by supervising managers of the participants (F (1, 58) = 5.37, p < .024). This scale was created by combining supervising manager ratings across nine performance dimensions covering aspects of performance like productivity, interpersonal effectiveness, organizing and planning, and accommodating change (see Appendix 4-7 for full performance questionnaire). Time 2 means for overall performance in the comparison and training groups were identical (4.26). However, before training at time 1, the means for the comparison and training groups were 4.23 and 3.95, respectively. Whereas ratings for the comparison group remained essentially constant over time, ratings for the training group increased.

Explanations for this effect may relate to shared training experiences by the focal participants and their superiors. Recall that the experiment attempted to facilitate transfer by providing training to managers throughout the organizational hierarchy, including supervisors of the trainees who were the focus of data collection. Consequently, 16 of the 17 managers who provided performance data on the training group also participated in the training--sometimes alongside the trainees they were describing. One possible explanation for this finding, then, is that supervising managers' ratings may have been directly affected by their knowledge of whether their subordinates (the trainees) received training between time 1 and time 2.

A second, less direct interpretation is that the shared training experience provided an opportunity for communication so that supervisors actually saw key improvements. During the post-hoc interviews, some trainees commented favorably on the opportunity to share the training with their supervisors. One interviewee, for example, said,

> I had training with my supervisor. That was a positive feature of the training. We worked together. When things would happen in a meeting [after the training], I knew where he was coming from and he knew where I was coming from.

Clearly, knowledge by superiors that their subordinates had undergone training is a contaminating factor that makes strong conclusions difficult. However, because of their close communication, superiors of the trainees may have been able to see the beginnings of positive change in leadership and teamwork that were not yet evident to others--even to their subordinates.

"Desire for Self-Leadership" Moderator Effects

A pattern of interaction effects for the LSQII-sub desire for self-leadership moderator variable was identified in Chapter V. In this pattern, which characterized 12 of 33 dimensions, only the time 1 dimension autocorrelation effect and the time 1 (condition * desire) interaction contributed significantly to explained variance in time 2 dimension responses; betas for the time 1 dimension and interaction components were positive and negative, respectively. This pattern was observed in the participant effectiveness dimension and one Strongman, one Transactor, three Visionary Hero, two SuperLeader, and four self-leadership behavior dimensions.

Figure 5-1 illustrated this pattern for a sample dimension--the LSQII-sub SuperLeadership meta-dimension encourages independent action. For reference, this figure is again reproduced as Figure 6-1. Note that this figure is generally typical of the pattern found among significant moderator dimensions. Note also the pattern of relationships that produced this significant moderator effect. For the comparison group in this example, time 2 subordinate perceptions were basically unchanged as a function of subordinate desire. For the training group, however, time 2 perceptions decreased with increased subordinate desire. In 12 of 33 interactions, the experimental condition affected time 2 subordinate responses in conjunction with the desire for self-leadership moderator dimension.

It seems implausible that this robust, consistent pattern is due solely to chance. One interesting possibility is that these findings illustrate a phenomenon called beta change (Golembiewski, Billingsley, & Yeager, 1976; Armenakis, 1988). Beta change reflects "scale recalibration," as when "the standard of measurement used

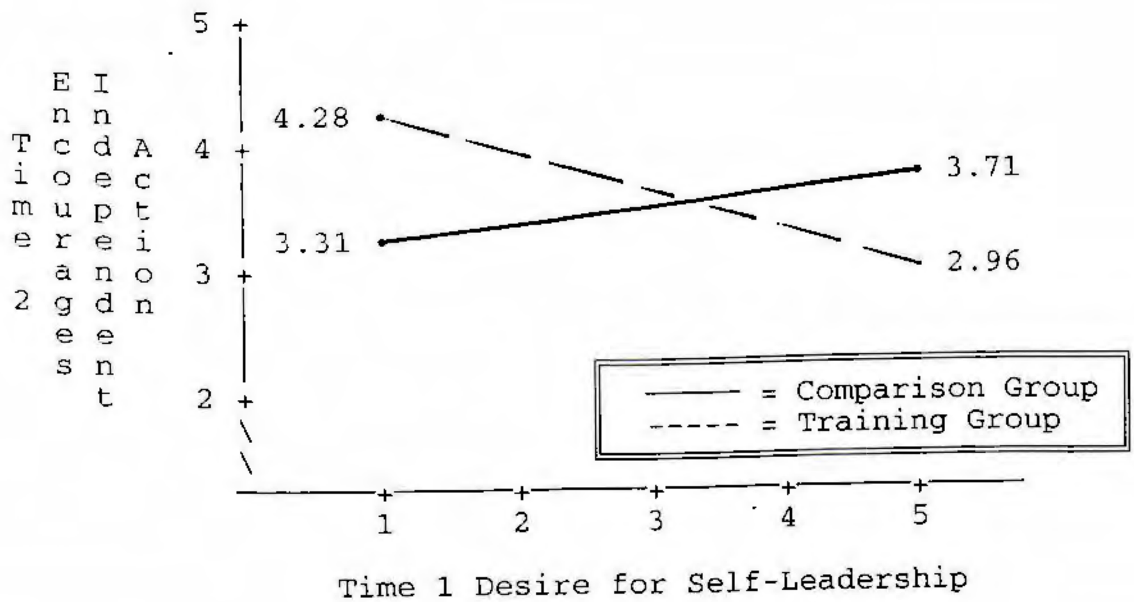

Figure 6-1. Example individual (subordinate) level interaction effect for subordinate Desire for Self-Leadership.

by a subject to assess a stimulus changes from one testing period to another" (Armenakis, 1988, p. 165). In the present experiment, beta change would result if subordinates provided different time 2 responses because an event (e.g., new information) changed perceptions of "how much" leader behavior was present independent of actual changes in participant behavior.

Explanations about why a beta shift occurred in the present experiment are necessarily speculative. However, the phenomenon may involve perceptual changes related to the individual difference "desire" variable. Recall that the interviews indicated that trainees typically informed subordinates of the goals and philosophy of SuperLeadership when they returned from the training. This communication may have alerted subordinates to the training's emphasis on employee empowerment. Perceptions among subordinates for whom opportunities for self-leadership were important (that is, high desire) may have decreased at time 2 when their heightened expectations were not met by strong evidence of change. Consequently, perhaps the beta shift suggested by the interaction between desire and time 2 perceptions reflects a disillusionment effect.

Of course, this speculation goes far beyond the data collected for this experiment. Future research might target the effects of unmet expectations (disillusionment) more directly. However, note that the interaction effects observed in the present experiment suggest that the training did have an effect--albeit not the effect intended. The implications of these moderator findings will be elaborated more fully when discussion turns to possible reasons why there was little evidence of behavioral change as a result of the training.

Comment on the Overall Lack of Support for the Research Propositions

Overall, the experiment generally did not report significant change as a result of the training. Given the lack of apparent change, a question naturally arises as to why there was an absence of training effects. It is difficult to definitively explain the broad absence of change in the present experiment because this experiment, like all field studies, lacked laboratory-like control. The remainder of this chapter will discuss possible causes for the broadly non-supportive findings contained in this report, including: (a) the research itself, including the time lag and instrumentation; (b) the training manipulation; and (c) the climate for transfer of training in the host organization.

Questions About the Research

This section will discuss potential flaws in the execution of the research that may have contributed to the apparent lack of change. I will open by considering possible problems with the time lag chosen for the research. Discussion will then turn to questions about the criterion measures.

Time lag. As described in Chapter IV, the time lag originally chosen for this study--12 weeks--was a judgment call based on the findings of past research. Recall, however, that it seemed increasingly clear during the research that business conditions might require a reduction-in-force (RIF). Concern about the research effects of a RIF during the lag period led to a decision to shorten the original 12 week lag to ten weeks. It is possible that a 10-12 week lag may not have been adequate to detect a training effect. For example, perhaps SuperLeadership behaviors are subtle enough that it simply takes longer than 10-12 weeks to register a detectable effect. If so, there might later be a bounceback effect of the kind reported by Hand, Richards, and Slocum (1973). Hand et al. studied the effects of a general managerial "human relations training program" designed around participation exercises, listening exercises, and other modules. They found that measures of leadership attitudes and behavior registered no change 12 weeks after training. Significant change did appear, however, after 18 months. Perhaps a longer time lag might have detected measurable change.

Criterion measures. Another explanation for the present experiment's failure to detect significant change is that the criterion measures may not have been sufficiently relevant to the training intervention. Goldstein (1986) considers training and criterion relevance to be cornerstones of successful training implementation and evaluation. Goldstein views criterion and training relevance as two sides of the same coin: approaching relevance, he asserts, is largely a process of tracing curriculum content and criterion development back to needs assessment. The "tracing-out" process advocated by Goldstein clearly increases the likelihood that the training curriculum captures the knowledge, skills, and abilities required on the job. Critically, this process also links the training curriculum with the criterion measures.

In the present experiment, curriculum design and criterion development were driven by a priori theoretical considerations developed in Chapters II and III. The critical criterion measures were designed to be either directly or conceptually related to the leadership typology developed by Manz and Sims (1991). The internal criterion measures (LSQII-sub, LSQII-train, and SLQ) were a direct extension of the typology: these instruments were specifically designed around key leader behaviors discussed in Chapter II with an emphasis on SuperLeadership and self-leadership. The external criterion measure (CBQ) was based on citizenship constructs which were, in turn, conceptually linked with SuperLeadership in Chapter III. Ideally, the criterion measures should have meshed with the training curriculum, which was designed around the same leadership typology. However, it is possible that the criterion measures included dimensions that were irrelevant to the training content (surplus) while failing to include dimensions that were relevant to the training (deficiency).

Individual differences in responding to the criterion questionnaires. The above discussion of the desire for self-leadership moderator effect will not be repeated here. However, the moderator effect identified in Chapter V suggests that subordinate responses on the questionnaires may have varied with individual differences in subordinate desire for self-leadership. It may have been difficult for the training intervention to produce behavioral effects that were sufficiently strong to show through the "noise" produced by varying subordinate reactions to communication about the training.

Inadequate sample size. An average of about five subordinates were present in each participant-defined unit at time 1. Time-based attrition effects reduced this even further for tests of the propositions. A larger within-unit sample size would have increased the reliability of measurement by reducing error variance within participant-defined experimental units. Greater numbers of reporting subordinates, then, would have tended to average out within-unit differences in perception. Had larger units been available, reliability of measurement--hence the ability of measures to detect change--would have increased.

Excessive homogeneity in the sample. Chapter IV discussed how ANOVA-based procedures such as the intraclass correlation coefficient (Shrout & Fliess, 1979) can be affected by range restriction. Range restriction would have the effect of suppressing between-unit variance. George (1990) has argued that range restriction is particularly likely when research is confined to a single organization, where selection and attrition effects can produce overall homogeneity.

In the present study, most of the participant-defined units were centrally located at a single, long-established geographical location. In addition, the organization had an historical tendency to hire employees who were relatively young: recall that although the respondents averaged 40 years in age, they had been with the company an average of 14 years. On average, then, employees had been hired when they were only 26 years old. The location of employees at a single work site, their relative youth at entry, and their long tenure suggest that acculturation effects may have produced range restriction in the experimental sample. If everyone is so similar, it may be difficult to find meaningful between-unit differences. Because statistical tests depend on between-unit differences, this relative homogeneity may have made it difficult to detect behavioral change.

Summary. The apparent lack of change may be explained in part by problems with the research itself including the time lag, the content of the questionnaires, individual differences in subordinate responses to the questionnaires, and characteristics of the sample including size and homogeneity. The present ten-week lag may have been inadequate. Furthermore, the content of the questionnaires may not have been sufficiently relevant to the training. In addition, differential subordinate responses to the questionnaires resulting from individual differences in desire for self-leadership may have increased the error variance of measurement. At the same time, it may also have been difficult to detect change because of insufficient within-unit sample size and homogeneity produced by acculturation effects.

Although the above discussion touched specifically on concerns related directly to the research itself, some of these concerns are actually derivative to broader training and organizational climate issues. The training intervention and the climate for training transfer will be addressed below.

Questions about the Training

During the post-hoc interviews, it was clear that the training participants appreciated the pace of the training, the choice of exercises, and the emphasis on hands-on, experiential learning: "I felt that the exercises were useful, especially in contrast with straight lecture." They were also impressed with the trainer's business and academic credentials, his style of presentation, and his ability to relate course materials to his own (and the trainees') experience as managers. In retrospect, the training was probably strengthened by the status of the trainer as an outside consultant with both business and academic experience (c.f., Rosen, Georgiades, & McDonald, 1980).

In their meta-analysis of 70 management training interventions, Burke and Day (1986) considered a several different types of training. They found that lecture, group discussion, visual aids, and participation are moderately effective as assessed by subjective and objective measures of learning and behavior. The present training included all of these approaches. Still, and notwithstanding the many positive comments from the interviewees and from evaluators who sat in on the training, a potential explanation for the generally non-significant results is that the training had an insufficiently strong effect. Of course, experiments are more likely to produce significant results when they include a strong manipulation. As suggested by the above discussion of research-related issues, the training manipulation in this experiment probably needed to have a strong effect if broadly significant change was to be detected. This section will discuss aspects of the training that may have attenuated the strength of the training manipulation.

Insufficient Training Time and Follow-up

One possible training-related problem may have been insufficient time in the classroom. Although trainees did not report feeling rushed, three days (approximately 21 hours of classroom instruction) may not have provided enough exposure to SuperLeadership principles and behaviors. Compared with the present training, the participative leadership skills program evaluated by Hand et al. (1973) consisted of 90-minute training sessions each week for 28 consecutive weeks. This schedule resulted in a total of 42 hours of classroom instruction--far more than offered in the present program. However, Kidder (1990) was able to document training effects resulting from a management course in participative decision making that lasted only two days.

Compounding the possible problem of brevity was the massed nature of instruction: the training was offered on consecutive days rather than over time. Goldstein (1986) cites evidence that massed practice can be more effective than distributed practice with periods of rest for initial learning; however, massed practice generally results in less-effective retention over time. Consider a leadership training course that was successfully validated by Latham and Saari (1979). Although the course included only 18 hours of classroom instruction, training was distributed in two-hour blocks over nine weeks. In the programs evaluated by Latham and Saari and Hand et al. (1973), trainees may have benefitted from distributed practice. In the present study, it was necessary to train on consecutive days in order to train managers as a group while minimizing disruptions to the host organization. However, the decision to confine training to three back-to-back training dates may have limited the longer-term effectiveness of the program.

Recognizing the importance of post-training reinforcement, follow-up sessions were offered to the Session I and Session II trainees. However, due to scheduling conflicts unknown to the researchers at the time, one of the sessions was poorly attended. A lack of follow-up, then, may also have weakened the net effect of the training manipulation. One of the interviewees who attended the follow-up session commented that "we need more follow-up. The one session wasn't enough. People get caught up in the rat-race and as time goes on you drift away. Just a periodic reminder of the high points would probably be helpful."

The Pedagogical Approach

The next two subsections will discuss two curricular issues that may have attenuated the impact of the training. The first concerns behavioral objectives; the second, closely related issue, concerns opportunities for trainees to learn and practice specific SuperLeadership behaviors.

Inadequate specification of behavioral objectives. Goldstein (1986) notes that an important outcome of needs assessment is behavioral objectives for the eventual training program. Besides serving as a foundation for curriculum design and criterion development, behavioral objectives also "communicate to the learner what he is expected to be able to do when he finishes the program" (Goldstein, 1986, p. 59). Recall that in the present experiment, the behavioral objectives for the training program were established a priori based on theoretical considerations.

Regardless of whether the SuperLeadership trainees received formal behavioral objectives per se, Goldstein's observations suggest a broader question: To what extent did trainees understand how to behave as SuperLeaders? The Manz and Sims (1991) leadership archetype model received considerable treatment as an organizing framework for the training, particularly during the first day. However, it seems plausible that the impact of the training viz-a-viz SuperLeadership should be heightened to the extent that the training highlighted specific SuperLeader behaviors (e.g., the a priori SuperLeadership dimensions).

Trainees in Session I did not receive a condensed review of specific SuperLeader behaviors with detailed discussion of each behavior. However, they were provided with an overview of SuperLeadership and were given a copy of Manz & Sims (1990), which included tables listing several specific SuperLeader behaviors. In Session II, besides receiving the book, the last two hours of training were devoted to presenting and discussing key SuperLeader behaviors. As part of this presentation, trainees received a one-page handout listing nine behavioral "Keys to SuperLeadership," reproduced as Appendix 6-2. Working from this handout, a listing of specific SuperLeader behaviors, an assistant described each SuperLeader behavior to the trainees. The trainer then demonstrated some of these key behaviors by role-playing an illustrative leadership situation with a volunteer trainee. In an attempt to further increase the behavioral specificity of the training, participants in both follow-up sessions also received the handout.

Conger (1992) has categorized leadership training programs into four types, two of which are of interest here. Conceptual understanding programs use case studies to illustrate applications of an initial model of the leadership process. Skill building programs focus on specific leadership skills and offer opportunities for trainees to practice the skills and plan their application in the workplace. Conger uses these categories as heuristics only; he does not evaluate the relative effectiveness of these different approaches to leadership training. While the SuperLeadership training can be described as a mix of the conceptual and skill building approaches, it seems clear that the training generally leaned toward the conceptual.

The training offered a general introduction to SuperLeadership: Extensive classroom time was not devoted to discussing and practicing specific SuperLeader behaviors. Consistent with the broad philosophy of SuperLeadership, the post-hoc interviews found that two major messages were conveyed by the training: employee empowerment and teamwork. Both of these themes are central to SuperLeadership and were strongly emphasized in the training. However, both also tended to be treated rather generally.

When responding to general questions about the training, interviewees provided positive feedback of the sort mentioned at the beginning of this chapter. In later interviews, an attempt was made to elicit more detailed feedback about the training by directly probing interviewees about whether they knew "what to do to be a SuperLeader." This question elicited mixed responses. Trainees frequently responded that they felt the training provided enough specifics concerning SuperLeader behavior. One trainee, for example, said, "we needed more examples, but generally I knew what to do." Another trainee focussed directly on the teamwork aspect of the training, saying,

> The course gave me a better structure for [encouraging teams] than I had before. It was a lot more than 'gee whiz' stuff: it really helped. And I felt I got enough specifics as to how to make things happen.

However, other trainees perceived a need for greater specificity in the training. After receiving the Keys handout, for example, two Session I senior managers commented that "this is what we wanted all along: something to hang onto." Responding to the probe about specific knowledge of SuperLeader behavior, a Session II trainee reported, "I didn't get a good idea of what to do. I thought the [Keys] should have been brought out earlier."

It must be acknowledged that there is a fine line between specific probes for information in an interview and "leading questions." In fact, one trainee reacted against what he perceived to be fault-finding in the interview, saying "your question leads me to give you negative comments, but I heard many positive comments." It is also important to reemphasize that trainees generally considered the training appropriate and useful. Furthermore, none of the interviewees directly noted a lack of behavioral specificity when responding to general "fault-finding" questions like "what was missing from the training?" Instead, responses typically related to general issues of style and content.

Trainee comments during the training and the post-experiment interviews do not definitively resolve the question of whether trainees perceived a lack of behavioral specificity and, if so, whether this affected their ability to implement SuperLeadership. However, recall that the criterion measures were assessing specific behaviors, including SuperLeadership behaviors. To the extent that specificity was lacking in the training, general training effects may have been difficult to detect with the targeted measures used for validation.

Inadequate opportunities to develop SuperLeadership skills. Related to the issue of behavioral specificity are opportunities for trainees to develop SuperLeadership skills in the classroom. It is possible that the training discussion, exercises, book, the handout were successful in highlighting relevant skills. Still, trainees may not have known how to actually implement these skills in the transfer setting. Goldstein and Sorcher (1974) advocated behavioral modelling to provide behavioral specifics along with opportunities for trainees to actually see a behavior and later to practice the behavior with feedback.

Goldstein and Sorcher viewed behavioral modelling as an alternative to conventional approaches to management training, which exhort managers to change attitudes without providing specific strategies for enacting attitude change through changes in behavior. Behavioral modelling has recently received a great deal of attention and has been found to be an effective approach to training of interpersonal skills, including leadership (Goldstein, 1986; Bass, 1990; Burke & Day, 1986; Latham, 1991).

Behavioral modelling is not a panacea for leadership training: A variety of other techniques can also be effective (c.f., Bass, 1990; Goldstein, 1986). Regardless of the technique used, however, behavioral modelling suggests that training effects can be enhanced by specifying terminal behavior sequences, modelling behavior so that trainees can watch sequences unfold, and offering opportunities for trainees to practice behavior in a structured classroom environment.

The pedagogical approach used by the trainer included elements of behavioral modelling such as modelling and role-play. Modelling, primarily through videotape, was used to illustrate different approaches to leadership through modules like the <u>Verbal Behavior and Feedback Scenarios</u> (Transactor; Appendix 2-1, IC1) the video portion of the <u>Leadership Challenge Case</u> (Strongman, Transactor, and Visionary Hero; Appendix 2-1, IB1), and Working Smarter, Not Harder (SuperLeader; Appendix 2-1, IF). Role-play was used primarily in two exercises: the Listening Exercise (Appendix 2-1, IC3), which emphasized active listening skills, and the New Truck Exercise (Appendix 2-1, IIB), which taught trainees how to facilitate compromise and consensus in a group. The New Truck Exercise also included specific behavioral suggestions for reaching group consensus.

Recall that a behavioral modelling-like approach to SuperLeadership skill training was used late in Session II. Perhaps the training effect might have been strengthened if techniques such as specifying, modelling, and rehearsing leader behavior were applied more broadly--particularly in conjunction with detailed discussion of specific SuperLeader behaviors. Such an approach would have amounted to an extension of the existing techniques used in training.

Summary

The curriculum and subsequent trainee comments suggest that the training provided a useful, appropriate overview of SuperLeadership as a philosophy: general themes of empowerment and teamwork were clearly communicated by the training and were received by the trainees. Perhaps the training intervention might have been stronger with greater development of specific SuperLeadership skills. Under optimal experimental and environmental conditions, it is likely that the training would have still have produced some significant effects. However, several problems with the research have already been mentioned. As will be clear in a moment, the climate for transfer in the host organization was also far from ideal.

The Climate for Transfer in the Host Organization

The discussion so far has focused on research and training issues that may have contributed to a lack of apparent change. However, impediments to change may also have been introduced by the organizational setting for the training and research. This section will discuss two aspects of the transfer setting that may have attenuated the impact of the training: the stress of down-sizing and the introduction of a new performance appraisal system.

Stress in the Host Organization

Organizational stress--specifically, threats of reductions-in-force (RIFs)--was always lurking in the background but dramatically came to a head after the research had begun. Stress in the host, whose products and services were heavily defense-related, was particularly intense due to basic structural changes in the U.S. economy following the end of the Cold War. The severe, permanent implications of these changes for the host produced a level of stress bordering on stark fear--fear that was almost palpable even to the research team. Uncertainty concerning leadership at the top of the organization only compounded this fear: the CEO of the parent corporation, under fire for the duration of his tenure, resigned toward the end of the study. Furthermore, many members of the host organization expressed concern, even resentment, at what they perceived as ineffective leadership at the top. During the post-hoc interviews, trainees volunteered many comments concerning how organizational stress affected their ability to implement the training. On balance, these comments suggested that the threat of RIFs produced a hostile environment for training transfer.

Stress as a distraction for the participants and their direct-reports. The worsening business situation in the company complicated almost every aspect of the participants' work lives, including their leadership roles. Most basically, the trainees were affected by the same morale crisis that confronted their direct-reports. One interviewee summarized the numbing effect of organizational stress when s/he said, "There is a lot of pressure in our company and the U.S. today. It's hard to motivate others when you are having trouble staying motivated yourself." Other interviewees elaborated the difficulties of applying the training under the constant threat of layoffs. One mentioned that "when you are in a crisis like we are, you tend to react rather than proact. And that's a difficult time to make these changes." Another trainee commented at greater length:

> The organizational chaos [of the RIFs] has hurt a lot. I stepped back from trying new things [like SuperLeadership] and basically focused on morale. Frankly, I'm in reactive mode. It's hard for me to push the idea that people need to be self-leading and self-motivating when the environment is beating the life out of them.

Clearly, uncertainty made change of any sort--including the transition to SuperLeadership--difficult for the trainees. Furthermore, subordinates may have faced even greater uncertainty than the trainees because they had even less direct access to information concerning top management's intentions for the firm. The results of the job satisfaction portion of the subordinate questionnaire mirrored conditions at the host site. Recall from Table 5-6 that subordinate satisfaction with job security was the only satisfaction dimension that fell below the mid-point of the scale. Responses on the job security dimension fell considerably below the levels of satisfaction reported for pay, supervision, and the job overall.

The impression left by the interviewees was that uncertainty among subordinates was itself a major source of stress for trainees. Comments concerning subordinates were too numerous to recount here in any detail, but one interviewee captured the difficulty of applying the training in the following statement:

> I don't know if anybody has a clue about how to launch new ideas that make people stretch when you are working in an environment that makes people retreat--retreat from new ideas, retreat from each other. If I was working in the environment that we had two years ago, it wouldn't have been a problem. But it was just impossible the way things are now.

Many comments during the interviews suggested that organizational stress may have prevented participants from fully implementing the ideas they gained from the training. An historical parallel to the conditions facing the present study can be found in the pioneering field experiments of Roethlinsberger and Dickson (1939) at Western Electric's Hawthorne works. Unfortunately for the research team, the Hawthorne field experiments occurred during the onset of the Great Depression. One of these experiments was a two-year evaluation of the productivity effects of wage incentives among employees who produced mica chips for electrical insulation. The researchers noted a persistent decline in productivity during the second year of observation that failed to respond to their experimental intervention. They attributed this decline to "fears and anxieties" about job security that "completely overshadowed the experimentally introduced changes" (p. 153). Consequently, a year of observational data was lost.

Roethlinsberger and Dickson dated the productivity decline in the Mica Splitting Test Room to the onset of rumors concerning impending transfers and layoffs. Like Hawthorne, rumors of possible RIFs were rampant at the host of the present study. Unfortunately, also like Hawthorne, these rumors were correct. Although they have been criticized for failing to fully acknowledge the effects of economic conditions on their research (Landsberger, 1958), Roethlinsberger and Dickson provided an early illustration of how difficult economic times can derail carefully planned field experimentation.

Stress as a fundamental impediment to SuperLeadership behavior. According to Manz and Sims (1990), SuperLeaders tend to recede into the background as their nominal "followers" begin to assume more responsibility for self-leadership. However, the environment in the host may have erected a psychological barrier to the important process of surrendering direct control: As the "body count" escalated through successive waves of RIFs, trainees understandably felt pressure to visibly demonstrate their indispensability to the organization. This may have promoted a hands-on, take-charge stance that is incompatible with the spirit and practice of SuperLeadership. Perhaps unintentionally, one interviewee captured these pressures when s/he off-handedly commented that "you tell me that I don't have to manage so much. So I don't and then I'm on a list to be fired."

Interviewees were surprisingly perceptive, articulate, and candid about all aspects of their lives in the host organization as employees and leaders. Their appraisals of the effects of downsizing on the host's leadership culture were no exception. One interviewee, for example, provided a thumbnail ethnography that frankly portrayed SuperLeadership as a losing battle under present conditions. S/he illustrated how the philosophy of SuperLeadership conflicts directly with the need for self-protection in a contracting corporation:

> The central message [of the training] is leading others to lead themselves. . . . SuperLeaders aren't heros, they are hero-makers. That's all well and good, but that's not our culture. When 1800 people

are being laid off every six months based on performance, there is an inherent conflict: The atmosphere rewards a high profile and getting personally involved in everything, not in recognizing people who support others. The divisions manager [who spoke to the class] didn't come into the training and say "I'm going to give an award to people who facilitate others."

At a policy level, the introduction of strict budgetary controls may also have tended to conflict with SuperLeadership. In an attempt to control expenses, the host organization introduced a "budget czar" system for approving expenditures. Under this system, senior executives were required to sign off on expenditures of more than a certain amount. Although it was successful in reducing expenses, this system was uniformly disliked throughout the host--by those required to approve expenditures no less than by those who had to submit expense proposals for senior review. Besides adding bureaucracy, this system introduced additional formal top-down controls that seem to conflict with the philosophy of the training.

<u>A New Performance Appraisal System</u>

Another potentially significant development in the host organization, closely related to the stress of downsizing, was discovered serendipitously during the post-experiment interviews. This development had not previously been known to the researchers. After the training in July, 1992, the host introduced a new performance appraisal system that emphasized "metrics" for quantifying the performance of employees throughout the organization. The specificity of this new system, which was explicitly evaluative rather than descriptive, may have directly conflicted with the hands-off approach of SuperLeadership. One interviewee, for example, commented that, in practice, the performance appraisal system requires managers to "know everything about what people [who report to them] are doing. I had to micro-manage because I knew I would be quizzed." Another said,

> I think the metrics override the fact that I'd really like to empower this person to do whatever he can to help us meet our strategic plans. I think we are going overboard on metrics and that creates conformity. And SuperLeadership is more rebel-oriented.

Perhaps more importantly, the unfortunate timing of new performance appraisal system--introduced shortly before major RIFs in the host organization--may only have heightened existing tensions and reinforced natural tendencies towards individual self-protection. The comments of one interviewee suggested that the new system may have been broadly perceived as threatening, particularly in the present climate of the firm:

> One of the problems with the [new performance appraisal system] is that they call it a coaching tool. But the fact is that people are having numbers assigned to them. And they know it. And when the next RIF comes, the people at the bottom are going to go.

The new, metric-oriented performance appraisal system emerged relatively late in the project as yet another wild-card. Although its effects on training transfer are unclear, scattered trainee comments suggest that the new system may have combined with existing stress in the host organization to further inhibit implementation of SuperLeadership.

Summary

Trainees reported that their ability to implement the training was hampered by the difficult business conditions facing the host organization. Crisis facing the host clearly had a distracting effect on the trainees and their direct-reports. As even the trainees observed, organizational stress may have been a strong inhibitor of training transfer. Given the conditions that emerged during the research, it is questionable whether any isolated training intervention could have produced measurable change at this time in the firm's history.

An Application of Generalizability Analysis

Alone or in concert, the problems discussed above may have contributed to the lack of apparent behavioral change. A relatively recent statistical technique, generalizability analysis, was applied to estimate the cumulative effect of some of these problems on an issue that is central to the present experiment's ability to detect behavioral change: reliability of measurement (Cardinet, Tourneur, & Allal, 1976; Crocker & Algina, 1986). Before discussion turns to generalizability analysis, first recall that the factor clarity of the questionnaires supported their construct validity. In addition, high coefficient alphas--often reaching into the .80s and .90s--offered strong evidence of internal consistency reliability for the questionnaire variables (see Chapter IV). Furthermore, the James procedure suggested within-unit agreement among subordinates.

Alpha analysis indicated that the behavioral questionnaires, considered alone, reliably measured the behavioral constructs they were designed to capture. However, it is also the case that factors with the experiment besides the questionnaires could have adversely affected the reliability with which behavior was actually measured in the field. Some of these problems, discussed above, will be revisited in a moment. For now, note that there is an important distinction between the reliability of the questionnaires, the focus of alpha analysis in Chapter IV, and the reliability of measurement in the field--the reliability of the questionnaires in actual use. In turn, the reliability of measurement (reflecting the reliability of the questionnaires and other factors discussed below) has implications for the extent to which a training effect could have been detected.

Alpha analysis conducted in Chapter IV was important for providing a touchstone estimate of the upper-limit to measurement reliability set by the questionnaires themselves: measurement could not have been more reliable in the present experiment than the reliability of the questionnaires per se. Generalizability analysis, however, extends beyond the core reliability of the questionnaires to consider the broader question of reliability of measurement. Like coefficient alpha, the reliability (*G*) coefficient produced by generalizability analysis takes account of the reliability of the questionnaires. However, *G* also reflects factors in addition to the questionnaires that could have adversely affected the reliability of measurement such as sample size and homogeneity. In the present application of generalizability analysis, G can be interpreted as an estimate of measurement reliability at the participant-defined unit level in the field. As a description of reliability, G reflects the extent to which variance in behavior ratings by subordinates across the participant-defined work groups captured true variance in behavior across the units. G, which has an upper limit of one, is interpreted like any other reliability index.

Generalizability analysis, an extension of analysis of variance (ANOVA), was performed on the aggregated time 1 LSQII-sub (including effectiveness), SLQ, and CBQ data to estimate the reliability with which leadership, self-leadership, and citizenship behaviors were actually measured in the field. Table 6-1 presents G coefficients for each behavior dimension along with key components for the generalizability analysis (to be discussed below).

To compute the G coefficients, separate one-way ANOVAs were first computed for time 1 subordinate responses in each dimension on the questionnaires. Each ANOVA included all participant-defined work units in the training and comparison conditions. The resulting ANOVAs, one for each behavioral dimension, were a completely randomized (CR) design. In this design, subordinate ratings for each dimension were the dependent variables for each ANOVA, participant i.d. was the blocking factor,

Table 6-1

Time 1 Generalizability Coefficients for Aggregated Dimensions

Cluster Dimension	(1) TRU_{ms} (df)	(2) ERR_{ms} (df)	(3) n per unit	(4) G	(5) Explained Variance
I. Leadership Strategies Questionnaire, Subordinate Report (LSQ-sub)					
Strongman					
Aversive Behavior	.1644 (71)	.5022 (319)	5.4306	.6400	.4096
Assigned Goals	.0237 (71)	.5561 (319)	5.4306	.1877	.0352
Instruction and Command	.0729 (71)	.4469 (319)	5.4306	.4698	.2207
Transactor					
Participative Goals	.0601 (71)	.5183 (319)	5.4306	.3866	.1494
Contingent Material Reward	.0710 (71)	.7915 (318)	5.4167	.3271	.1070
Contingent Personal Reward	.0618 (71)	.7480 (319)	5.4306	.3096	.0959
Contingent Reprimand	.0722 (71)	.4591 (319)	5.4306	.4608	.2123
Visionary Hero					
Challenge to Status Quo	.2369 (71)	.6051 (319)	5.4306	.6801	.4626
Vision	.0571 (71)	.6417 (319)	5.4306	.3258	.1061
Idealism	.1003 (71)	.5267 (318)	5.4167	.5077	.2578
Stimulation and Inspiration	.0722 (71)	.7108 (319)	5.4306	.3554	.1263
SuperLeader					
Self-Reward	.0062 (71)	.4424 (319)	5.4306	.0708	.0050
Teamwork	.0026 (71)	.5411 (316)	5.3889	.0250	.0006
Independent Action	.0314 (71)	.5179 (318)	5.4167	.2471	.0611
Opportunity Thought	.0690 (71)	.4873 (319)	5.4306	.4348	.1891
Mean G = .36					
II. Self-Leadership Questionnaire, Subordinate Report (SLQ)					
Self-Leadership					
Independent Action	.0567 (71)	.2171 (318)	5.4167	.5857	.3430
Efficacy	.0195 (71)	.2030 (318)	5.4167	.3422	.1171
Teamwork	.0230 (71)	.4187 (314)	5.3611	.2273	.0517
Self-Reward	.0314 (71)	.6115 (318)	5.4167	.2177	.0474
Self-Goal Setting	.0396 (71)	.3591 (318)	5.4167	.3741	.1399
Natural Reward	.0000 (71)	.3026 (318)	5.4167	.0000	.0000
Opportunity Thought	.0000 (71)	.2903 (318)	5.4167	.0000	.0000
Self-Observation	.0065 (71)	.3042 (315)	5.3750	.1032	.0106
Mean G = .23					

(table continues)

Cluster Dimension	(1) TRU$_{ms}$ (df)	(2) ERR$_{ms}$ (df)	(3) n per unit	(4) G	(5) Explained Variance
III. Citizenship Behavior Questionnaire, Subordinate Report (CBQ)					
Organizational Citizenship Behavior					
Interpersonal Support	.0176 (71)	.4013 (305)	5.2361	.1872	.0530
Courtesy	.0164 (71)	.4133 (305)	5.2361	.1719	.0296
Civic Virtue (News)	.0026 (71)	.4530 (305)	5.2361	.0296	.0009
Counterproductive Behavior					
Unreliability	.0374 (71)	.3798 (301)	5.1806	.3381	.1143
Complaining	.0282 (71)	.5295 (301)	5.1806	.2161	.0467
Mean G = .19					
IV. Effectiveness, Subordinate Report					
Trainee Effectiveness	.1572 (71)	.6981 (318)	5.4167	.5494	.3019

and the within-unit mean square (ERR_{ms}, Table 6-1, Column 2) was treated as error. (See Kirk, 1982, p. 141 for sample CR ANOVA table with expected mean squares for between- and within-block components.) The true (between-unit) variance for each dimension (TRU_{ms}, Table 6-1, Column 1) was derived by removing error variance (ERR_{ms}) from the between-unit expected mean squares. G was then computed using the reliability formula below. This formula is based on classical test theory, which defines reliability as the ratio of true variance to observed variance (Cardinet et al., 1976):

$$\underline{G} = \frac{TRU_{ms}}{TRU_{ms} + (ERR_{ms}/n)}$$

In the above equation, $\underline{TRU_{ms}}$ (Table 6-1, Column 1) is between-unit variance for each dimension after error variance has been removed; $\underline{ERR_{ms}}$ (Table 6-1, Column 2) is within-unit variance for each dimension; $\underline{n}$ is the average number of subordinates per unit providing data on each dimension (Table 6-1, Column 3). The resulting reliability (G) coefficients for each behavioral dimension are presented in Column 4 of the table.

Coefficient alpha considers only the internal consistency reliability of responses on each questionnaire. In addition to the reliability of the questionnaires, however, the dimension reliabilities (G) in Column 4 include other factors affecting the reliability of measurement in the field such as sample size and homogeneity (through the ERR_{ms}/n component). Note that these dimension reliabilities range from a high of .68 to a low of 0. In general, the G reliabilities are rather low: for the LSQII-sub, the average reliability reported in Table 6-1 is .36; for the SLQ, the average is .23; for the CBQ, the average is .19; the reliability for the participant effectiveness dimension (administered as part of the LSQII-sub) is .55. Note also that in the present experiment, finding statistically significant change hinged on detecting between-unit differences related to participation in the training. The results presented in Table 6-1 suggest that measurement in this experiment may have been insufficiently reliable to capture all but large training effects.

The above reliability equation shows that reliability and, ultimately, the ability of the measures to detect a training effect, will increase as between-unit variance increases and/or within-unit (error) variance decreases. The rest of this section will revisit some of the factors discussed earlier in this chapter that may have suppressed the reliability of measurement in the present experiment.

Restricted TRU_{ms} as a Contributor to Unreliable Measurement

The numerator of the above reliability equation shows that restricted variance between units, that is, restricted TRU_{ms}, would have the effect of suppressing the reliability of measurement. George (1990) has argued that restricted between-unit variance can occur when research is conducted within a single organization, where acculturation effects are particularly strong. To extend the discussion earlier in this chapter, acculturation effects in the host organization may have restricted TRU_{ms} and, consequently, reduced reliability of measurement. In addition, it seems plausible that concerns about reductions-in-force at the time of the experiment may have had a dampening effect on the variability of behavior between groups, on the responses of subordinates to the questionnaires, or both.

Inflated ERR_{ms}/n as a Contributor to Unreliable Measurement

As shown in Table 6-1, an average of about five subordinates reported to each participant at time 1. Time-based attrition effects reduced this even further for tests of the propositions. As shown in the denominator of the reliability formula above, a larger within-unit sample size would have increased the reliability of measurement by reducing within-unit error variance ($\underline{ERR}_{ms}/n$). Greater numbers of reporting subordinates, then, would have tended to average out within-unit differences in perception. Had larger units been available, reliabilities would have increased. For purposes of proposition testing, error inflation due to small within-unit sample size might have been compounded by within-unit individual differences in responding to the questionnaires resulting from subordinate desire for self-leadership.

Summary

Generalizability analysis reveals relatively low measurement reliabilities for the behavior dimensions considered in the present experiment. The measurement unreliability suggested by generalizability analysis, which was only possible to conduct once the research was well underway, is a direct explanation for the lack of apparent behavioral change. The most parsimonious explanation for unreliable measurement, in turn, is probably homogeneity within the host organization and within-unit sample size. The generalizability study suggests that a strong training effect might have been necessary to produce statistically significant evidence of behavioral change. Additional research and climate-related problems, possibly including the time lag, the content relevance of the questionnaires to the training, the climate for transfer, and perhaps other factors, might have compounded the challenge of detecting behavioral change.

Conclusions and Directions for Future Research

This research demonstrates all that can go right--and wrong--with field experimentation. On the positive side, participants in the training and research were uniformly receptive, facilitative, supportive, and enthusiastic. The host organization permitted a great deal of intrusion by the research team. Furthermore, human resources personal offered critical support services throughout the study: at every turn, they responded rapidly and effectively to requests for logistical support. The size of the host, combined with the host's genuine interest in SuperLeadership and the research enterprise generally, produced an environment that was ideal in many ways. Unfortunately, conditions in the organization worsened dramatically during the experiment. Frankly, the research team was saddened by the effects of staff reductions on personnel throughout the organization, many of whom had become friends by the end of the project.

The broad lack of behavioral change reported in this experiment probably resulted from a combination of many factors, some of which were discussed in this chapter. The turbulent environment was certainly a critical, unanticipated limiting condition that alone might explain the results. Aspects of the research and training may also have contributed to overall non-significance.

Despite the findings of this research, SuperLeadership (Manz & Sims, 1989, 1990, 1991) still holds promise as a technique to encourage proactive, responsible employee autonomy that will be critical for corporate competitiveness in the global marketplace. The promise of SuperLeadership stems from two key strengths. First, it incorporates a range of leadership and self-management strategies whose efficacy has been empirically demonstrated in past research. Second, as developed by Manz and Sims, SuperLeadership is pragmatic, prescriptive, and behaviorally specific: it includes specific behaviors with potential for broad application by managers in a range of settings.

The ambiguous results from the present experiment suggest several avenues for future research. An obvious starting point is replication: The present experiment might be repeated in a more stable organization. SuperLeadership fundamentally changes traditional relationships between managers and employees. As a consequence, the transition to employee self-leadership is itself likely to be somewhat stressful and, to many first-line supervisors and middle-managers, perhaps even threatening. A foundation of relative stability would greatly enhance the ability of all organizational members to negotiate this difficult transition.

Future research might also adopt a qualitative strategy to induce a more comprehensive taxonomy of SuperLeader behaviors from the perspective of leaders and followers. A cross-sectional or longitudinal correlational approach might build on past research (e.g., Manz & Sims, 1987) by exploring the efficacy of different leader behaviors for promoting employee self-leadership. Future training-based experimental interventions might include modifications based on insights gained from this and other preliminary investigations. For example, behavioral measures might be modified to reflect a more elaborated SuperLeadership behavior taxonomy. Training might also be modified to take fuller advantage of SuperLeadership's behavioral specificity.

Appendix 2-1

Leadership Training Curriculum

I. SELF-LEADERSHIP/SUPERLEADERSHIP

A. Typical Warm-Up or Introductory Exercises

1. The Leader Vision Exercise

   This cognitive vision exercise is designed to explore the meaning of the word "leader" and examine some of the traditional behaviors that are expected of leaders. This exercise questions whether these traditional behaviors are the most effective for today's organizational leaders.

2. The Aircraft Carrier Captain Story

   Uses the "you finish the story" technique to present a story about a mistake made by a young sailor on an aircraft carrier and how the new captain responds to the mistake. Explores the idea that leadership involves choice--we can choose how to behave as leaders--and that leadership is symbolic, with both direct and modelling effects.

3. The Cigarette Smoking Exercise

   This exercise in one-way communication illustrates the limitations of instruction and command as a strategy for leader influence.

B. The Leadership Strategies Model

1. Leadership Challenge Case

   This case describes a failing employee and asks what the participant, as manager, should do. Discussion explores various scenarios about how to influence the employee and speculates about how alternative leadership strategies might lead to different results.

   This case is critical for introducing a core model of four leadership strategies: Strongman, Transactor, Visionary Hero, and SuperLeader. The lecturette following this case explores these four leadership strategies and their related behaviors. Each strategy is vividly illustrated by short video scenarios from movie segments.

2. Assessing Your Leadership Culture

This group exercise elicits an assessment of the host organization's leadership culture based on the four leadership strategies. The appropriateness of the leadership culture is considered in the context of the market conditions facing the organization. Options are discussed for reinforcing or, if appropriate, modifying the existing leadership culture.

C. The Transactor

1. Verbal Behavior and Feedback Scenarios

This series of video scenarios illustrates positive verbal feedback and verbal reprimand that are unconnected to performance. Participants provide analysis of verbal behavior shown in the videos. Discussion follows about when and when not to provide praise and how to reprimand an employee when performance is failing. A final video combines behaviors to illustrate positive feedback and more constructive negative feedback that are directly connected to performance.

These videos can be supplemented by role-play exercises and by a case, "Non-Compensation Rewards."

2. Communicating Through Reward and Reprimand Exercise

This group exercise vividly illustrates how verbal reward and reprimand can send specific messages that dramatically alter the behavior of followers.

3. The Listening Exercise

This short behavioral exercise illustrates the technique of active listening and allows participants to practice listening techniques. Debriefing concentrates on listening behaviors and situations when listening is especially useful and appropriate.

D. <u>The Visionary Leader</u>

Implementing Corporate Vision Exercise

This group exercise focuses on articulating corporate vision. Includes discussion of the components and behaviors of visionary leadership and considers the pros and cons of visionary leadership on a day-to-day basis at middle and lower levels of organizations.

This exercise is particularly useful when a corporate executive, perhaps even a CEO, is willing to meet with participants to discuss corporate mission and strategy.

E. <u>Self-Leadership</u>

Followership: What is it, how do you get it?

This case explores the role of followers in a highly participatory organizational system. It concentrates on the idea that followership is active, not passive, and requires that subordinates assume non-traditional roles and responsibilities. This case is used to introduce the idea of <u>self-leadership</u>, the core of a SuperLeadership system. Both behavioral and cognitive self-leadership strategies are introduced.

F. <u>SuperLeadership: Leading Others to Lead Themselves</u>

Video Case: Working Smarter, Not Harder

This true case illustrates how an executive uses SuperLeadership to bring out self-leadership in direct-report employees based on the "MacGregor" character used in Manz and Sims's book, <u>SuperLeadership: Leading Others to Lead Themselves</u>.

II. TEAMS AND TEAMWORK

A. <u>Group Decision Making</u>

Winter Survival Exercise

This decision making exercise explores conditions in which group decisions may be preferable to individual decision making.

B. Leading Group Decision Making

The New Truck Exercise

This group decision making role-play exercise is designed to explore different methods of leading groups to make a decision. It concentrates on some of the frustrations and challenges of trying to achieve consensus within a group and explores when group decisions may be preferable to individual decision making.

C. Conflict Between Groups

The Prisoner Dilemma Exercise

This interactive sequential decision making exercise is designed to illustrate natural conflict between groups and difficulties of defining when to compete versus when to cooperate. A brief "nickel auction" exercise follows.

E. Teamwork

Teamwork Assessment Exercise

This group exercise elicits discussion about the different kinds of teams that are present in the host organization. Discussion centers on the advantages and disadvantages of existing team applications and generates recommendations for improved teamwork.

F. Self-Managing Teams

The Greenfield Case

This true case explores how much responsibility management of a startup operation will decide to invest in employee work groups. This case is especially useful for examining how much confidence and trust management assumes about employees. The case debriefing offers an inside look at real self-managing teams in action.

III. FOLLOW-UP DIAGNOSIS

Semi-structured meetings of participants about once every four weeks will be used to discuss difficulties and successes of implementing ideas from the training. These meetings may use role-play to work through challenging situations.

Appendix 4-1

Leadership Strategies Questionnaire II

Items with Origins (Subordinate Report,

LSQII-sub)

Strongman

Instruction and Command

001. He/she gives me instructions about how to do my job.[1]

024. He/she provides commands in regard to my job.[1]

045. When it comes to my work, he/she gives me instructions on how to carry it out.[1]

065. He/she gives me orders about my work.[1]

Non-Contingent Reprimand

007. He/she is often displeased with my work for no apparent reason.[1]

030. I frequently am reprimanded by him/her without knowing why.[1]

051. He/she is often critical of my work, even when I perform well.[1]

Intimidation

014. He/she can be quite intimidating.[2]

036. I feel intimidated by his/her behavior.[2]

057. He/she tries to influence me through threat and intimidation.[2]

076. He/she behaves in a threatening manner.[2]

Assigned Goals

019. He/she establishes my goals for me.[1]

041. He/she establishes the goals for my work.[2]

081. He/she establishes my performance goals.[1/2]

090. He/she sets the goals for my performance.[1/2]

Transactor

Contingent Material Reward

003. He/she will recommend that I am compensated well if I perform well.[1/2]

026. He/she will recommend that I am compensated more if I perform well.[1/2]

047. His/her recommendations regarding my compensation depend on my performance.[2]

067. If I perform well, he/she will recommend more compensation.[2]

Contingent Personal Reward

010. He/she gives me special recognition when my work performance is especially good.[1/2]

032. He/she commends me when I do a better-than-average job.[1/2]

053. He/she gives me positive feedback when I perform well.[1/2]

072. When I do a job well, he/she tells me about it.[2]

Contingent Reprimand

015. He/she lets me know about it when I perform poorly.[1]

037. He/she reprimands me if my work is below standard.[1]

058. When my work is not up to par, he/she points it out to me.[1]

077. He/she reprimands me when my performance is not up to par.[1]

Interactive Goals

021. He/she works with me to develop my performance goals.[7]

043. He/she and I sit down together and reach agreement on my performance goals.[7]

083. He/she and I reach a mutual understanding regarding the goals for my work.[7]

091. He/she and I work together to decide what my performance goals should be.[7]

Visionary Hero

Vision

005. He/she provides his/her vision of our organization to me.[1]

029. He/she provides a clear vision of where we are going.[1/2]

049. He/she provides a clear vision of who and what we are.[1/2]

069. Because of him/her, I have a clear vision of our organization.[2]

Stimulation and Inspiration

012. Because of him/her, I do more than I expected I could do.[1]

034. He/she inspires me to get a lot more done than I could have if he/she were not around.[1]

055. He/she heightens my motivation to succeed.[1]

074. He/she inspires me to strive for achievements I would not normally pursue.[2]

Idealism

017. He/she has a strong conviction in his/her own beliefs and ideals.[4]

039. He/she is driven by higher purposes or ideals.[4]

060. He/she strives towards higher purposes or ideals.[4]

079. He/she has a strong personal dedication to higher purposes or ideals.[4]

Challenge to the Status Quo

022. He/she challenges established ways of doing things.[7]

008. He/she is a non-traditional type who "shakes up the system" when necessary.[7]

044. He/she is a non-traditional type who "shakes up the system" when necessary.[7] (duplicate)

064. He/she isn't afraid to "buck the system" if he/she thinks it is necessary.[7]

085. He/she is not afraid to "break the mold" to find different ways of doing things.[7]

093. He/she isn't bound by tradition when it comes to getting things done.[7]

SuperLeader

Encourages Self-Goal Setting

002. He/she urges me to define the goals myself.[1]

025. He/she actively encourages me to set goals for myself.[1]

046. He/she advises me to set goals for my own performance.[1]

066. He/she encourages me to define goals for myself.[6]

Encourages Self-Observation and Evaluation

009. He/she encourages me to judge how well I am performing.[1]

031. He/she urges me to know how my performance stands.[1]

052. He/she advises me to keep track of how well I'm doing while I work.[7]

071. He/she encourages me to keep track of my progress on tasks I'm working on.[7]

Encourages Self-Reward

020. He/she urges me to reward myself with something I like when I have successfully completed a major task.

027. He/she encourages me to treat myself to something I enjoy when I do a task especially well.

042. He/she encourages me to give myself a pat on the back when I meet a new challenge.

062. He/she urges me to reward myself for doing a good job.

082. He/she advises me to feel good about myself when I perform well.

Encourages Finding Natural Rewards

004. He/she urges me to seek out activities in my work that I enjoy doing.

028. He/she advises me to find my own favorite ways to get work done.

048. He/she encourages me to take time to do work tasks that I like to do.

068. He/she encourages me to do my work in ways that I enjoy rather than just trying to get it over with.

086. He/she urges me to do tasks at work that make me feel good about myself.

Encourages Opportunity Thought

011. He/she advises me to look for the opportunities contained in problems I face.

033. He/she encourages me to view unsuccessful performance as a chance to learn.

054. He/she urges me to think of problems at work as opportunities rather than obstacles.

063. He/she encourages me to think about eventual success rather than possible failure.

073. He/she advises me to think about how challenges at work can be met, rather than why they cannot.[7]

Encourages Efficacy Expectations

016. He/she encourages me to think I can do very well in my work.[2]

038. He/she urges me to think I am capable of high performance.[2]

059. He/she encourages me to have confidence in my ability to meet challenges at work.[7]

078. He/she advises me to expect that I will perform well.[7]

095. He/she assures me that I am capable of overcoming almost any obstacle at work.[7]

Encourages Self-Problem Solving

006. He/she encourages me to solve my own problems without being dependent on solutions from above.[1]

070. He/she encourages me to find solutions to my problems at work without his/her direct input.[7]

087. He/she advises me to solve problems when they pop up without always getting his/her stamp of approval.[7]

096. He/she encourages me to search for solutions to my problems on the job without his/her supervision.[7]

Encourages Initiative

013. He/she encourages me to take initiatives on my own.[2]

023. He/she encourages me to think of new ways of doing things on my own initiative.[5]

035. He/she provides the opportunity for me to take initiative on my own.[2]

056. He/she provides the opportunity for me to take on new responsibilities.[2]

075. He/she urges me to assume responsibilities on my own.[2]

088. He/she advises me to make improvements in how I do my work on my own initiative without being told to do so.[5]

Encourages Teamwork

018. He/she wants teamwork between me and other managers/supervisors who report to him/her.[7]

040. He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her.[7]

050. He/she advises me to work together with other managers/supervisors who report to him/her as a team.[7]

061. He/she encourages me to work together with other managers/supervisors who report to him/her.[7]

092. He/she urges me to work as a team with other managers/supervisors who report to him/her.[7]

Effectiveness

080. His/her performance is very high.[8]

084. He/she is very effective.[8]

089. He/she performs very well.[8]

094. His/her overall effectiveness is excellent.[8]

Note. Superscripts refer to the "Key to Item Origins" on the following page.

Key to Item Origins
for the LSQII

Dimension Name	Code	Origin	Origin Dimension Name	Alpha/n
Strongman				
Instruction and Command	1	Selvaggi et al. (1992)	Instruction and Commend	.91/--
Non-Contingent Reprimand	1	Selvaggi et al. (1992)	Non-Contingent Reprimand	.83/--
Intimidation	2	Ball et al. (1991)	Intimidation	.86/72
Assigned Goals	1	Selvaggi et al. (1992)	Assigned Goals	.89/--
	2	Ball et al. (1991)	Provides Goals	.89/72
Transactor				
Contingent Material Reward	1	Selvaggi et al. (1992)	Contingent Material Reward	.86/--
	2	Ball et al. (1991)	Contingent Positive Material Reward	.88/77
Contingent Personal Reward	1	Selvaggi et al. (1992)	Contingent Personal Reward	.82/--
	2	Ball et al. (1991)	Contingent Positive Personal Reward	.91/72
Contingent Reprimand	1	Selvaggi et al. (1992)	Contingent Reprimand	.79/--
Interactive Goals	7	Present Study		
Visionary Hero				
Vision	1	Selvaggi et al. (1992)	Vision	.95/--
	2	Ball et al. (1991)	Provides Vision	.91/72
	6	Manz/Sims Working Paper		
Stimulation and Inspiration	1	Selvaggi et al. (1992)	Stimulation and Inspiration	.95/--
	2	Ball et al. (1991)	Inspiration	.79/72
Idealism	4	Sims' Personal Notes		
Challenge to the Status Quo	7	Present Study		

(continues)

Dimension Name	Code	Origin	Origin Dimension Name	Alpha/n
<u>SuperLeader</u>				
Encourages Self-Goal Setting	1	Selvaggi et al. (1991)	Self-Goal Setting	.80/--
	6	Manz/Sims Working Paper		
Encourages Self-Observation and Evaluation	1	Selvaggi et al. (1991)	Self-Evaluation and Self-Criticism	.89/--
	7	Present Study		
Encourages Self-Reward	3	Manz (1992)		
	6	Manz/Sims Working Paper		
	7	Present Study		
Encourages Finding Natural Rewards	6	Manz/Sims Working Paper		
	7	Present Study		
Encourages Opportunity Thought	6	Manz/Sims Working Paper		
	7	Present Study		
Encourages Efficacy Expectations	2	Ball et al. (1991)	Encourage Self-Efficacy	.82/72
	7	Present Study		
Encourages Self-Problem Solving	1	Ball et al. (1991)	Encourage Self-Problem Solving	.69/72
	6	Manz/Sims Working Paper		
	7	Present Study		
Encourages Initiative	2	Ball et al. (1991)	Encourage Initiative	.72/71
	5	Internal Draft of Self-Leadership Survey, rev. 9/20/90		
Encourages Teamwork	7	Present Study		
<u>Effectiveness</u>				
	8	Manz (1981); Manz & Sims (1987)		

Appendix 4-2

Subordinate Questionnaire Packet

YOUR SUPERVISOR'S NAME

So that we can interpret the questionnaire for research purposes, we are providing the name of your present direct-report supervisor below. Your responses on portions of this questionnaire should be based on this supervisor only.

When the questionnaire asks you to describe your supervisor or your colleagues who report to the same supervisor, you should base your answers on the supervisor listed above.

Again, all information you provide is completely confidential. When applicable, base your answers on the supervisor listed above. If possible, please return your questionnaire in about a week using the envelope provided.

TURN THE PAGE TO BEGIN THE QUESTIONNAIRE

PART I: DESCRIBE YOUR COLLEAGUES

Statements in this section refer to other supervisors/managers at your level in your present department who also report to your supervisor. **Base your answers on the supervisor listed on the previous page.**

> **NOTE: When answering these questions, describe other supervisors/managers in your department who also report to your supervisor. Base your answers on your average impression of these supervisors/managers as a group. For the purposes of this questionnaire, these other supervisors/-managers will be referred to as your "colleagues."**

Circle the number indicating how true or how untrue you believe each statement to be, on average, of your colleagues as a group. Answer as follows:

- **1 = if the statement is definitely not true of your colleagues who also report to your supervisor;**
- **2 = if the statement is not true;**
- **3 = if the statement is neither true nor untrue;**
- **4 = if the statement is true;**
- **5 = if the statement is definitely true of your colleagues who also report to your supervisor.**

Please circle only one number. Try not to leave any questions blank.

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

My colleagues work with each other as a team	(001)	1	2	3	4	5
My colleagues have been keeping abreast of changes in the organization	(002)	1	2	3	4	5
My colleagues have always been ready to lend a helping hand to those around them	(003)	1	2	3	4	5
My colleagues have been deliberately ignoring rules and regulations	(004)	1	2	3	4	5
My colleagues are mindful of how their behavior affects other people's jobs	(005)	1	2	3	4	5
My colleagues put off projects until the last minute	(006)	1	2	3	4	5
My colleagues believe in giving an honest day's work for an honest day's pay	(007)	1	2	3	4	5

REMEMBER: DESCRIBE OTHER SUPERVISORS/MANAGERS IN YOUR DEPARTMENT WHO ALSO REPORT TO YOUR SUPERVISOR

1 = Definitely Not True   2 = Not True

3 = Neither True Nor Untrue

4 = True   5 = Definitely True

My colleagues consume a lot of time complaining about trivial matters	(008)	1	2	3	4	5
My colleagues coordinate their efforts with each other	(009)	1	2	3	4	5
The attendance of my colleagues has been above the norm	(010)	1	2	3	4	5
My colleagues look for ways to transfer out of disliked job situations	(011)	1	2	3	4	5
My colleagues help orient new people even though it is not required	(012)	1	2	3	4	5
My colleagues try to look busy doing nothing	(013)	1	2	3	4	5
My colleagues consider the impact of their actions on co-workers	(014)	1	2	3	4	5
My colleagues attend functions that are not required, but help the company image	(015)	1	2	3	4	5
My colleagues focus on what's wrong, rather than the positive side	(016)	1	2	3	4	5
My colleagues get away from the job by calling in sick when they are not really sick	(017)	1	2	3	4	5
My colleagues make frequent and/or long trips to the water fountain, vending machines, or restroom to avoid work	(018)	1	2	3	4	5
My colleagues willingly help others who have work-related problems	(019)	1	2	3	4	5
My colleagues resist the influence of their supervisor	(020)	1	2	3	4	5
My colleagues try to avoid creating problems for co-workers . .	(021)	1	2	3	4	5
My colleagues let others do the work for them	(022)	1	2	3	4	5
My colleagues tend to "make mountains out of molehills"	(023)	1	2	3	4	5
My colleagues have been reading and keeping up with organization announcements, memos, etc.	(024)	1	2	3	4	5
My colleagues avoid their jobs by coming in late or leaving early	(025)	1	2	3	4	5
My colleagues work together as a team	(026)	1	2	3	4	5
My colleagues find fault with what the organization is doing .	(027)	1	2	3	4	5
My colleagues take frequent or extra long breaks to avoid doing work	(028)	1	2	3	4	5
My colleagues obey company rules and regulations even when no one is watching	(029)	1	2	3	4	5
My colleagues talk back to their supervisor	(030)	1	2	3	4	5

REMEMBER: DESCRIBE OTHER SUPERVISORS/MANAGERS IN YOUR DEPARTMENT WHO ALSO REPORT TO YOUR SUPERVISOR

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

My colleagues help others who have been absent	(031)	1	2	3	4	5
My colleagues are classic "squeaky wheels" that always need greasing	(032)	1	2	3	4	5
My colleagues take steps to try to prevent problems with other workers	(033)	1	2	3	4	5
My colleagues attend meetings that are not mandatory, but are considered important	(034)	1	2	3	4	5
My colleagues talk excessively with co-workers when they are supposed to be working	(035)	1	2	3	4	5
My colleagues work together	(036)	1	2	3	4	5
My colleagues are some of the most conscientious employees in this organization	(037)	1	2	3	4	5
My colleagues help others who have heavy work loads	(038)	1	2	3	4	5

REMEMBER: DESCRIBE OTHER SUPERVISORS/MANAGERS IN YOUR DEPARTMENT WHO ALSO REPORT TO YOUR SUPERVISOR

PART II: DESCRIBE YOUR SUPERVISOR

Statements in this section refer to your present direct-report supervisor. **Base your answers on the supervisor listed at the beginning of this questionnaire.**

Circle the number indicating how true or untrue you believe each statement to be of your supervisor. Answer as follows:

1 = if the statement is **definitely not true** of your supervisor;
2 = if the statement is **not true;**
3 = if the statement is **neither true nor untrue;**
4 = if the statement is **true;**
5 = if the statement is **definitely true** of your supervisor.

Please circle only one number. Try not to leave any questions blank.

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

He/she gives me instructions about how to do my job	(001)	1	2	3	4	5
He/she urges me to define the goals myself	(002)	1	2	3	4	5
He/she will recommend that I am compensated well if I perform well	(003)	1	2	3	4	5
He/she urges me to seek out activities in my work that I enjoy doing	(004)	1	2	3	4	5
He/she provides his/her vision of our organization to me . . .	(005)	1	2	3	4	5
He/she encourages me to solve my own problems without being dependent on solutions from above	(006)	1	2	3	4	5
He/she is often displeased with my work for no apparent reason	(007)	1	2	3	4	5
He/she is a non-traditional type who "shakes up the system" when necessary	(008)	1	2	3	4	5
He/she encourages me to judge how well I am performing	(009)	1	2	3	4	5
He/she gives me special recognition when my work performance is especially good	(010)	1	2	3	4	5
He/she advises me to look for the opportunities contained in problems I face	(011)	1	2	3	4	5
Because of him/her, I do more than I expected I could do . . .	(012)	1	2	3	4	5
He/she encourages me to take initiatives on my own	(013)	1	2	3	4	5
He/she can be quite intimidating	(014)	1	2	3	4	5
He/she lets me know about it when I perform poorly	(015)	1	2	3	4	5
He/she encourages me to think I can do very well in my work . .	(016)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR SUPERVISOR IN YOUR PRESENT DEPARTMENT

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

He/she has a strong conviction in his/her own beliefs and ideals	(017)	1	2	3	4	5
He/she wants teamwork between me and other managers/-supervisors who report to him/her	(018)	1	2	3	4	5
He/she establishes my goals for me	(019)	1	2	3	4	5
He/she urges me to reward myself with something I like when I have successfully completed a major task	(020)	1	2	3	4	5
He/she works with me to develop my performance goals	(021)	1	2	3	4	5
He/she challenges established ways of doing things	(022)	1	2	3	4	5
He/she encourages me to think of new ways of doing things on my own initiative	(023)	1	2	3	4	5
He/she provides commands in regard to my job	(024)	1	2	3	4	5
He/she actively encourages me to set goals for myself	(025)	1	2	3	4	5
He/she will recommend that I am compensated more if I perform well	(026)	1	2	3	4	5
He/she encourages me to treat myself to something I enjoy when I do a task especially well	(027)	1	2	3	4	5
He/she advises me to find my own favorite ways to get work done	(028)	1	2	3	4	5
He/she provides a clear vision of where we are going	(029)	1	2	3	4	5
I frequently am reprimanded by him/her without knowing why	(030)	1	2	3	4	5
He/she urges me to know how my performance stands	(031)	1	2	3	4	5
He/she commends me when I do a better-than-average job	(032)	1	2	3	4	5
He/she encourages me to view unsuccessful performance as a chance to learn	(033)	1	2	3	4	5
He/she inspires me to get a lot more done than I could have if he/she were not around	(034)	1	2	3	4	5
He/she provides the opportunity for me to take initiative on my own	(035)	1	2	3	4	5
I feel intimidated by his/her behavior	(036)	1	2	3	4	5
He/she reprimands me if my work is below standard	(037)	1	2	3	4	5
He/she urges me to think I am capable of high performance	(038)	1	2	3	4	5
He/she is driven by higher purposes or ideals	(039)	1	2	3	4	5
He/she advises me to coordinate my efforts with other managers/supervisors who report to him/her	(040)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR SUPERVISOR IN YOUR PRESENT DEPARTMENT

1 = Definitely Not True   2 = Not True

3 = Neither True Nor Untrue

4 = True   5 = Definitely True

He/she establishes the goals for my work	(041)	1	2	3	4	5
He/she encourages me to give myself a pat on the back when I meet a new challenge	(042)	1	2	3	4	5
He/she and I sit down together and reach agreement on my performance goals	(043)	1	2	3	4	5
He/she is a non-traditional type who "shakes up the system" when necessary	(044)	1	2	3	4	5
When it comes to my work, he/she gives me instructions on how to carry it out	(045)	1	2	3	4	5
He/she advises me to set goals for my own performance	(046)	1	2	3	4	5
His/her recommendations regarding my compensation depend on my performance	(047)	1	2	3	4	5
He/she encourages me to take time to do work tasks that I like to do	(048)	1	2	3	4	5
He/she provides a clear vision of who and what we are	(049)	1	2	3	4	5
He/she advises me to work together with other managers/-supervisors who report to him/her as a team	(050)	1	2	3	4	5
He/she is often critical of my work, even when I perform well .	(051)	1	2	3	4	5
He/she advises me to keep track of how well I'm doing while I work	(052)	1	2	3	4	5
He/she gives me positive feedback when I perform well	(053)	1	2	3	4	5
He/she urges me to think of problems at work as opportunities rather than obstacles	(054)	1	2	3	4	5
He/she heightens my motivation to succeed	(055)	1	2	3	4	5
He/she provides the opportunity for me to take on new responsibilities	(056)	1	2	3	4	5
He/she tries to influence me through threat and intimidation .	(057)	1	2	3	4	5
When my work is not up to par, he/she points it out to me . . .	(058)	1	2	3	4	5
He/she encourages me to have confidence in my ability to meet challenges at work	(059)	1	2	3	4	5
He/she strives towards higher purposes or ideals	(060)	1	2	3	4	5
He/she encourages me to work together with other managers/supervisors who report to him/her	(061)	1	2	3	4	5
He/she urges me to reward myself for doing a good job	(062)	1	2	3	4	5
He/she encourages me to think about eventual success rather than possible failure	(063)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR SUPERVISOR IN YOUR PRESENT DEPARTMENT

1 = Definitely Not True   2 = Not True

3 = Neither True Nor Untrue

4 = True   5 = Definitely True

He/she isn't afraid to "buck the system" if he/she thinks it is necessary	(064)	1	2	3	4	5
He/she gives me orders about my work	(065)	1	2	3	4	5
He/she encourages me to define goals for myself	(066)	1	2	3	4	5
If I perform well, he/she will recommend more compensation . .	(067)	1	2	3	4	5
He/she encourages me to do my work in ways that I enjoy rather than just trying to get it over with	(068)	1	2	3	4	5
Because of him/her, I have a clear vision of our organization .	(069)	1	2	3	4	5
He/she encourages me to find solutions to my problems at work without seeking his/her direct input	(070)	1	2	3	4	5
He/she encourages me to keep track of my progress on tasks I'm working on	(071)	1	2	3	4	5
When I do a job well, he/she tells me about it	(072)	1	2	3	4	5
He/she advises me to think about how challenges at work can be met, rather than why they cannot	(073)	1	2	3	4	5
He/she inspires me to strive for achievements I would not normally pursue	(074)	1	2	3	4	5
He/she urges me to assume responsibilities on my own	(075)	1	2	3	4	5
He/she behaves in a threatening manner	(076)	1	2	3	4	5
He/she reprimands me when my performance is not up to par . . .	(077)	1	2	3	4	5
He/she advises me to expect that I will perform well	(078)	1	2	3	4	5
He/she has a strong personal dedication to higher purposes or ideals	(079)	1	2	3	4	5
His/her performance is very high	(080)	1	2	3	4	5
He/she establishes my performance goals	(081)	1	2	3	4	5
He/she advises me to feel good about myself when I perform well	(082)	1	2	3	4	5
He/she and I reach a mutual understanding regarding the goals for my work	(083)	1	2	3	4	5
He/she is very effective	(084)	1	2	3	4	5
He/she is not afraid to "break the mold" to find different ways of doing things	(085)	1	2	3	4	5
He/she urges me to do tasks at work that make me feel good about myself	(086)	1	2	3	4	5
He/she advises me to solve problems when they pop up without always getting his/her stamp of approval	(087)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR SUPERVISOR IN YOUR PRESENT DEPARTMENT

1 = Definitely Not True	2 = Not True
3 = Neither True Nor Untrue	
4 = True	5 = Definitely True

He/she advises me to make improvements in how I do my work on my own initiative without being told to do so	(088)	1	2	3	4	5
He/she performs very well	(089)	1	2	3	4	5
He/she sets the goals for my performance	(090)	1	2	3	4	5
He/she and I work together to decide what my performance goals should be	(091)	1	2	3	4	5
He/she urges me to work as a team with other managers/supervisors who report to him/her	(092)	1	2	3	4	5
He/she isn't bound by tradition when it comes to getting things done	(093)	1	2	3	4	5
His/her overall effectiveness is excellent	(094)	1	2	3	4	5
He/she assures me that I am capable of overcoming almost any obstacle at work	(095)	1	2	3	4	5
He/she urges me to search for solutions to my problems on the job without his/her supervision	(096)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR SUPERVISOR IN YOUR PRESENT DEPARTMENT

PART III: DESCRIBE YOURSELF

Statements in this section of the questionnaire refer to yourself. Circle the number indicating how true or untrue you believe each statement to be of you. Answer as follows:

1 = if the statement is definitely not true of you;
2 = if the statement is not true;
3 = if the statement is neither true nor untrue;
4 = if the statement is true;
5 = if the statement is definitely true of you.

Please circle only one number. Try not to leave any questions blank.

---

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

I define the goals myself	(001)	1	2	3	4	5
I judge how well I am performing	(002)	1	2	3	4	5
I reward myself with something I like when I have successfully completed a major task	(003)	1	2	3	4	5
I seek out activities in my work that I enjoy doing	(004)	1	2	3	4	5
I work together with other managers/supervisors who report to my supervisor as a team	(005)	1	2	3	4	5
I look for the opportunities contained in problems I face	(006)	1	2	3	4	5
I think I can do very well in my work	(007)	1	2	3	4	5
I solve my own problems without being dependent on solutions from above	(008)	1	2	3	4	5
I take initiatives on my own	(009)	1	2	3	4	5
I set goals for myself	(010)	1	2	3	4	5
I know how my performance stands	(011)	1	2	3	4	5
I give myself a pat on the back when I meet a new challenge	(012)	1	2	3	4	5
I think of new ways of doing things on my own initiative	(013)	1	2	3	4	5
I find my own favorite ways to get work done	(014)	1	2	3	4	5
I view unsuccessful performance as a chance to learn	(015)	1	2	3	4	5
I think I am capable of high performance	(016)	1	2	3	4	5
I use opportunities to take initiative on my own	(017)	1	2	3	4	5
I coordinate my efforts with other managers/supervisors who report to my supervisor	(018)	1	2	3	4	5
I set goals for my own performance	(019)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

1 = Definitely Not True 2 = Not True

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

I try to keep track of how well I'm doing while I work	(020)	1	2	3	4	5
I reward myself for doing a good job	(021)	1	2	3	4	5
I take time to do work tasks that I like to do	(022)	1	2	3	4	5
I think of problems at work as opportunities rather than obstacles	(023)	1	2	3	4	5
I expect that I will perform well	(024)	1	2	3	4	5
I use opportunities to take on new responsibilities	(025)	1	2	3	4	5
I work together with other managers/supervisors who report to my supervisor	(026)	1	2	3	4	5
I define goals for myself	(027)	1	2	3	4	5
I keep track of my progress on tasks I'm working on	(028)	1	2	3	4	5
I feel good about myself when I perform well	(029)	1	2	3	4	5
I solve problems when they pop up without always getting my supervisor's stamp of approval	(030)	1	2	3	4	5
I do my work in ways that I enjoy rather than just trying to get it over with	(031)	1	2	3	4	5
I think about how challenges at work can be met, rather than why they cannot	(032)	1	2	3	4	5
I have confidence in my ability to meet challenges at work . .	(033)	1	2	3	4	5
I find solutions to my problems at work without seeking my supervisor's direct input	(034)	1	2	3	4	5
I assume responsibilities on my own	(035)	1	2	3	4	5
I treat myself to something I enjoy when I do a task especially well	(036)	1	2	3	4	5
I do tasks at work that make me feel good about myself	(037)	1	2	3	4	5
I think about eventual success rather than possible failure . .	(038)	1	2	3	4	5
I am sure that I am capable of overcoming almost any obstacle at work	(039)	1	2	3	4	5
I search for solutions to my problems on the job without supervision	(040)	1	2	3	4	5
I make improvements in how I do my work on my own initiative without being told to do so	(041)	1	2	3	4	5
I work as a team with other managers/supervisors who report to my supervisor	(042)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

NOTE: When responding to the following items, imagine your <u>ideal job</u> and <u>describe yourself in this ideal work setting</u> using the same 5-point response scale as above.

"In my ideal job. . ."

I would collaborate with other employees at my level to accomplish tasks without involving my supervisor	(043)	1	2	3	4	5
I would find solutions to my problems at work without consulting my supervisor	(044)	1	2	3	4	5
I would seek guidance from my supervisor about the appropriate standards for performance	(045)	1	2	3	4	5
I would check my ideas about improved ways of doing things with my supervisor before I implement improvements	(046)	1	2	3	4	5
I would involve my supervisor as a link for communication and coordination between me and other employees at my level . .	(047)	1	2	3	4	5
I would confer with my supervisor before making decisions on how to solve problems	(048)	1	2	3	4	5
I would define goals for myself without my supervisor's intervention	(049)	1	2	3	4	5
I would make decisions on my own initiative without involving my supervisor	(050)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

PART IV: YOUR JOB SATISFACTION

Statements in this section of the questionnaire relate specifically to how satisfied you are with several aspects of your job. Circle the number indicating how satisfied or dissatisfied you are with each aspect of your job listed below. Answer as follows:

1 = if you are **very dissatisfied** with this aspect of your job;
2 = if you are **slightly dissatisfied;**
3 = if you are **neutral** about this aspect of your job;
4 = if you are **slightly satisfied;**
5 = if you are **very satisfied** with this aspect of your job.

Please circle only one number. Try not to leave any questions blank.

---

1 = Very Dissatisfied   2 = Slightly Dissatisfied

3 = Neutral

4 = Slightly Satisfied   5 = Very Satisfied

My job as a whole	(001)	1	2	3	4	5
The amount of personal growth and development I get in doing my job	(002)	1	2	3	4	5
The amount of pay and fringe benefits I receive	(003)	1	2	3	4	5
The amount of job security I have	(004)	1	2	3	4	5
The people I talk to and work with on my job	(005)	1	2	3	4	5
The degree of respect and fair treatment I receive from my supervisor	(006)	1	2	3	4	5
My overall job	(007)	1	2	3	4	5
The feeling of worthwhile accomplishment I get from doing my job	(008)	1	2	3	4	5
The degree to which I am fairly paid for what I contribute to this organization	(009)	1	2	3	4	5
How secure things look for me in the future in this organization	(010)	1	2	3	4	5
The chance to get to know other people while on the job	(011)	1	2	3	4	5
The overall quality of the supervision I receive in my work . .	(012)	1	2	3	4	5
My job in general	(013)	1	2	3	4	5
The amount of challenge in my job	(014)	1	2	3	4	5
The chance to help other people while at work	(015)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR JOB SATISFACTION

PART V: BACKGROUND INFORMATION

This section will be used to produce a general description of the participants in this research. Like all of your responses today, your responses to these questions are entirely confidential.

These questions can be answered quickly and will be helpful to the research for general descriptive purposes. We would appreciate it if you could take a moment to answer them. However, if you would prefer not to answer these questions, you may skip them.

001. What is your age to the nearest year?

_____ years

002. What is your gender?

(1) _____ male
(2) _____ female

003. What is your highest (present) level of formal education?

(1) _____ grammar school
(2) _____ some high school
(3) _____ high school graduate or equivalent
(4) _____ some college, craft, or technical training
(5) _____ graduated from 2-year college (associate degree or equivalent)
(6) _____ graduated from 4-year college (bachelor's degree)
(7) _____ some post-college training
(8) _____ master's degree or post-college professional degree
(9) _____ Ph.D.

004. How long have you worked for Westinghouse to the nearest year?

_____ years

005. How long have you reported to your present supervisor (as listed on your data sheet, corrected if necessary)?

(1) _____ less than 3 months
(2) _____ at least 3 months but less than 6 months
(3) _____ at least 6 months but less than 1 year
(4) _____ at least 1 year but less than 2 years
(5) _____ at least 2 years but less than 5 years
(6) _____ at least 5 years but less than 10 years
(7) _____ more than 10 years

PLEASE TURN TO THE NEXT PAGE FOR AN IMPORTANT NOTE

A FINAL WORD

Thank you very much for completing this follow-up questionnaire. **Please return your questionnaire to the sealed drop box in the envelope provided.**

Note that a code number appears at the bottom of this page. This code number has been assigned to you by the research team at the University of Maryland. For research purposes, it is important that we know this code number so that your responses on the follow-up questionnaire can be matched to your responses today for statistical analysis.

Some participants may not be comfortable identifying themselves even for research purposes in coded form. If you feel this way, you can remove this page and return the questionnaire without your code number. However, we would appreciate it if you would leave this code number on the questionnaire.

If you decide to leave this page, please understand that your code number will be known only to researchers at the University of Maryland and will be used only for matching purposes. Your code will never be revealed to [redacted]. Furthermore, your individual responses on this questionnaire and the follow-up questionnaire will never be seen by [redacted] or anyone other than researchers at the University of Maryland.

We appreciate your assistance. Again, thank you.

____
(code number)

Appendix 4-3

Leadership Strategies Questionnaire II

Items with Origins (Participant

Self-Report, LSQII-train)

Strongman

Instruction and Command

001. I give my subordinates instructions about how to do their jobs.[1]

024. I provide commands in regard to my subordinates' jobs.[1]

045. When it comes to their work, I give my subordinates instructions on how to carry it out.[1]

065. I give my subordinates orders about their work.[1]

Non-Contingent Reprimand

007. I am often displeased with the work of my subordinates for reasons that are not apparent to them.[1]

030. I frequently reprimand my subordinates for reasons that are not clear to them.[1]

051. I am often critical of my subordinates' work, even when they perform well.[1]

Intimidation

014. I can be quite intimidating.[2]

036. I behave in ways that make my subordinates feel intimidated.[2]

057. I try to influence my subordinates through threat and intimidation.[2]

076. I behave in a threatening manner.[2]

Assigned Goals

019. I establish my subordinates' goals for them.[1]

041. I establish the goals for my subordinates' work.[2]

081. I establish my subordinates' goals.[1/2]

090. I set goals for my subordinates' performance.[1/2]

Transactor

Contingent Material Reward

003. I will recommend that my subordinates are compensated well if they perform well.[1/2]

026. I recommend that my subordinates are compensated more if they perform well.[1/2]

047. My recommendations regarding my subordinates' compensation depend on their performance.[2]

067. If my subordinates perform well, I will recommend more compensation.[2]

Contingent Personal Reward

010. I give my subordinates special recognition when their work performance is especially good.[1/2]

032. I commend my subordinates when they do a better-than-average job.[1/2]

053. I give my subordinates positive feedback when they perform well.[1/2]

072. When my subordinates do a job well, I tell them about it.[2]

Contingent Reprimand

015. I let my subordinates know about it when they perform poorly.[1]

037. I reprimand my subordinates if their work is below standard.[1]

058. When my subordinates' work is not up to par, I point it out to them.[1]

077. I reprimand my subordinates when their performance is not up to par.[1]

Interactive Goals

021. I work with my subordinates to develop their performance goals.[1]

043. I sit down with my subordinates and reach agreement on their performance goals.[7]

083. I reach a mutual understanding with my subordinates regarding the goals for their work.[7]

091. I work together with my subordinates to decide what their performance goals should be.[7]

Visionary Hero

Vision

005. I provide my vision of our organization to my subordinates.[1]

029. I provide a clear vision of where we are going.[1/2]

049. I provide a clear vision of who and what we are.[1/2]

069. Because of me, my subordinates have a clear vision of our organization.[2]

Stimulation and Inspiration

012. Because of me, my subordinates do more than they expected they could do.[1]

034. I inspire my subordinates to get a lot more done than they could have if I were not around.[1]

055. I heighten my subordinates' motivation to succeed.[1]

074. I inspire my subordinates to strive for achievements they would not normally pursue.[2]

Idealism

017. I have a strong conviction in my own beliefs and ideals.[4]

039. I am driven by higher purposes or ideals.[4]

060. I strive towards higher purposes or ideals.[4]

079. I have a strong personal dedication to higher purposes or ideals.[4]

Challenge to the Status Quo

022. I challenge established ways of doing things.

008. I am a non-traditional type who "shakes up the system" when necessary.

044. I am a non-traditional type who "shakes up the system" when necessary. (duplicate)

064. I am not afraid to "buck the system" if I think it is necessary.

085. I am not afraid to "break the mold" to find different ways of doing things.

093. I'm not bound by tradition when it comes to getting things done.

SuperLeader

Encourages Self-Goal Setting

002. I urge my subordinates to define the goals themselves.

025. I actively encourage my subordinates to set goals for themselves.

046. I advise my subordinates to set goals for their own performance.

066. I encourage my subordinates to define goals for themselves.

Encourages Self-Observation and Evaluation

009. I encourage my subordinates to judge how well they are performing.

031. I urge my subordinates to know how their performance stands.

052. I advise my subordinates to keep track of how well they are doing while they work.

071. I encourage my subordinates to keep track of their progress on tasks they are working on.

Encourages Self-Reward

020. I urge my subordinates to reward themselves with something they like when they have successfully completed a major task.

027. I encourage my subordinates to treat themselves to something they enjoy when they do a task especially well.

042. I encourage my subordinates to give themselves a pat on the back when they meet a new challenge.

062. I urge my subordinates to reward themselves for doing a good job.

082. I advise my subordinates to feel good about themselves when they perform well.

Encourages Finding Natural Rewards

004. I urge my subordinates to seek out activities in their work that they enjoy doing.

028. I advise my subordinates to find their own favorite ways to get work done.

048. I encourage my subordinates to take time to do work tasks that they like to do.

068. I encourage my subordinates to do their work in ways that they enjoy rather than just trying to get it over with.

086. I urge my subordinates to do tasks at work that make them feel good about themselves.

Encourages Opportunity Thought

011. I advise my subordinates to look for the opportunities contained in problems they face.

033. I encourage my subordinates to view unsuccessful performance as a chance to learn.

054. I urge my subordinates to think of problems at work as opportunities rather than obstacles.

063. I encourage my subordinates to think about eventual success rather than possible failure.

073. I advise my subordinates to think about how challenges at work can be met, rather than why they cannot.

Encourages Efficacy Expectations

016. I encourage my subordinates to think they can do very well in their work.

038. I urge my subordinates to think they are capable of high performance.

078. I advise my subordinates to expect that they will perform well.

059. I encourage my subordinates to have confidence in their ability to meet challenges at work.

095. I assure my subordinates that they are capable of overcoming almost any obstacle at work.

Encourages Self-Problem Solving

006. I encourage my subordinates to solve their own problems without being dependent on solutions from above.

070. I encourage my subordinates to find solutions to their problems at work without seeking my direct input.

087. I advise my subordinates to solve problems when they pop up without always getting my stamp of approval.

096. I urge my subordinates to search for solutions to their problems on the job without my supervision.

Encourages Initiative

013. I encourage my subordinates to take initiatives on their own.

023. I encourage my subordinates to think of new ways of doing things on their own initiative.

035. I provide the opportunity for my subordinates to take initiative on their own.

056. I provide the opportunity for my subordinates to take on new responsibilities.

075. I urge my subordinates to assume responsibilities on their own.[2]

088. I advise my subordinates to make improvements in how they do their work on their own initiative without being told to do so.[5]

Encourages Teamwork

018. I want teamwork between the people who report to me.[7]

040. I advise my subordinates to coordinate their efforts with each other.[7]

050. I advise my subordinates to work with each other as a team.[7]

061. I encourage my subordinates to work together.[7]

092. I urge my subordinates to work as a team with each other.[7]

Effectiveness

080. My performance is very high.[8]

084. I am very effective.[8]

089. I perform very well.[8]

094. My overall effectiveness is excellent.[8]

Note. Superscripts refer to the "Key to Item Origins" at the end of Appendix 4-1.

Appendix 4-4

Participant Questionnaire Packet

PART I: DESCRIBE YOUR SUBORDINATES

Statements in this section of the questionnaire refer to your subordinates. Circle the number indicating how true or untrue you believe each statement to be of your subordinates. Answer as follows:

1 = if the statement is definitely not true of your subordinates;
2 = if the statement is not true;
3 = if the statement is neither true nor untrue;
4 = if the statement is true;
5 = if the statement is definitely true of your subordinates.

Please circle only one number. Try not to leave any questions blank.

---

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

My subordinates are capable of collaborating with each other to accomplish tasks without involving me	(001)	1	2	3	4	5
My subordinates are capable of finding solutions to their problems at work without consulting me	(002)	1	2	3	4	5
My subordinates need guidance from me regarding the appropriate standards for performance	(003)	1	2	3	4	5
My subordinates need to check their ideas about improved ways of doing things with me before they implement improvements . .	(004)	1	2	3	4	5
My subordinates need me to serve as a link for communication and to coordinate their actions	(005)	1	2	3	4	5
My subordinates need to confer with me before making decisions on how to solve problems	(006)	1	2	3	4	5
My subordinates are capable of defining goals for themselves without my intervention	(007)	1	2	3	4	5
My subordinates are capable of making decisions on their own initiative without involving me	(008)	1	2	3	4	5

REMEMBER: DESCRIBE YOUR SUBORDINATES

PART II: DESCRIBE YOURSELF

Statements in this section of the questionnaire refer to yourself. Circle the number indicating how true or untrue you believe each statement to be of you. Answer as follows:

1 = if the statement is definitely not true of you;
2 = if the statement is not true;
3 = if the statement is neither true nor untrue;
4 = if the statement is true;
5 = if the statement is definitely true of you.

Please circle only one number. Try not to leave any questions blank.

---

1 = Definitely Not True　　2 = Not True

3 = Neither True Nor Untrue

4 = True　　5 = Definitely True

I give my subordinates instructions about how to do their jobs	(001)	1	2	3	4	5
I urge my subordinates to define the goals themselves	(002)	1	2	3	4	5
I will recommend that my subordinates are compensated well if they perform well	(003)	1	2	3	4	5
I urge my subordinates to seek out activities in their work that they enjoy doing	(004)	1	2	3	4	5
I provide my vision of our organization to my subordinates . .	(005)	1	2	3	4	5
I encourage my subordinates to solve their own problems without being dependent on solutions from above	(006)	1	2	3	4	5
I am often displeased with the work of my subordinates for reasons that are not apparent to them	(007)	1	2	3	4	5
I am a non-traditional type who "shakes up the system" when necessary	(008)	1	2	3	4	5
I encourage my subordinates judge how well they are performing	(009)	1	2	3	4	5
I give my subordinates special recognition when their work performance is especially good	(010)	1	2	3	4	5
I advise my subordinates to look for the opportunities contained in problems they face	(011)	1	2	3	4	5
Because of me, my subordinates do more than they expected they could do	(012)	1	2	3	4	5
I encourage my subordinates to take initiatives on their own .	(013)	1	2	3	4	5
I can be quite intimidating	(014)	1	2	3	4	5
I let my subordinates know about it when they perform poorly .	(015)	1	2	3	4	5
I encourage my subordinates to think they can do very well in their work	(016)	1	2	3	4	5
I have a strong conviction in my own beliefs and ideals	(017)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

1 = Definitely Not True 2 = Not True

3 = Neither True Nor Untrue

4 = True 5 = Definitely True

I want teamwork between the people who report to me	(018)	1	2	3	4	5
I establish my subordinates' goals for them	(019)	1	2	3	4	5
I urge my subordinates to reward themselves with something they like when they have successfully completed a major task .	(020)	1	2	3	4	5
I work with my subordinates to develop their performance goals	(021)	1	2	3	4	5
I challenge established ways of doing things	(022)	1	2	3	4	5
I encourage my subordinates to think of new ways of doing things on their own initiative	(023)	1	2	3	4	5
I provide commands in regard to my subordinates' jobs	(024)	1	2	3	4	5
I actively encourage my subordinates to set goals for themselves	(025)	1	2	3	4	5
I will recommend that my subordinates are compensated more if they perform well	(026)	1	2	3	4	5
I encourage my subordinates to treat themselves to something they enjoy when they do a task especially well	(027)	1	2	3	4	5
I advise my subordinates to find their own favorite ways to get work done	(028)	1	2	3	4	5
I provide a clear vision of where we are going	(029)	1	2	3	4	5
I frequently reprimand my subordinates for reasons that are not clear to them	(030)	1	2	3	4	5
I urge my subordinates to know how their performance stands . .	(031)	1	2	3	4	5
I commend my subordinates when they do a better-than-average job	(032)	1	2	3	4	5
I encourage my subordinates to view unsuccessful performance as a chance to learn	(033)	1	2	3	4	5
I inspire my subordinates to get a lot more done than they could have if I were not around	(034)	1	2	3	4	5
I provide the opportunity for my subordinates to take initiative on their own	(035)	1	2	3	4	5
I behave in ways that make my subordinates feel intimidated . .	(036)	1	2	3	4	5
I reprimand my subordinates if their work is below standard . .	(037)	1	2	3	4	5
I urge my subordinates to think they are capable of high performance	(038)	1	2	3	4	5
I am driven by higher purposes or ideals	(039)	1	2	3	4	5
I advise my subordinates to coordinate their efforts with each other	(040)	1	2	3	4	5
I establish the goals for my subordinates' work	(041)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

1 = Definitely Not True   2 = Not True

3 = Neither True Nor Untrue

4 = True   5 = Definitely True

I encourage my subordinates to give themselves a pat on the back when they meet a new challenge	(042)	1	2	3	4	5
I sit down with my subordinates and reach agreement on their performance goals	(043)	1	2	3	4	5
I am a non-traditional type who "shakes up the system" when necessary	(044)	1	2	3	4	5
When it comes to their work, I give my subordinates instructions on how to carry it out	(045)	1	2	3	4	5
I advise my subordinates to set goals for their own performance	(046)	1	2	3	4	5
My recommendations regarding my subordinates' compensation depend on their performance	(047)	1	2	3	4	5
I encourage my subordinates to take time to do work tasks that they like to do	(048)	1	2	3	4	5
I provide a clear vision of who and what we are	(049)	1	2	3	4	5
I advise my subordinates to work with each other as a team . .	(050)	1	2	3	4	5
I am often critical of my subordinates' work, even when they perform well	(051)	1	2	3	4	5
I advise my subordinates to keep track of how well they are doing while they work	(052)	1	2	3	4	5
I give my subordinates positive feedback when they perform well	(053)	1	2	3	4	5
I urge my subordinates to think of problems at work as opportunities rather than obstacles	(054)	1	2	3	4	5
I heighten my subordinates' motivation to succeed	(055)	1	2	3	4	5
I provide the opportunity for my subordinates to take on new responsibilities	(056)	1	2	3	4	5
I try to influence my subordinates through threat and intimidation	(057)	1	2	3	4	5
When my subordinates' work is not up to par, I point it out to them	(058)	1	2	3	4	5
I encourage my subordinates to have confidence in their ability to meet challenges at work	(059)	1	2	3	4	5
I strive towards higher purposes or ideals	(060)	1	2	3	4	5
I encourage my subordinates to work together	(061)	1	2	3	4	5
I urge my subordinates to reward themselves for doing a good job	(062)	1	2	3	4	5
I encourage my subordinates to think about eventual success rather than possible failure	(063)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

4

1 = Definitely Not True   2 = Not True

3 = Neither True Nor Untrue

4 = True   5 = Definitely True

I am not afraid to "buck the system" if I think it is necessary	(064)	1	2	3	4	5
I give my subordinates orders about their work	(065)	1	2	3	4	5
I encourage my subordinates to define goals for themselves . .	(066)	1	2	3	4	5
If my subordinates perform well, I will recommend more compensation	(067)	1	2	3	4	5
I encourage my subordinates to do their work in ways that they enjoy rather than just trying to get it over with	(068)	1	2	3	4	5
Because of me, my subordinates have a clear vision of our organization	(069)	1	2	3	4	5
I encourage my subordinates to find solutions to their problems at work without seeking my direct input	(070)	1	2	3	4	5
I encourage my subordinates to keep track of their progress on tasks they are working on	(071)	1	2	3	4	5
When my subordinates do a job well, I tell them about it . . .	(072)	1	2	3	4	5
I advise my subordinates to think about how challenges at work can be met, rather than why they cannot	(073)	1	2	3	4	5
I inspire my subordinates to strive for achievements they would not normally pursue	(074)	1	2	3	4	5
I urge my subordinates to assume responsibilities on their own	(075)	1	2	3	4	5
I behave in a threatening manner	(076)	1	2	3	4	5
I reprimand my subordinates when their performance is not up to par	(077)	1	2	3	4	5
I advise my subordinates to expect that they will perform well	(078)	1	2	3	4	5
I have a strong personal dedication to higher purposes or ideals	(079)	1	2	3	4	5
My performance is very high	(080)	1	2	3	4	5
I establish my subordinates' performance goals	(081)	1	2	3	4	5
I advise my subordinates to feel good about themselves when they perform well	(082)	1	2	3	4	5
I reach a mutual understanding with my subordinates regarding the goals for their work	(083)	1	2	3	4	5
I am very effective	(084)	1	2	3	4	5
I am not afraid to "break the mold" to find different ways of doing things	(085)	1	2	3	4	5
I urge my subordinates to do tasks at work that make them feel good about themselves	(086)	1	2	3	4	5
I advise my subordinates to solve problems when they pop up without always getting my stamp of approval	(087)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

1 = Definitely Not True **2 = Not True**

3 = Neither True Nor Untrue

4 = True **5 = Definitely True**

I advise my subordinates to make improvements in how they do their work on their own initiative without being told to do so	(088)	1	2	3	4	5
I perform very well	(089)	1	2	3	4	5
I set goals for my subordinates' performance	(090)	1	2	3	4	5
I work together with my subordinates to decide what their performance goals should be	(091)	1	2	3	4	5
I urge my subordinates to work as a team with each other . . .	(092)	1	2	3	4	5
I'm not bound by tradition when it comes to getting things done	(093)	1	2	3	4	5
My overall effectiveness is excellent	(094)	1	2	3	4	5
I assure my subordinates that they are capable of overcoming almost any obstacle at work	(095)	1	2	3	4	5
I urge my subordinates to search for solutions to their problems on the job without my supervision	(096)	1	2	3	4	5

REMEMBER: DESCRIBE YOURSELF

A FINAL WORD

Thank you very much for completing this follow-up questionnaire. **Please return your questionnaire to the sealed drop box in the envelope provided.**

Note that a code number appears at the bottom of this page. This code number has been assigned to you by the research team at the University of Maryland. For research purposes, it is important that we know this code number so that your responses on the follow-up questionnaire can be matched to your responses today for statistical analysis.

Some participants may not be comfortable identifying themselves even for research purposes in coded form. If you feel this way, you can remove this page and return the questionnaire without your code number. However, we would appreciate it if you would leave this code number on the questionnaire.

If you decide to leave this page, please understand that your code number will be known only to researchers at the University of Maryland and will be used only for matching purposes. Your code will never be revealed to [redacted] Furthermore, your individual responses on this questionnaire and the follow-up questionnaire will never be seen by [redacted] or anyone other than researchers at the University of Maryland.

We appreciate your assistance. Again, thank you.

____
(code number)

Appendix 4-5

Self-Leadership Questionnaire Items

With Origins (Subordinate

Self-Report, SLQ)

Self-Goal Setting

01. I define the goals myself.[1]

10. I set goals for myself.[1]

19. I set goals for my own performance.[1]

27. I define goals for myself.[6]

Self-Observation and Evaluation

02. I judge how well I am performing.[1]

11. I know how my performance stands.[1]

20. I try to keep track of how well I'm doing while I work.[7]

28. I keep track of my progress on tasks I'm working on.[7]

Self-Reward

03. I reward myself with something I like when I have successfully completed a major task.[3/7]

12. I give myself a pat on the back when I meet a new challenge.[5]

21. I reward myself for doing a good job.[6]

29. I feel good about myself when I perform well.[6]

36. I treat myself to something I enjoy when I do a task especially well.[7]

Finding Natural Rewards

04. I seek out activities in my work that I enjoy doing.[6]

14. I find my own favorite ways to get work done.[7]

22. I take time to do work tasks that I like to do.[7]

31. I do my work in ways that I enjoy rather than just trying to get it over with.[7]

37. I do tasks at work that make me feel good about myself.[7]

Opportunity Thought

06. I look for the opportunities contained in problems I face.[6]

15. I view unsuccessful performance as a chance to learn.[7]

23. I think of problems at work as opportunities rather than obstacles.[7]

32. I think about how challenges at work can be met, rather than why they cannot.[7]

38. I think about eventual success rather than possible failure.[7]

Efficacy Expectations

07. I think I can do very well in my work.[2]

16. I think I am capable of high performance.[2]

24. I expect that I will perform well.[7]

33. I have confidence in my ability to meet challenges at work.[7]

39. I am sure that I am capable of overcoming almost any obstacle at work.[7]

Self-Problem Solving

08. I solve my own problems without being dependent on solutions from above.[7]

34. I find solutions to my problems at work without seeking my supervisor's direct input.[7]

40. I search for solutions to my problems on the job without supervision.[7]

30. I solve problems when they pop up without always getting my supervisor's stamp of approval.[7]

Initiative

09. I take initiatives on my own.[2]

17. I use opportunities to take initiative on my own.[2]

25. I use opportunities to take on new responsibilities.[2]

35. I assume responsibilities on my own.[2]

41. I make improvements in how I do my work on my own initiative without being told to do so.[5]

13. I think of new ways of doing things on my own initiative.[5]

Teamwork

18. I coordinate my efforts with other managers/supervisors who report to my supervisor.[7]

26. I work together with other managers/supervisors who report to my supervisor.[7]

42. I work as a team with other managers/supervisors who report to my supervisor.[7]

05. I work together with other managers/supervisors who report to my supervisor as a team.[7]

Note. Superscripts refer to the "Key to Item Origins" in Appendix 4-1.

Appendix 4-6

Citizenship Behavior Questionnaire Items

(Subordinate Report, CBQ)

Organizational Citizenship Behaviors

Conscientiousness

10. The attendance of my colleagues has been above the norm.

29. My colleagues obey company rules and regulations even when no one is watching.

37. My colleagues are some of the most conscientious employees in this organization.

07. My colleagues believe in giving an honest day's work for an honest day's pay.

Altruism

31. My colleagues help others who have been absent.

38. My colleagues help others who have heavy work loads.

12. My colleagues help orient new people even though it is not required.

19. My colleagues willingly help others who have work-related problems.

03. My colleagues have always been ready to lend a helping hand to those around them.

Courtesy

33. My colleagues take steps to try to prevent problems with other workers.

05. My colleagues are mindful of how their behavior affects other people's jobs.

21. My colleagues try to avoid creating problems for co-workers.

14. My colleagues consider the impact of their actions on co-workers.

Civic Virtue

34. My colleagues attend meetings that are not mandatory, but are considered important.

15. My colleagues attend functions that are not required, but help the company image.

02. My colleagues have been keeping abreast of changes in the organization.

24. My colleagues have been reading and keeping up with organization announcements, memos, etc.

Anti-Citizenship Behaviors

Avoidance or Escape from the Job as a Whole

25. My colleagues avoid their jobs by coming in late or leaving early.

17. My colleagues get away from the job by calling in sick when they are not really sick.

11. My colleagues look for ways to transfer out of disliked job situations.

Avoidance of the Work Itself

13. My colleagues try to look busy doing nothing.

22. My colleagues let others do the work for them.

06. My colleagues put off projects until the last minute.

28. My colleagues take frequent or extra long breaks to avoid doing work.

35. My colleagues talk excessively with co-workers when they are supposed to be working.

18. My colleagues make frequent and/or long trips to the water fountain, vending machines, or restroom to avoid work.

Defiance, Resistance to Authority

04. My colleagues have been deliberately ignoring rules and regulations.

20. My colleagues resist the influence of their supervisor.

30. My colleagues talk back to their supervisor.

Complaining

08. My colleagues consume a lot of time complaining about trivial matters.

23. My colleagues tend to "make mountains out of molehills."

16. My colleagues focus on what's wrong, rather than the positive side.

27. My colleagues find fault with what the organization is doing.

32. My colleagues are classic "squeaky wheels" that always need greasing.

Teamwork

09. My colleagues coordinate their efforts with each other.

36. My colleagues work together.

01. My colleagues work with each other as a team.

26. My colleagues work together as a team.

Appendix 4-7

Participant Performance Questionnaire Items

(Supervising Manager Report)

Behavioral Descriptions

____

(Supervisor Name)

Instructions: This form asks you to describe your direct-report subordinates who are participating in a leadership training program that is being conducted at Westinghouse by the University of Maryland. Please describe the frequency with which the subordinates listed below (columns) engage in the behaviors (rows) listed below. Register your responses in each intersecting box using the numbers from the response scale below. Please report only on the subordinates listed below. This information is for research purposes only. It will be used only by researchers at the University of Maryland and will not be seen by any other Westinghouse employees, including your subordinates. **Please return this questionnaire in the envelope provided by the date appearing on the cover letter.** Thank you.

Response Scale 1 = Never/Almost Never 2 = Infrequently 3 = Occasionally 4 = Frequently 5 = Always/Almost Always								
Organizing and Planning: Sets goals and priorities for maximum efficiency.								
Reaction to Problems: Identifies, analyzes, and acts upon problems in a constructive, responsible manner.								
Reliability: Performs work conscientiously and dependably.								
Adaptability: Changes behavior to meet the demands of the situation.								
Productivity: Produces a volume of work consistent with established standards.								
Quality: Performs duties accurately and effectively.								
Team Orientation: Encourages and facilitates teamwork and cooperation among subordinates.								
Delegation: Encourages subordinates to work independently; delegates important parts of assignments to subordinates.								
Subordinate Development: Develops the skills of subordinates.								

Appendix 4-8

Job Satisfaction Questionnaire Items

(Subordinate Self-Report)

Overall Job Satisfaction

01. My job as a whole

07. My overall job

13. My job in general

Growth Satisfaction

02. The amount of personal growth and development I get in doing my job

08. The feeling of worthwhile accomplishment I get from doing my job

14. The amount of challenge in my job

Pay Satisfaction

03. The amount of pay and fringe benefits I receive

09. The degree to which I am fairly paid for what I contribute to this organization

Job Security Satisfaction

04. The amount of job security I have

10. How secure things look for me in the future in this organization

Social Satisfaction

05. The people I talk to and work with on my job

11. The chance to get to know other people while on the job

15. The chance to help other people while at work

Supervision Satisfaction

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

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

---

Note. Item numbers are keyed to Section I of the participant questionnaire packet, reproduced as Appendix 4-4.

Appendix 4-9

Subordinate Desire for Self-Leadership

Questionnaire Items (Subordinate

Self-Report)

Teamwork

43. I would collaborate with other employees at my level to accomplish tasks without involving my supervisor.

47. I would involve my supervisor as a link for communication and coordination between me and other employees at my level.[1]

Self-Goal Setting

49. I would define goals for myself without my supervisor's intervention.

45. I would seek guidance from my supervisor about the appropriate standards for performance.[1]

Self-Problem Solving

44. I would find solutions to my problems at work without consulting my supervisor.

48. I would confer with my supervisor before making decisions on how to solve problems.[1]

Initiative

50. I would make decisions on my own initiative without involving my supervisor.

46. I would check my ideas about improved ways of doing things with my supervisor before I implement improvements.[1]

Note. All items adjoin the stem "In my ideal job. . . ." Item numbers are keyed to Section I of the trainee questionnaire packet, reproduced as Appendix 4-2.

[1]Item was reverse-scored.

Appendix 4-10

Manipulation Check Quiz

Post-Training Questions

Now that you have completed the training, please take a moment to answer the following questions. These questions are divided into three sections. On the left side in each section are four statements concerning leader behavior. Each of these statements corresponds to one of the leadership archetypes in the box on the right. Please <u>match</u> these statements with the leader archetypes by writing the appropriate letter on the line beside each statement. Within each section, each statement on the left corresponds most closely to <u>only one</u> of the leadership archetypes; there is exactly <u>one</u> "A," "B," "C," and "D" behavior within each section.

<u>Section I</u>

____ A leader who challenges subordinates to set their own goals

____ A leader who gives her/his subordinates precise job instructions

____ A leader who tries to inspire her/his subordinates

____ A leader who negotiates goals with her/his subordinates

A = Strongman
B = Transactor
C = Visionary Hero
D = SuperLeader

<u>Section II</u>

____ A leader who energizes followers through persuasive speech and exhortation

____ A leader who encourages subordinates to show initiative

____ A leader who uses disagreeable behavior to "keep subordinates on their toes"

____ A leader who tries to make pay raises contingent upon the subordinate's performance

A = Strongman
B = Transactor
C = Visionary Hero
D = SuperLeader

<u>Section III</u>

____ A leader who commands subordinates to pursue specific objectives

____ A leader who bases reprimands on specific subordinate behaviors

____ A leader who urges subordinates to work together as a team

____ A leader who vigorously challenges the status quo

A = Strongman
B = Transactor
C = Visionary Hero
D = SuperLeader

Appendix 5-1

Time 1/Time 2 LSQII-train

Unit-Level Intercorrelations

Key to Appendix 5-1 Intercorrelation Table:

I. Leader Behavior Cluster Dimension	LSQII-train Time 1	 (Time 2)
Strongman		
Aversive Behavior	Averse	(Xaverse)
Assigned Goals	Asgoal	(Xasgoal)
Inst. and Command	Inscom	(Xinscom)
Transactor		
Participative Goals	Ptgoal	(Xptgoal)
Contingent Material Reward	Matrew	(Xmatrew)
Contingent Personal Reward	Perrew	(Xperrew)
Contingent Reprimand	Crepnd	(Xcrepnd)
Visionary Hero		
Idealism	Idlsm	(Xidlsm)
Vision	Vision	(XVision)
Challenge to the Status Quo	Stquo	(Xstquo)
Stimulation and Inspiration	Stmins	(Xstmins)
SuperLeader		
Independent Action	Indactn	(Xindactn)
Teamwork	Tmwk	(Xtmwk)
Self-Reward	Snrew	(Xsnrew)
Opportunity Thought	Oppttht	(Xopptht)

(Table Attached)

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH [redacted]
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	AVERSE	ASGOAL	INSCOM	PTGOAL	MATREW	PERREW
AVERSE	1.0000 (31) P= .	.1985 (31) P= .284	.4190 (31) P= .019	.1006 (31) P= .590	-.1129 (31) P= .545	.1492 (31) P= .423
ASGOAL	.1985 (31) P= .284	1.0000 (31) P= .	.4264 (31) P= .017	-.0508 (31) P= .786	.0518 (31) P= .782	-.0587 (31) P= .754
INSCOM	.4190 (31) P= .019	.4264 (31) P= .017	1.0000 (31) P= .	.2143 (31) P= .247	-.1277 (31) P= .494	.1414 (31) P= .448
PTGOAL	.1006 (31) P= .590	-.0508 (31) P= .786	.2143 (31) P= .247	1.0000 (31) P= .	.4811 (31) P= .006	.4901 (31) P= .005
MATREW	-.1129 (31) P= .545	.0518 (31) P= .782	-.1277 (31) P= .494	.4811 (31) P= .006	1.0000 (31) P= .	.1574 (31) P= .398
PERREW	.1492 (31) P= .423	-.0587 (31) P= .754	.1414 (31) P= .448	.4901 (31) P= .005	.1574 (31) P= .398	1.0000 (31) P= .
CREPND	.3443 (31) P= .058	-.1222 (31) P= .512	.2886 (31) P= .115	.1095 (31) P= .558	.0813 (31) P= .664	.1853 (31) P= .318
IDLSM	.2873 (31) P= .117	-.3365 (31) P= .064	-.0409 (31) P= .827	.4170 (31) P= .020	.0993 (31) P= .595	.1978 (31) P= .286
VISION	.2095 (31) P= .258	.0755 (31) P= .686	.1614 (31) P= .386	.4544 (31) P= .010	.0926 (31) P= .620	.1877 (31) P= .312
STQUO	.0965 (31) P= .606	-.1980 (31) P= .286	-.1270 (31) P= .496	-.0310 (31) P= .869	-.0074 (31) P= .969	-.0195 (31) P= .917
STMINS	.0423 (31) P= .821	-.0633 (31) P= .735	-.1638 (31) P= .379	.1998 (31) P= .281	-.0589 (31) P= .753	.0514 (31) P= .784

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	AVERSE	ASGOAL	INSCOM	PTGOAL	MATREW	PERREW
INDACTN	.1410 (31) P= .449	-.2666 (31) P= .147	-.1451 (31) P= .436	.4969 (31) P= .004	.1287 (31) P= .490	.5127 (31) P= .003
TMWK	-.0837 (31) P= .654	-.0018 (31) P= .993	-.2557 (31) P= .165	.1102 (31) P= .555	-.0179 (31) P= .924	.3352 (31) P= .065
SNREW	.0386 (31) P= .837	-.1340 (31) P= .472	-.0264 (31) P= .888	.3620 (31) P= .045	.0607 (31) P= .746	.2890 (31) P= .115
OPPTHT	.1363 (31) P= .465	-.1504 (31) P= .419	-.0160 (31) P= .932	.0714 (31) P= .703	.0193 (31) P= .918	.0325 (31) P= .862
SUBPERF	.1056 (30) P= .579	-.1492 (30) P= .431	-.0311 (30) P= .870	-.0138 (30) P= .942	.2202 (30) P= .242	-.0551 (30) P= .772
XAVERSE	.0821 (23) P= .709	-.1147 (23) P= .602	.0863 (23) P= .695	.1863 (23) P= .395	.4980 (23) P= .016	-.1982 (23) P= .365
XASGOAL	-.1366 (23) P= .534	.3477 (23) P= .104	.2695 (23) P= .214	.1212 (23) P= .582	.3605 (23) P= .091	-.1115 (23) P= .613
XINSCOM	.2077 (23) P= .342	.2251 (23) P= .302	.4348 (23) P= .038	.2000 (23) P= .360	.3049 (23) P= .157	-.1421 (23) P= .518
XPTGOAL	.2875 (23) P= .183	.1266 (23) P= .565	.0689 (23) P= .755	.2378 (23) P= .275	-.4066 (23) P= .054	.5374 (23) P= .008
XMATREW	.4319 (23) P= .040	.2758 (23) P= .203	.2835 (23) P= .190	.0586 (23) P= .791	-.3262 (23) P= .129	.4835 (23) P= .019
XPERREW	.3053 (23) P= .157	.0068 (23) P= .976	-.0566 (23) P= .798	.0785 (23) P= .722	-.2997 (23) P= .165	.6201 (23) P= .002

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	AVERSE	ASGOAL	INSCOM	PTGOAL	MATREW	PERREW
XCREPND	.3062 (23) P= .155	.4099 (23) P= .052	.3804 (23) P= .073	-.2305 (23) P= .290	-.3063 (23) P= .155	.0949 (23) P= .667
XIDLSM	.4501 (23) P= .031	-.1326 (23) P= .546	.1302 (23) P= .554	.1275 (23) P= .562	-.3024 (23) P= .161	.5292 (23) P= .009
XVISION	.4333 (23) P= .039	.1638 (23) P= .455	.1253 (23) P= .569	.2590 (23) P= .233	-.1144 (23) P= .603	.5347 (23) P= .009
XSTQUO	.1776 (23) P= .417	-.1545 (23) P= .482	-.0106 (23) P= .962	-.1739 (23) P= .427	-.4530 (23) P= .030	.3180 (23) P= .139
XSTMINS	.2048 (23) P= .349	-.2415 (23) P= .267	-.0279 (23) P= .900	.4410 (23) P= .035	.1428 (23) P= .516	.5161 (23) P= .012
XINDACTN	.3424 (23) P= .110	.0972 (23) P= .659	.0615 (23) P= .780	.0782 (23) P= .723	-.3990 (23) P= .059	.5376 (23) P= .008
XTMWK	.2901 (23) P= .179	.1132 (23) P= .607	.0562 (23) P= .799	.0473 (23) P= .830	-.4324 (23) P= .039	.4893 (23) P= .018
XSNREW	.3158 (23) P= .142	-.3575 (23) P= .094	-.0064 (23) P= .977	.3991 (23) P= .059	.0009 (23) P= .997	.4863 (23) P= .019
XOPPTHT	.1116 (31) P= .550	-.3354 (31) P= .065	.0422 (31) P= .822	.1454 (31) P= .435	-.0308 (31) P= .869	.0553 (31) P= .768
XSUBPERF	.1973 (29) P= .305	.0365 (29) P= .851	.1512 (29) P= .434	.0925 (29) P= .633	.3229 (29) P= .088	-.0446 (29) P= .818

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH [redacted]
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	CREPND	IDLSM	VISION	STQUO	STMINS	INDACTN
AVERSE	.3443 (31) P= .058	.2873 (31) P= .117	.2095 (31) P= .258	.0965 (31) P= .606	.0423 (31) P= .821	.1410 (31) P= .449
ASGOAL	-.1222 (31) P= .512	-.3365 (31) P= .064	.0755 (31) P= .686	-.1980 (31) P= .286	-.0633 (31) P= .735	-.2666 (31) P= .147
INSCOM	.2886 (31) P= .115	-.0409 (31) P= .827	.1614 (31) P= .386	-.1270 (31) P= .496	-.1638 (31) P= .379	-.1451 (31) P= .436
PTGOAL	.1095 (31) P= .558	.4170 (31) P= .020	.4544 (31) P= .010	-.0310 (31) P= .869	.1998 (31) P= .281	.4969 (31) P= .004
MATREN	.0813 (31) P= .664	.0993 (31) P= .595	.0926 (31) P= .620	-.0074 (31) P= .969	-.0589 (31) P= .753	.1287 (31) P= .490
PERREN	.1853 (31) P= .318	.1978 (31) P= .286	.1877 (31) P= .312	-.0195 (31) P= .917	.0514 (31) P= .784	.5127 (31) P= .003
CREPND	1.0000 (31) P= .	.0348 (31) P= .852	.2346 (31) P= .204	.2916 (31) P= .111	-.2432 (31) P= .187	.2382 (31) P= .197
IDLSM	.0348 (31) P= .852	1.0000 (31) P= .	.5525 (31) P= .001	.4198 (31) P= .019	.5763 (31) P= .001	.4460 (31) P= .012
VISION	.2346 (31) P= .204	.5525 (31) P= .001	1.0000 (31) P= .	.5634 (31) P= .001	.4187 (31) P= .019	.2929 (31) P= .110
STQUO	.2916 (31) P= .111	.4198 (31) P= .019	.5634 (31) P= .001	1.0000 (31) P= .	.4597 (31) P= .009	.2250 (31) P= .224
STMINS	-.2432 (31) P= .187	.5763 (31) P= .001	.4187 (31) P= .019	.4597 (31) P= .009	1.0000 (31) P= .	.3869 (31) P= .032

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

-- Correlation Coefficients --

	CREPND	IDLSM	VISION	STQUO	STMINS	INDACTN
INDACTN	.2382 (31) P= .197	.4460 (31) P= .012	.2929 (31) P= .110	.2250 (31) P= .224	.3869 (31) P= .032	1.0000 (31) P= .
TMWK	-.0288 (31) P= .878	.2557 (31) P= .165	.1414 (31) P= .448	.3337 (31) P= .067	.5836 (31) P= .001	.5185 (31) P= .003
SNREW	-.0960 (31) P= .607	.1510 (31) P= .417	.0555 (31) P= .767	.1208 (31) P= .518	.2958 (31) P= .106	.4342 (31) P= .015
OPPTHT	.1091 (31) P= .559	.1497 (31) P= .422	.3952 (31) P= .028	.1805 (31) P= .331	.0723 (31) P= .699	.2943 (31) P= .108
SUBPERF	-.1922 (30) P= .309	.0725 (30) P= .704	-.0357 (30) P= .851	-.0410 (30) P= .830	-.0720 (30) P= .705	.0655 (30) P= .731
XAVERSE	.2151 (23) P= .324	.2193 (23) P= .315	.0108 (23) P= .961	-.0073 (23) P= .974	.0480 (23) P= .828	-.0308 (23) P= .889
XASGOAL	.2119 (23) P= .332	-.1904 (23) P= .384	.1441 (23) P= .512	-.1895 (23) P= .387	-.2699 (23) P= .213	-.2246 (23) P= .303
XINSCOM	.2416 (23) P= .267	.0231 (23) P= .917	.2047 (23) P= .349	-.1632 (23) P= .457	-.0349 (23) P= .875	-.0462 (23) P= .834
XPTGOAL	-.0885 (23) P= .688	.0711 (23) P= .747	.2357 (23) P= .279	.0769 (23) P= .727	.2036 (23) P= .352	.3226 (23) P= .133
XMATREW	.1073 (23) P= .626	-.0054 (23) P= .981	.2701 (23) P= .213	.1299 (23) P= .555	-.0173 (23) P= .938	.1007 (23) P= .647
XPERREW	.1652 (23) P= .451	.2218 (23) P= .309	.3661 (23) P= .086	.3484 (23) P= .103	.2522 (23) P= .246	.3561 (23) P= .095

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	CREPND	IDLSM	VISION	STQUO	STMINS	INDACTN
XCREPND	.3711 (23) P= .081	-.1706 (23) P= .436	.3833 (23) P= .071	.1325 (23) P= .547	-.1755 (23) P= .423	-.0447 (23) P= .839
XIDLSM	.0342 (23) P= .877	.2664 (23) P= .219	.1714 (23) P= .434	.3180 (23) P= .139	.2969 (23) P= .169	.1099 (23) P= .618
XVISION	.1043 (23) P= .636	.4646 (23) P= .026	.5825 (23) P= .004	.3055 (23) P= .156	.2995 (23) P= .165	.3970 (23) P= .061
XSTQUO	.1204 (23) P= .584	.1047 (23) P= .635	.3695 (23) P= .083	.5572 (23) P= .006	.1797 (23) P= .412	.1522 (23) P= .488
XSTMINS	.2162 (23) P= .322	.5937 (23) P= .003	.5670 (23) P= .005	.5348 (23) P= .009	.4940 (23) P= .017	.5587 (23) P= .006
XINDACTN	.0455 (23) P= .837	.1192 (23) P= .588	.2591 (23) P= .233	.1059 (23) P= .631	.1482 (23) P= .500	.2962 (23) P= .170
XTMMK	.1119 (23) P= .611	.0029 (23) P= .989	.2113 (23) P= .333	.1266 (23) P= .565	.0882 (23) P= .689	.2345 (23) P= .281
XSHREW	.2034 (23) P= .352	.3254 (23) P= .130	.1867 (23) P= .394	.2512 (23) P= .248	.0367 (23) P= .868	.3955 (23) P= .062
XOPPTHT	.1115 (31) P= .550	.4117 (31) P= .021	.3831 (31) P= .033	.3742 (31) P= .038	.2176 (31) P= .240	.1293 (31) P= .488
XSUBPERF	-.2088 (29) P= .277	.0980 (29) P= .613	.0043 (29) P= .982	-.1646 (29) P= .394	.0230 (29) P= .906	-.1166 (29) P= .547

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	TMWK	SNREW	OPPTHT	SUBPERF	XAVERSE	XASGOAL
AVERSE	-.0837	.0386	.1363	.1056	.0821	-.1366
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .654	P= .837	P= .465	P= .579	P= .709	P= .536
ASGOAL	-.0018	-.1340	-.1504	-.1492	-.1147	.3477
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .993	P= .472	P= .419	P= .431	P= .602	P= .104
INSCOM	-.2557	-.0264	-.0160	-.0311	.0863	.2695
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .165	P= .888	P= .932	P= .870	P= .695	P= .214
PTGOAL	.1102	.3620	.0714	-.0138	.1863	.1212
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .555	P= .045	P= .703	P= .942	P= .395	P= .582
MATREW	-.0179	.0607	.0193	.2202	.4980	.3605
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .924	P= .746	P= .918	P= .242	P= .016	P= .091
PERREW	.3352	.2890	.0325	-.0551	-.1982	-.1115
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .065	P= .115	P= .862	P= .772	P= .365	P= .613
CREPND	-.0288	-.0960	.1091	-.1922	.2151	.2119
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .878	P= .607	P= .559	P= .309	P= .324	P= .332
IDLSM	.2557	.1510	.1497	.0725	.2193	-.1904
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .165	P= .417	P= .422	P= .704	P= .315	P= .384
VISION	.1414	.0555	.3952	-.0357	.0108	.1441
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .448	P= .767	P= .028	P= .851	P= .961	P= .512
STQUO	.3337	.1208	.1805	-.0410	-.0073	-.1895
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .067	P= .518	P= .331	P= .830	P= .974	P= .387
STMINS	.5836	.2958	.0723	-.07[illegible]0	.0480	-.2699
	(31)	(31)	(31)	(30)	(23)	(23)
	P= .001	P= .106	P= .699	P= .705	P= .828	P= .213

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	TMWK	SNREW	OPPTHT	SUBPERF	XAVERSE	XASGOAL
INDACTN	.5185 (31) P= .003	.4342 (31) P= .015	.2943 (31) P= .108	.0655 (30) P= .731	-.0308 (23) P= .889	-.2246 (23) P= .303
TMWK	1.0000 (31) P= .	.2812 (31) P= .125	-.1001 (31) P= .592	-.3784 (30) P= .039	-.2180 (23) P= .318	-.3298 (23) P= .124
SNREW	.2812 (31) P= .125	1.0000 (31) P= .	-.0195 (31) P= .917	-.2813 (30) P= .132	-.0025 (23) P= .991	-.2198 (23) P= .314
OPPTHT	-.1001 (31) P= .592	-.0195 (31) P= .917	1.0000 (73) P= .	.3049 (72) P= .009	.1588 (60) P= .226	-.1316 (60) P= .316
SUBPERF	-.3784 (30) P= .039	-.2813 (30) P= .132	.3049 (72) P= .009	1.0000 (72) P= .	-.0201 (59) P= .880	-.1214 (59) P= .360
XAVERSE	-.2180 (23) P= .318	-.0025 (23) P= .991	.1588 (60) P= .226	-.0201 (59) P= .880	1.0000 (60) P= .	.2281 (60) P= .080
XASGOAL	-.3298 (23) P= .124	-.2198 (23) P= .314	-.1316 (60) P= .316	-.1214 (59) P= .360	.2281 (60) P= .080	1.0000 (60) P= .
XINSCOM	-.3767 (23) P= .076	.0439 (23) P= .842	.0362 (60) P= .784	.0094 (59) P= .944	.4567 (60) P= .000	.5499 (60) P= .000
XPTGOAL	.3307 (23) P= .123	.2836 (23) P= .190	.0122 (60) P= .926	-.0043 (59) P= .974	-.6785 (60) P= .000	-.2105 (60) P= .106
XMATREW	.2120 (23) P= .332	.0300 (23) P= .892	.0236 (60) P= .858	.0337 (59) P= .800	-.6193 (60) P= .000	-.1054 (60) P= .423
XPERREW	.5017 (23) P= .015	.1839 (23) P= .401	.1854 (60) P= .156	-.0027 (59) P= .984	-.5386 (60) P= .000	-.2239 (60) P= .085

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH [redacted]
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	TMNK	SNREW	OPPTHT	SUBPERF	XAVERSE	XASGOAL
XCREPND	.0163	-.1847	.3616	-.1092	-.0646	.1607
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .941	P= .399	P= .005	P= .410	P= .624	P= .220
XIDLSM	.2222	.2561	.1907	.1015	-.2912	-.2456
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .308	P= .238	P= .144	P= .444	P= .024	P= .059
XVISION	.3835	-.0004	.2326	.0427	-.2895	-.0296
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .071	P= .999	P= .074	P= .748	P= .025	P= .822
XSTQUO	.2375	.0137	.3515	.0255	-.3862	-.2600
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .275	P= .950	P= .006	P= .848	P= .002	P= .045
XSTMINS	.4662	.3195	.0875	-.0269	-.2419	-.2013
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .025	P= .137	P= .506	P= .840	P= .063	P= .123
XINDACTN	.3838	.0687	-.0554	-.0042	-.6942	-.2932
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .071	P= .755	P= .674	P= .975	P= .000	P= .023
XTMNK	.3901	.0362	-.1014	-.1092	-.6395	-.0731
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .066	P= .870	P= .441	P= .410	P= .000	P= .579
XSNREW	.1642	.6289	.0573	-.0627	-.2862	-.2987
	(23)	(23)	(60)	(59)	(60)	(60)
	P= .454	P= .001	P= .664	P= .637	P= .027	P= .020
XOPPTHT	-.2256	.1166	.5015	.1533	.2489	-.1298
	(31)	(31)	(73)	(72)	(60)	(60)
	P= .222	P= .532	P= .000	P= .199	P= .055	P= .323
XSUBPERF	-.3866	-.1489	.3199	.7583	.2390	-.0852
	(29)	(29)	(71)	(71)	(58)	(58)
	P= .038	P= .441	P= .007	P= .000	P= .071	P= .525

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH [redacted]
10:21:39 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XINSCOM	XPTGOAL	XMATREW	XPERREW	XCREPND	XIDLSM
AVERSE	.2077 (23) P= .342	.2875 (23) P= .183	.4319 (23) P= .040	.3053 (23) P= .157	.3062 (23) P= .155	.4501 (23) P= .031
ASGOAL	.2251 (23) P= .302	.1266 (23) P= .565	.2758 (23) P= .203	.0068 (23) P= .976	.4099 (23) P= .052	-.1326 (23) P= .546
INSCOM	.4348 (23) P= .038	.0689 (23) P= .755	.2835 (23) P= .190	-.0566 (23) P= .798	.3804 (23) P= .073	.1302 (23) P= .554
PTGOAL	.2000 (23) P= .360	.2378 (23) P= .275	.0586 (23) P= .791	.0785 (23) P= .722	-.2305 (23) P= .290	.1275 (23) P= .562
MATREW	.3049 (23) P= .157	-.4066 (23) P= .054	-.3262 (23) P= .129	-.2997 (23) P= .165	-.3063 (23) P= .155	-.3024 (23) P= .161
PERREW	-.1421 (23) P= .518	.5374 (23) P= .008	.4835 (23) P= .019	.6201 (23) P= .002	.0949 (23) P= .667	.5292 (23) P= .009
CREPND	.2416 (23) P= .267	-.0885 (23) P= .688	.1073 (23) P= .626	.1652 (23) P= .451	.3711 (23) P= .081	.0342 (23) P= .877
IDLSM	.0231 (23) P= .917	.0711 (23) P= .747	-.0054 (23) P= .981	.2218 (23) P= .309	-.1706 (23) P= .436	.2664 (23) P= .219
VISION	.2047 (23) P= .349	.2357 (23) P= .279	.2701 (23) P= .213	.3661 (23) P= .086	.3833 (23) P= .071	.1714 (23) P= .434
STQUO	-.1632 (23) P= .457	.0769 (23) P= .727	.1299 (23) P= .555	.3484 (23) P= .103	.1325 (23) P= .547	.3180 (23) P= .139
STMINS	-.0349 (23) P= .875	.2036 (23) P= .352	-.0173 (23) P= .938	.2522 (23) P= .246	-.1755 (23) P= .423	.2969 (23) P= .169

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
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- - Correlation Coefficients - -

	XINSCOM	XPTGOAL	XMATREW	XPERREW	XCREPND	XIDLSM
INDACTN	-.0462	.3226	.1007	.3561	-.0447	.1099
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .834	P= .133	P= .647	P= .095	P= .839	P= .618
TMWK	-.3767	.3307	.2120	.5017	.0163	.2222
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .076	P= .123	P= .332	P= .015	P= .941	P= .308
SNREW	.0439	.2836	.0300	.1839	-.1847	.2561
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .842	P= .190	P= .892	P= .401	P= .399	P= .238
OPPTMT	.0362	.0122	.0236	.1854	.3616	.1907
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .784	P= .926	P= .858	P= .156	P= .005	P= .144
SUBPERF	.0094	-.0043	.0337	-.0027	-.1092	.1015
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .944	P= .974	P= .800	P= .984	P= .410	P= .444
XAVERSE	.4567	-.6785	-.6193	-.5386	-.0646	-.2912
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .000	P= .000	P= .000	P= .000	P= .624	P= .024
XASGOAL	.5499	-.2105	-.1054	-.2239	.1607	-.2456
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .000	P= .106	P= .423	P= .085	P= .220	P= .059
XINSCOM	1.0000	-.2026	-.2102	-.3015	.2439	-.2003
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .	P= .120	P= .107	P= .019	P= .060	P= .125
XPTGOAL	-.2026	1.0000	.7401	.7141	.0333	.5852
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .120	P= .	P= .000	P= .000	P= .801	P= .000
XMATREW	-.2102	.7401	1.0000	.7144	.1111	.5097
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .107	P= .000	P= .	P= .000	P= .398	P= .000
XPERREW	-.3015	.7141	.7144	1.0000	.2016	.6868
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .019	P= .000	P= .000	P= .	P= .122	P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XINSCOM	XPTGOAL	XMATREW	XPERREW	XCREPND	XIDLSM
XCREPND	.2439	.0333	.1111	.2016	1.0000	.1226
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .060	P= .801	P= .398	P= .122	P= .	P= .351
XIDLSM	-.2003	.5852	.5097	.6868	.1226	1.0000
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .125	P= .000	P= .000	P= .000	P= .351	P= .
XVISION	.1058	.5593	.4365	.5810	.3536	.5553
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .421	P= .000	P= .000	P= .000	P= .006	P= .000
XSTQUO	-.2844	.5501	.5443	.6637	.1272	.7172
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .028	P= .000	P= .000	P= .000	P= .333	P= .000
XSTMINS	-.0469	.4205	.2950	.4755	-.0259	.3970
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .722	P= .001	P= .022	P= .000	P= .844	P= .002
XINDACTN	-.4104	.7526	.7861	.6865	.0146	.4744
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .001	P= .000	P= .000	P= .000	P= .912	P= .000
XTMWK	-.1929	.7875	.7431	.6594	.1183	.6070
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .140	P= .000	P= .000	P= .000	P= .368	P= .000
XSNREW	-.2520	.4087	.2865	.4789	-.1042	.4732
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .052	P= .001	P= .026	P= .000	P= .428	P= .000
XOPPTHT	.0412	-.0507	-.0948	-.0567	.0640	.2420
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .755	P= .700	P= .471	P= .667	P= .627	P= .063
XSUBPERF	.1788	-.0594	-.0102	-.1389	-.2347	.0737
	(58)	(58)	(58)	(58)	(58)	(58)
	P= .179	P= .658	P= .939	P= .298	P= .076	P= .583

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
10:21:40 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XVISION	XSTQUO	XSTMINS	XINDACTN	XTMWK	XSNREW
AVERSE	.4333	.1776	.2048	.3424	.2901	.3158
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .039	P= .417	P= .349	P= .110	P= .179	P= .142
ASGOAL	.1638	-.1545	-.2415	.0972	.1132	-.3575
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .455	P= .482	P= .267	P= .659	P= .607	P= .094
INSCOM	.1253	-.0106	-.0279	.0615	.0562	-.0064
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .569	P= .962	P= .900	P= .780	P= .799	P= .977
PTGOAL	.2590	-.1739	.4410	.0782	.0473	.3991
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .233	P= .427	P= .035	P= .723	P= .830	P= .059
MATREW	-.1144	-.4530	.1428	-.3990	-.4324	.0009
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .603	P= .030	P= .516	P= .059	P= .039	P= .997
PERREW	.5347	.3180	.5161	.5376	.4893	.4863
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .009	P= .139	P= .012	P= .008	P= .018	P= .019
CREPND	.1043	.1204	.2162	.0455	.1119	.2034
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .636	P= .584	P= .322	P= .837	P= .611	P= .352
IDLSM	.4646	.1047	.5937	.1192	.0029	.3254
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .026	P= .635	P= .003	P= .588	P= .989	P= .130
VISION	.5825	.3695	.5670	.2591	.2113	.1867
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .004	P= .083	P= .005	P= .233	P= .333	P= .394
STQUO	.3055	.5572	.5348	.1059	.1266	.2512
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .156	P= .006	P= .009	P= .631	P= .565	P= .248
STMINS	.2995	.1797	.4940	.1482	.0882	.0367
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .165	P= .412	P= .017	P= .500	P= .689	P= .868

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XVISION	XSTQUO	XSTMINS	XINDACTN	XTMWK	XSNREW
INDACTN	.3970	.1522	.5587	.2962	.2345	.3955
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .061	P= .488	P= .006	P= .170	P= .281	P= .062
TMWK	.3835	.2375	.4662	.3838	.3901	.1642
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .071	P= .275	P= .025	P= .071	P= .066	P= .454
SNREW	-.0004	.0137	.3195	.0687	.0362	.6289
	(23)	(23)	(23)	(23)	(23)	(23)
	P= .999	P= .950	P= .137	P= .755	P= .870	P= .001
OPPTHT	.2326	.3515	.0875	-.0554	-.1014	.0573
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .074	P= .006	P= .506	P= .674	P= .441	P= .664
SUBPERF	.0427	.0255	-.0269	-.0042	-.1092	-.0627
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .748	P= .848	P= .840	P= .975	P= .410	P= .637
XAVERSE	-.2895	-.3862	-.2419	-.6942	-.6595	-.2862
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .025	P= .002	P= .063	P= .000	P= .000	P= .027
XASGOAL	-.0296	-.2600	-.2013	-.2932	-.0731	-.2987
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .822	P= .045	P= .123	P= .023	P= .579	P= .020
XINSCOM	.1058	-.2844	-.0469	-.4104	-.1929	-.2520
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .421	P= .028	P= .722	P= .001	P= .140	P= .052
XPTGOAL	.5593	.5501	.4205	.7526	.7875	.4087
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .000	P= .000	P= .001	P= .000	P= .000	P= .001
XMATREW	.4365	.5443	.2950	.7861	.7431	.2865
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .000	P= .000	P= .022	P= .000	P= .000	P= .026
XPERREW	.5810	.6637	.4755	.6865	.6594	.4789
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XVISION	XSTQUO	XSTMINS	XINDACTN	XTMWK	XSNREW
XCREPND	.3536 (60) P= .006	.1272 (60) P= .333	-.0259 (60) P= .844	.0146 (60) P= .912	.1183 (60) P= .368	-.1042 (60) P= .428
XIDLSM	.5553 (60) P= .000	.7172 (60) P= .000	.3970 (60) P= .002	.4744 (60) P= .000	.6070 (60) P= .000	.4732 (60) P= .000
XVISION	1.0000 (60) P= .	.5437 (60) P= .000	.6266 (60) P= .000	.4310 (60) P= .001	.4999 (60) P= .000	.2630 (60) P= .042
XSTQUO	.5437 (60) P= .000	1.0000 (60) P= .	.5092 (60) P= .000	.4857 (60) P= .000	.5529 (60) P= .000	.3722 (60) P= .003
XSTMINS	.6266 (60) P= .000	.5092 (60) P= .000	1.0000 (60) P= .	.3828 (60) P= .003	.4008 (60) P= .002	.5489 (60) P= .000
XINDACTN	.4310 (60) P= .001	.4857 (60) P= .000	.3828 (60) P= .003	1.0000 (60) P= .	.7481 (60) P= .000	.4855 (60) P= .000
XTMWK	.4999 (60) P= .000	.5529 (60) P= .000	.4008 (60) P= .002	.7481 (60) P= .000	1.0000 (60) P= .	.4042 (60) P= .001
XSNREW	.2630 (60) P= .042	.3722 (60) P= .003	.5489 (60) P= .000	.4855 (60) P= .000	.4042 (60) P= .001	1.0000 (60) P= .
XOPPTHT	.0407 (60) P= .757	.2768 (60) P= .032	.1126 (60) P= .392	-.1108 (60) P= .399	-.1187 (60) P= .367	.0943 (60) P= .473
XSUBPERF	-.0736 (58) P= .583	-.0210 (58) P= .876	-.0795 (58) P= .553	-.0637 (58) P= .635	-.2108 (58) P= .112	-.0542 (58) P= .686

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
10:21:40 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XOPPTHT	XSUBPERF
AVERSE	.1116	.1973
	(31)	(29)
	P= .550	P= .305
ASGOAL	-.3354	.0365
	(31)	(29)
	P= .065	P= .851
INSCOM	.0422	.1512
	(31)	(29)
	P= .822	P= .434
PTGOAL	.1454	.0925
	(31)	(29)
	P= .435	P= .633
MATREW	-.0308	.3229
	(31)	(29)
	P= .869	P= .088
PERREW	.0553	-.0446
	(31)	(29)
	P= .768	P= .818
CREPND	.1115	-.2088
	(31)	(29)
	P= .550	P= .277
IDLSM	.4117	.0980
	(31)	(29)
	P= .021	P= .613
VISION	.3831	.0043
	(31)	(29)
	P= .033	P= .982
STQUO	.3742	-.1646
	(31)	(29)
	P= .038	P= .394
STMINS	.2176	.0230
	(31)	(29)
	P= .240	P= .906

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH [redacted]
10:21:40 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XOPPTHT	XSUBPERF
INDACTN	.1293	-.1166
	(31)	(29)
	P= .488	P= .547
TMWK	-.2256	-.3866
	(31)	(29)
	P= .222	P= .038
SNREW	.1166	-.1489
	(31)	(29)
	P= .532	P= .441
OPPTHT	.5015	.3199
	(73)	(71)
	P= .000	P= .007
SUBPERF	.1533	.7583
	(72)	(71)
	P= .199	P= .000
XAVERSE	.2489	.2390
	(60)	(58)
	P= .055	P= .071
XASGOAL	-.1298	-.0852
	(60)	(58)
	P= .323	P= .525
XINSCOM	.0412	.1788
	(60)	(58)
	P= .755	P= .179
XPTGOAL	-.0507	-.0594
	(60)	(58)
	P= .700	P= .658
XMATREW	-.0948	-.0102
	(60)	(58)
	P= .471	P= .939
XPERREW	-.0567	-.1389
	(60)	(58)
	P= .667	P= .298

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 TRAIN REPT ON TRAINEE LDR BEH
10:21:40 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XOPPTHT	XSUBPERF
XCREPND	.0640 (60) P= .627	-.2347 (58) P= .076
XIDLSM	.2420 (60) P= .063	.0737 (58) P= .583
XVISION	.0407 (60) P= .757	-.0736 (58) P= .583
XSTQUO	.2768 (60) P= .032	-.0210 (58) P= .876
XSTMINS	.1126 (60) P= .392	-.0795 (58) P= .553
XINDACTN	-.1108 (60) P= .399	-.0637 (58) P= .635
XTMWK	-.1187 (60) P= .367	-.2108 (58) P= .112
XSNREW	.0943 (60) P= .473	-.0542 (58) P= .686
XOPPTHT	1.0000 (73) P= .	.2772 (71) P= .019
XSUBPERF	.2772 (71) P= .019	1.0000 (71) P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 5-2

Time 1/Time 2 LSQII-sub

Unit-Level Intercorrelations

Key to Appendix 5-2 Intercorrelation Table:

I. Leader Behavior	LSQII-sub	
Cluster Dimension	Time 1	(Time 2)
Strongman		
Aversive Behavior	Avrs	(Xavrs)
Assigned Goals	Asgl	(Xasgl)
Inst. and Command	Incom	(Xincom)
Transactor		
Participative Goals	Pargl	(Xpargl)
Contingent Material Reward	Mrew	(Xmrew)
Contingent Personal Reward	Prew	(Xprew)
Contingent Reprimand	Repmd	(Xrepmd)
Visionary Hero		
Stimulation and Inspiration	Stmin	(Xstmin)
Idealism	Idelsm	(Xidelsm)
Vision	Vis	(Xvis)
Challenge to the Status Quo	Staquo	(Xstaguo)
SuperLeader		
Independent Action	Inactn	(Xinactn)
Teamwork	Team	(Xteam)
Self-Reward	Slfrew	(Xslfrew)
Opportunity Thought	Optht	(Xoptht)

(Table Attached)

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH [redacted]
10:21:36 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
AVRS	1.0000 (72) P= .	.2589 (72) P= .028	.2599 (72) P= .027	-.4835 (72) P= .000	-.4626 (72) P= .000	-.3752 (72) P= .001
ASGL	.2589 (72) P= .028	1.0000 (72) P= .	.5441 (72) P= .000	.1025 (72) P= .392	.0628 (72) P= .600	.1564 (72) P= .190
INCOM	.2599 (72) P= .027	.5441 (72) P= .000	1.0000 (72) P= .	.1171 (72) P= .327	.0853 (72) P= .476	.2306 (72) P= .051
PARGL	-.4835 (72) P= .000	.1025 (72) P= .392	.1171 (72) P= .327	1.0000 (72) P= .	.4911 (72) P= .000	.5752 (72) P= .000
MREW	-.4626 (72) P= .000	.0628 (72) P= .600	.0853 (72) P= .476	.4911 (72) P= .000	1.0000 (72) P= .	.6448 (72) P= .000
PREW	-.3752 (72) P= .001	.1564 (72) P= .190	.2306 (72) P= .051	.5752 (72) P= .000	.6448 (72) P= .000	1.0000 (72) P= .
REPMD	.4630 (72) P= .000	.2748 (72) P= .019	.3433 (72) P= .003	.0965 (72) P= .420	.0649 (72) P= .588	.1368 (72) P= .252
STMIN	-.1704 (72) P= .152	.2289 (72) P= .053	.4441 (72) P= .000	.5385 (72) P= .000	.4369 (72) P= .000	.5512 (72) P= .000
IDELSM	-.1410 (72) P= .237	.1373 (72) P= .250	.2801 (72) P= .017	.4513 (72) P= .000	.4658 (72) P= .000	.5057 (72) P= .000
VIS	-.3070 (72) P= .009	.1683 (72) P= .158	.3275 (72) P= .005	.5545 (72) P= .000	.5364 (72) P= .000	.5039 (72) P= .000
STAQUO	-.0067 (72) P= .956	-.1161 (72) P= .331	.0877 (72) P= .464	.3084 (72) P= .008	.2323 (72) P= .050	.2417 (72) P= .041

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH [redacted]
10:21:36 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
INACTN	-.4272 (72) P= .000	-.0447 (72) P= .709	.0311 (72) P= .795	.6128 (72) P= .000	.3790 (72) P= .001	.3974 (72) P= .001
TEAM	-.3258 (72) P= .005	.0790 (72) P= .510	.1077 (72) P= .368	.4963 (72) P= .000	.4038 (72) P= .000	.4650 (72) P= .000
SLFREW	-.3958 (72) P= .001	.0699 (72) P= .559	.2175 (72) P= .067	.5843 (72) P= .000	.5338 (72) P= .000	.5326 (72) P= .000
OPTHT	-.3093 (72) P= .008	.0126 (72) P= .917	.3045 (72) P= .009	.5649 (72) P= .000	.3454 (72) P= .003	.4990 (72) P= .000
XAVRS	.8209 (71) P= .000	.1903 (71) P= .112	.2791 (71) P= .018	-.4831 (71) P= .000	-.4378 (71) P= .000	-.3664 (71) P= .002
XASGL	.3174 (71) P= .007	.6671 (71) P= .000	.5089 (71) P= .000	.1039 (71) P= .388	.0627 (71) P= .605	.2224 (71) P= .062
XINCOM	.2929 (71) P= .013	.3797 (71) P= .001	.5516 (71) P= .000	.0996 (71) P= .409	.0126 (71) P= .917	.0943 (71) P= .434
XPARGL	-.3844 (71) P= .001	-.1034 (71) P= .391	-.1219 (71) P= .311	.6348 (71) P= .000	.4496 (71) P= .000	.4885 (71) P= .000
XMREW	-.4834 (71) P= .000	-.0786 (71) P= .515	-.1186 (71) P= .324	.3483 (71) P= .003	.6791 (71) P= .000	.5118 (71) P= .000
XPREW	-.4263 (71) P= .000	-.0909 (71) P= .451	-.0417 (71) P= .730	.4438 (71) P= .000	.4915 (71) P= .000	.6640 (71) P= .000
XREPMD	.3590 (71) P= .002	.0738 (71) P= .541	.1898 (71) P= .113	.1033 (71) P= .391	.0184 (71) P= .879	.0766 (71) P= .525

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
XSTMIN	-.2257 (71) P= .058	.0378 (71) P= .754	.2671 (71) P= .024	.5142 (71) P= .000	.4570 (71) P= .000	.4266 (71) P= .000
XIDELSM	-.1684 (71) P= .160	.0217 (71) P= .858	.1111 (71) P= .356	.3747 (71) P= .001	.3987 (71) P= .001	.4613 (71) P= .000
XVIS	-.2904 (71) P= .014	-.1446 (71) P= .229	.1419 (71) P= .238	.3953 (71) P= .001	.3050 (71) P= .010	.3504 (71) P= .003
XSTAQUO	.0335 (71) P= .781	-.1360 (71) P= .258	.0778 (71) P= .519	.1644 (71) P= .171	.1961 (71) P= .101	.1980 (71) P= .098
XINACTN	-.3776 (71) P= .001	-.1345 (71) P= .263	-.1335 (71) P= .267	.4558 (71) P= .000	.2821 (71) P= .017	.2477 (71) P= .037
XTEAM	-.2820 (71) P= .017	-.0672 (71) P= .577	-.1064 (71) P= .377	.4520 (71) P= .000	.3464 (71) P= .003	.3940 (71) P= .001
XSLFREW	-.4032 (71) P= .000	.0392 (71) P= .745	-.0293 (71) P= .809	.2902 (71) P= .014	.3311 (71) P= .005	.3944 (71) P= .001
XOPTHT	-.2681 (71) P= .024	.0022 (71) P= .986	.1376 (71) P= .253	.4762 (71) P= .000	.3297 (71) P= .005	.4465 (71) P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

ii

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH [redacted]
10:21:36 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	REPMD	STMIN	IDELSM	VIS	STAQUO	INACTN
AVRS	.4630 (72) P= .000	-.1704 (72) P= .152	-.1410 (72) P= .237	-.3070 (72) P= .009	-.0067 (72) P= .956	-.4272 (72) P= .000
ASGL	.2748 (72) P= .019	.2289 (72) P= .053	.1373 (72) P= .250	.1683 (72) P= .158	-.1161 (72) P= .331	-.0447 (72) P= .709
INCOM	.3433 (72) P= .003	.4441 (72) P= .000	.2801 (72) P= .017	.3275 (72) P= .005	.0877 (72) P= .464	.0311 (72) P= .795
PARGL	.0965 (72) P= .420	.5385 (72) P= .000	.4513 (72) P= .000	.5545 (72) P= .000	.3084 (72) P= .008	.6128 (72) P= .000
MREW	.0649 (72) P= .588	.4369 (72) P= .000	.4658 (72) P= .000	.5364 (72) P= .000	.2323 (72) P= .050	.3790 (72) P= .001
PREW	.1368 (72) P= .252	.5512 (72) P= .000	.5057 (72) P= .000	.5039 (72) P= .000	.2417 (72) P= .041	.3974 (72) P= .001
REPMD	1.0000 (72) P= .	.4392 (72) P= .000	.3001 (72) P= .010	.3109 (72) P= .008	.3684 (72) P= .001	.2475 (72) P= .036
STMIN	.4392 (72) P= .000	1.0000 (72) P= .	.6049 (72) P= .000	.6422 (72) P= .000	.4111 (72) P= .000	.5945 (72) P= .000
IDELSM	.3001 (72) P= .010	.6049 (72) P= .000	1.0000 (72) P= .	.6486 (72) P= .000	.6638 (72) P= .000	.4390 (72) P= .000
VIS	.3109 (72) P= .008	.6422 (72) P= .000	.6486 (72) P= .000	1.0000 (72) P= .	.5461 (72) P= .000	.5421 (72) P= .000
STAQUO	.3684 (72) P= .001	.4111 (72) P= .000	.6638 (72) P= .000	.5461 (72) P= .000	1.0000 (72) P= .	.4650 (72) P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	REPMD	STMIN	IDELSM	VIS	STAQUO	INACTN
INACTN	.2475	.5945	.4390	.5421	.4650	1.0000
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .036	P= .000	P= .000	P= .000	P= .000	P= .
TEAM	.3721	.5317	.4998	.6352	.4471	.6618
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .001	P= .000	P= .000	P= .000	P= .000	P= .000
SLFREN	.1061	.6045	.4037	.5692	.3190	.6309
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .375	P= .000	P= .000	P= .000	P= .006	P= .000
OPTHT	.2765	.5485	.4712	.5412	.4224	.6580
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .019	P= .000	P= .000	P= .000	P= .000	P= .000
XAVRS	.3747	-.1535	-.0454	-.2916	.0179	-.4274
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .201	P= .707	P= .014	P= .882	P= .000
XASGL	.2883	.2299	.1763	.1763	-.0282	-.1383
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .015	P= .054	P= .141	P= .141	P= .816	P= .250
XINCOM	.3505	.2261	.2260	.1236	.1238	-.0315
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .003	P= .058	P= .058	P= .305	P= .304	P= .794
XPARGL	-.0018	.2190	.2931	.3464	.1295	.3178
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .988	P= .067	P= .013	P= .003	P= .282	P= .007
XMREN	-.0880	.1305	.2621	.2344	.0918	.2226
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .465	P= .278	P= .027	P= .049	P= .446	P= .062
XFREN	.0208	.3487	.4029	.4828	.2164	.3757
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .863	P= .003	P= .000	P= .000	P= .070	P= .001
XREPMD	.7310	.3562	.3595	.2135	.4251	.1984
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .002	P= .002	P= .074	P= .000	P= .097

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	REPMD	STMIN	IDELSM	VIS	STAQUO	INACTN
XSTMIN	.3536	.6815	.4707	.6589	.3851	.6667
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .002	P= .000	P= .000	P= .000	P= .001	P= .000
XIDELSM	.1385	.3340	.5770	.4383	.4551	.2443
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .249	P= .004	P= .000	P= .000	P= .000	P= .040
XVIS	.2355	.3433	.4122	.6150	.4748	.4924
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .048	P= .003	P= .000	P= .000	P= .000	P= .000
XSTAQUO	.3820	.2770	.5621	.5010	.8349	.3329
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .019	P= .000	P= .000	P= .000	P= .005
XINACTN	.1767	.2849	.2086	.3463	.2465	.7499
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .140	P= .016	P= .081	P= .003	P= .038	P= .000
XTEAM	.1957	.2201	.3709	.4446	.3317	.4880
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .102	P= .065	P= .001	P= .000	P= .005	P= .000
XSLFREW	-.0471	.2231	.2478	.2730	.1020	.3846
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .696	P= .061	P= .037	P= .021	P= .397	P= .001
XOPTHT	.2839	.4255	.4012	.4620	.3450	.4906
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .016	P= .000	P= .001	P= .000	P= .003	P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH   VM/SP CMS [redacted]
10:21:36 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	XAVRS	XASGL	XINCOM
AVRS	-.3258 (72) P= .005	-.3958 (72) P= .001	-.3093 (72) P= .008	.8209 (71) P= .000	.3174 (71) P= .007	.2929 (71) P= .013
ASGL	.0790 (72) P= .510	.0699 (72) P= .559	.0126 (72) P= .917	.1903 (71) P= .112	.6671 (71) P= .000	.3797 (71) P= .001
INCOM	.1077 (72) P= .368	.2175 (72) P= .067	.3045 (72) P= .009	.2791 (71) P= .018	.5089 (71) P= .000	.5516 (71) P= .000
PARGL	.4963 (72) P= .000	.5843 (72) P= .000	.5649 (72) P= .000	-.4831 (71) P= .000	.1039 (71) P= .388	.0996 (71) P= .409
MREW	.4038 (72) P= .000	.5338 (72) P= .000	.3454 (72) P= .003	-.4378 (71) P= .000	.0627 (71) P= .603	.0126 (71) P= .917
PREW	.4650 (72) P= .000	.5326 (72) P= .000	.4990 (72) P= .000	-.3664 (71) P= .002	.2224 (71) P= .062	.0943 (71) P= .434
REPMD	.3721 (72) P= .001	.1061 (72) P= .375	.2765 (72) P= .019	.3747 (71) P= .001	.2883 (71) P= .015	.3505 (71) P= .003
STMIN	.5317 (72) P= .000	.6045 (72) P= .000	.5485 (72) P= .000	-.1535 (71) P= .201	.2299 (71) P= .054	.2261 (71) P= .058
IDELSM	.4998 (72) P= .000	.4037 (72) P= .000	.4712 (72) P= .000	-.0454 (71) P= .707	.1763 (71) P= .141	.2260 (71) P= .058
VIS	.6352 (72) P= .000	.5692 (72) P= .000	.5412 (72) P= .000	-.2916 (71) P= .014	.1763 (71) P= .141	.1236 (71) P= .305
STAQUO	.4471 (72) P= .000	.3190 (72) P= .006	.4224 (72) P= .000	.0179 (71) P= .882	-.0282 (71) P= .816	.1238 (71) P= .304

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH VM/SP CMS
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- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	XAVRS	XASGL	XINCOM
INACTN	.6618 (72) P= .000	.6309 (72) P= .000	.6580 (72) P= .000	-.4274 (71) P= .000	-.1383 (71) P= .250	-.0315 (71) P= .794
TEAM	1.0000 (72) P= .	.4444 (72) P= .000	.5904 (72) P= .000	-.2883 (71) P= .015	.0661 (71) P= .584	.1218 (71) P= .311
SLFREW	.4444 (72) P= .000	1.0000 (72) P= .	.6272 (72) P= .000	-.4616 (71) P= .000	.0915 (71) P= .448	.0775 (71) P= .521
OPTHT	.5904 (72) P= .000	.6272 (72) P= .000	1.0000 (72) P= .	-.2899 (71) P= .014	.0501 (71) P= .678	.0401 (71) P= .740
XAVRS	-.2883 (71) P= .015	-.4616 (71) P= .000	-.2899 (71) P= .014	1.0000 (71) P= .	.2555 (71) P= .032	.3042 (71) P= .010
XASGL	.0661 (71) P= .584	.0915 (71) P= .448	.0501 (71) P= .678	.2555 (71) P= .032	1.0000 (71) P= .	.6409 (71) P= .000
XINCOM	.1218 (71) P= .311	.0775 (71) P= .521	.0401 (71) P= .740	.3042 (71) P= .010	.6409 (71) P= .000	1.0000 (71) P= .
XPARGL	.3647 (71) P= .002	.2924 (71) P= .013	.2459 (71) P= .039	-.4711 (71) P= .000	.1028 (71) P= .394	.0479 (71) P= .692
XMREW	.2728 (71) P= .021	.2968 (71) P= .012	.2272 (71) P= .057	-.5482 (71) P= .000	-.0663 (71) P= .583	-.1489 (71) P= .215
XFREW	.4034 (71) P= .000	.4267 (71) P= .000	.3268 (71) P= .005	-.5881 (71) P= .000	.0627 (71) P= .603	.0091 (71) P= .940
XREPMD	.2877 (71) P= .015	.0384 (71) P= .751	.2444 (71) P= .040	.3995 (71) P= .001	.2079 (71) P= .082	.4005 (71) P= .001

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH [redacted]
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-- Correlation Coefficients --

	TEAM	SLFREW	OPTMT	XAVRS	XASGL	XINCOM
XSTMIN	.6176	.6598	.5674	-.3155	.1443	.2245
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .007	P= .230	P= .060
XIDELSM	.3877	.3015	.2661	-.2400	.2156	.3758
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .011	P= .025	P= .044	P= .071	P= .001
XVIS	.4965	.4559	.4568	-.3273	.0320	.2252
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .005	P= .791	P= .059
XSTAQUO	.4398	.2138	.2987	.0001	.0369	.1688
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .073	P= .011	P= .999	P= .760	P= .159
XINACTN	.5896	.4958	.5332	-.4649	-.0799	.0045
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .000	P= .508	P= .970
XTEAM	.6125	.3485	.4287	-.3257	.0933	.0392
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .003	P= .000	P= .006	P= .439	P= .745
XSLFREW	.4051	.5255	.3453	-.5103	.1184	.1191
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .003	P= .000	P= .325	P= .323
XOPTMT	.6216	.4422	.6460	-.3578	.1254	.2025
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .002	P= .297	P= .090

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH [redacted]
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- - Correlation Coefficients - -

	XPARGL	XMREW	XPREW	XREPMD	XSTMIN	XIDELSM
AVRS	-.3844 (71) P= .001	-.4834 (71) P= .000	-.4263 (71) P= .000	.3590 (71) P= .002	-.2257 (71) P= .058	-.1684 (71) P= .160
ASGL	-.1036 (71) P= .391	-.0786 (71) P= .515	-.[illegible]09 (71) P= .451	.0738 (71) P= .541	.0378 (71) P= .754	.0217 (71) P= .858
INCOM	-.1219 (71) P= .311	-.1186 (71) P= .324	-.0417 (71) P= .730	.1898 (71) P= .113	.2671 (71) P= .024	.1111 (71) P= .356
PARGL	.6348 (71) P= .000	.3483 (71) P= .003	.4438 (71) P= .000	.1033 (71) P= .391	.5142 (71) P= .000	.3747 (71) P= .001
MREW	.4496 (71) P= .000	.6791 (71) P= .000	.4915 (71) P= .000	.0184 (71) P= .879	.4570 (71) P= .000	.3987 (71) P= .001
PREW	.4885 (71) P= .000	.5118 (71) P= .000	.6640 (71) P= .000	.0766 (71) P= .525	.4266 (71) P= .000	.4613 (71) P= .000
REPMD	-.0018 (71) P= .988	-.0880 (71) P= .465	.0208 (71) P= .863	.7310 (71) P= .000	.3536 (71) P= .002	.1385 (71) P= .249
STMIN	.2190 (71) P= .067	.1305 (71) P= .278	.3487 (71) P= .003	.3562 (71) P= .002	.6815 (71) P= .000	.3340 (71) P= .004
IDELSM	.2931 (71) P= .013	.2621 (71) P= .027	.4029 (71) P= .000	.3595 (71) P= .002	.4707 (71) P= .000	.5770 (71) P= .000
VIS	.3464 (71) P= .003	.2344 (71) P= .049	.4828 (71) P= .000	.2135 (71) P= .074	.6589 (71) P= .000	.4383 (71) P= .000
STAQUO	.1295 (71) P= .282	.0918 (71) P= .446	.2164 (71) P= .070	.4251 (71) P= .000	.3851 (71) P= .001	.4551 (71) P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XPARGL	XMREW	XPREW	XREPMD	XSTMIN	XIDELSM
INACTN	.3178 (71) P= .007	.2226 (71) P= .062	.3757 (71) P= .001	.1984 (71) P= .097	.6667 (71) P= .000	.2443 (71) P= .040
TEAM	.3647 (71) P= .002	.2728 (71) P= .021	.4034 (71) P= .000	.2877 (71) P= .015	.6176 (71) P= .000	.3877 (71) P= .001
SLFREW	.2924 (71) P= .013	.2968 (71) P= .012	.4267 (71) P= .000	.0384 (71) P= .751	.6598 (71) P= .000	.3015 (71) P= .011
OPTHT	.2459 (71) P= .039	.2272 (71) P= .057	.3268 (71) P= .005	.2444 (71) P= .040	.5674 (71) P= .000	.2661 (71) P= .025
XAVRS	-.4711 (71) P= .000	-.5482 (71) P= .000	-.5881 (71) P= .000	.3995 (71) P= .001	-.3155 (71) P= .007	-.2400 (71) P= .044
XASGL	.1028 (71) P= .394	-.0663 (71) P= .583	.0627 (71) P= .603	.2079 (71) P= .082	.1443 (71) P= .230	.2156 (71) P= .071
XINCOM	.0479 (71) P= .692	-.1489 (71) P= .215	.0091 (71) P= .940	.4005 (71) P= .001	.2245 (71) P= .060	.3758 (71) P= .001
XPARGL	1.0000 (71) P= .	.5294 (71) P= .000	.6435 (71) P= .000	.1275 (71) P= .289	.4170 (71) P= .000	.4621 (71) P= .000
XMREW	.5294 (71) P= .000	1.0000 (71) P= .	.6430 (71) P= .000	-.0074 (71) P= .951	.3233 (71) P= .006	.4251 (71) P= .000
XPREW	.6435 (71) P= .000	.6430 (71) P= .000	1.0000 (71) P= .	.0449 (71) P= .710	.5012 (71) P= .000	.5392 (71) P= .000
XREPMD	.1275 (71) P= .289	-.0074 (71) P= .951	.0449 (71) P= .710	1.0000 (71) P= .	.3093 (71) P= .009	.1844 (71) P= .124

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH [redacted]
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- - Correlation Coefficients - -

	XPARGL	XMREH	XPREH	XREFMD	XSTMIN	XIDELSM
XSTMIN	.4170	.3233	.5012	.3093	1.0000	.4443
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .006	P= .000	P= .009	P= .	P= .000
XIDELSM	.4621	.4251	.5392	.1844	.4443	1.0000
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .124	P= .000	P= .
XVIS	.4113	.2740	.5965	.2747	.6056	.5607
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .021	P= .000	P= .020	P= .000	P= .000
XSTAQUO	.2521	.2263	.3497	.4399	.4384	.6042
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .034	P= .058	P= .003	P= .000	P= .000	P= .000
XINACTN	.5196	.3392	.4605	.1491	.6198	.2553
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .004	P= .000	P= .214	P= .000	P= .032
XTEAM	.5677	.4429	.5699	.1747	.4981	.4594
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .145	P= .000	P= .000
XSLFREN	.4834	.4649	.5747	-.0549	.5084	.3125
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .649	P= .000	P= .008
XOPTHT	.5409	.4787	.6034	.2816	.6752	.5300
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .017	P= .000	P= .000

(Coefficient / (Cases) / 2-tailed sig)

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- - Correlation Coefficients - -

	XVIS	XSTAQUO	XINACTN	XTEAM	XSLFREW	XOPTHT
AVRS	-.2904	.0335	-.3776	-.2820	-.4032	-.2681
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .014	P= .781	P= .001	P= .017	P= .000	P= .024
ASGL	-.1446	-.1360	-.1345	-.0672	.0392	.0022
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .229	P= .258	P= .263	P= .577	P= .745	P= .986
INCOM	.1419	.0778	-.1335	-.1064	-.0293	.1376
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .238	P= .519	P= .267	P= .377	P= .809	P= .253
PARGL	.3953	.1644	.4550	.4520	.2902	.4762
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .171	P= .000	P= .000	P= .014	P= .000
MREW	.3050	.1961	.2821	.3464	.3311	.3297
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .010	P= .101	P= .017	P= .003	P= .005	P= .005
PREW	.3504	.1980	.2477	.3940	.3944	.4465
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .003	P= .098	P= .037	P= .001	P= .001	P= .000
REPMD	.2355	.3820	.1767	.1957	-.0471	.2839
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .048	P= .001	P= .140	P= .102	P= .696	P= .016
STMIN	.3433	.2770	.2849	.2201	.2231	.4255
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .003	P= .019	P= .016	P= .065	P= .061	P= .000
IDELSM	.4122	.5621	.2086	.3709	.2478	.4012
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .081	P= .001	P= .037	P= .001
VIS	.6150	.5010	.3463	.4446	.2730	.4620
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .003	P= .000	P= .021	P= .000
STAQUO	.4748	.8349	.2465	.3317	.1020	.3450
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .038	P= .005	P= .397	P= .003

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XVIS	XSTAQUO	XINACTN	XTEAM	XSLFREW	XOPTMT
INACTN	.4924	.3329	.7499	.4880	.3846	.4906
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .005	P= .000	P= .000	P= .001	P= .000
TEAM	.4965	.4398	.5896	.6125	.4051	.6216
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000
SLFREW	.4559	.2138	.4958	.3485	.5255	.4422
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .073	P= .000	P= .003	P= .000	P= .000
OPTMT	.4568	.2987	.5332	.4287	.3453	.6460
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .011	P= .000	P= .000	P= .003	P= .000
XAVRS	-.3273	.0001	-.4649	-.3257	-.5103	-.3578
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .005	P= .999	P= .000	P= .006	P= .000	P= .002
XASGL	.0320	.0369	-.0799	.0933	.1184	.1254
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .791	P= .760	P= .508	P= .439	P= .325	P= .297
XINCOM	.2252	.1688	.0045	.0392	.1191	.2025
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .059	P= .159	P= .970	P= .745	P= .323	P= .090
XPARGL	.4113	.2521	.5196	.5677	.4834	.5409
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .034	P= .000	P= .000	P= .000	P= .000
XMREW	.2740	.2263	.3392	.4429	.4649	.4787
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .021	P= .058	P= .004	P= .000	P= .000	P= .000
XPREW	.5965	.3497	.4605	.5699	.5747	.6034
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .003	P= .000	P= .000	P= .000	P= .000
XREFMD	.2747	.4399	.1491	.1747	-.0549	.2816
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .020	P= .000	P= .214	P= .145	P= .649	P= .017

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON TRAINEE LDR BEH VM/SP CMS
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- - Correlation Coefficients - -

	XVIS	XSTAQUO	XINACTN	XTEAM	XSLFREW	XOPTHT
XSTMIN	.6056 (71) P= .000	.4384 (71) P= .000	.6198 (71) P= .000	.4981 (71) P= .000	.5084 (71) P= .000	.6752 (71) P= .000
XIDELSM	.5607 (71) P= .000	.6042 (71) P= .000	.2553 (71) P= .032	.4594 (71) P= .000	.3125 (71) P= .008	.5300 (71) P= .000
XVIS	1.0000 (71) P= .	.5565 (71) P= .000	.5509 (71) P= .000	.4864 (71) P= .000	.3963 (71) P= .001	.6254 (71) P= .000
XSTAQUO	.5565 (71) P= .000	1.0000 (71) P= .	.2792 (71) P= .018	.4465 (71) P= .000	.2327 (71) P= .051	.4444 (71) P= .000
XINACTN	.5509 (71) P= .000	.2792 (71) P= .018	1.0000 (71) P= .	.6702 (71) P= .000	.5622 (71) P= .000	.6841 (71) P= .000
XTEAM	.4864 (71) P= .000	.4465 (71) P= .000	.6702 (71) P= .000	1.0000 (71) P= .	.4459 (71) P= .000	.5967 (71) P= .000
XSLFREW	.3963 (71) P= .001	.2327 (71) P= .051	.5622 (71) P= .000	.4459 (71) P= .000	1.0000 (71) P= .	.6145 (71) P= .000
XOPTHT	.6254 (71) P= .000	.4444 (71) P= .000	.6841 (71) P= .000	.5967 (71) P= .000	.6145 (71) P= .000	1.0000 (71) P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 5-3

Time 1/Time 2 SLQ Unit-Level

Intercorrelations

Key to Appendix 5-3 Intercorrelation Table:

Self-Leadership Behavior	SLQ	
	Time 1	(Time 2)
Self-Leadership		
Independent Action	Indact	(Xindact)
Efficacy	Effic	(Xeffic)
Teamwork	Teamwk	(Xteamwk)
Self-Reward	Sfrew	(Xsfrew)
Self-Goal Setting	Sfgl	(Xsfgl)
Natural Rewards	Nrew	(Xmrew)
Opportunity Thought	Oppttht	(Xopptht)
Self-Observation	Sobs	(Xsobs)

(Table Attached)

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON SELF-LEADERSHIP BEH [redacted]
10:21:38 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	INDACT	EFFIC	TEAMWK	SFREW	SFGL	WREW
INDACT	1.0000 (72) P= .	.4828 (72) P= .000	.2167 (72) P= .068	.2895 (72) P= .014	.4049 (72) P= .000	.2192 (72) P= .064
EFFIC	.4828 (72) P= .000	1.0000 (72) P= .	.0262 (72) P= .827	.1193 (72) P= .318	.1091 (72) P= .362	.1752 (72) P= .141
TEAMWK	.2167 (72) P= .068	.0262 (72) P= .827	1.0000 (72) P= .	.1749 (72) P= .142	.2229 (72) P= .060	.1271 (72) P= .287
SFREW	.2895 (72) P= .014	.1193 (72) P= .318	.1749 (72) P= .142	1.0000 (72) P= .	.0193 (72) P= .872	.5596 (72) P= .000
SFGL	.4049 (72) P= .000	.1091 (72) P= .362	.2229 (72) P= .060	.0193 (72) P= .872	1.0000 (72) P= .	.0536 (72) P= .655
WREW	.2192 (72) P= .064	.1752 (72) P= .141	.1271 (72) P= .287	.5596 (72) P= .000	.0536 (72) P= .655	1.0000 (72) P= .
OPPTHT	.1078 (72) P= .368	.2909 (72) P= .013	.1665 (72) P= .162	-.0346 (72) P= .773	.3071 (72) P= .009	.0551 (72) P= .646
SOBS	.0755 (72) P= .528	.2091 (72) P= .078	-.1781 (72) P= .134	.0866 (72) P= .470	.1381 (72) P= .247	-.0757 (72) P= .528
XINDACT	.7438 (71) P= .000	.3461 (71) P= .003	.1395 (71) P= .246	.1230 (71) P= .307	.3547 (71) P= .002	.0503 (71) P= .677
XEFFIC	.1509 (71) P= .209	.4968 (71) P= .000	.0952 (71) P= .430	.0099 (71) P= .935	.1544 (71) P= .199	-.0195 (71) P= .872
XTEAMWK	.2124 (71) P= .075	.4116 (71) P= .000	.4167 (71) P= .000	-.1119 (71) P= .353	.1304 (71) P= .278	-.1209 (71) P= .315

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON SELF-LEADERSHIP BEH [redacted]
10:21:38 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	INDACT	EFFIC	TEAMWK	SFREW	SFGL	NREW
XSFREW	.0578	.0742	-.2379	.5303	-.1293	.3860
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .632	P= .539	P= .046	P= .000	P= .283	P= .001
XSFGL	.4093	.1794	-.0371	.0644	.2917	.3034
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .134	P= .759	P= .594	P= .014	P= .010
XNREW	.1081	.1582	-.2262	.2289	.0253	.4873
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .369	P= .188	P= .058	P= .055	P= .834	P= .000
XOPPTHT	.1326	.4793	.0694	-.1145	.0030	.0208
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .267	P= .000	P= .562	P= .338	P= .980	P= .863
XSOBS	.1187	.3134	-.1104	.0938	.0558	-.0193
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .324	P= .008	P= .360	P= .436	P= .644	P= .873

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON SELF-LEADERSHIP BEH [redacted]
10:21:38 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	OPPTHT	SOBS	XINDACT	XEFFIC	XTEAMWK	XSFREW
INDACT	.1078	.0755	.7438	.1509	.2124	.0578
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .368	P= .528	P= .000	P= .209	P= .075	P= .632
EFFIC	.2909	.2091	.3461	.4968	.4116	.0742
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .013	P= .078	P= .003	P= .000	P= .000	P= .539
TEAMWK	.1665	-.1781	.1395	.0952	.4167	-.2379
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .162	P= .134	P= .246	P= .430	P= .000	P= .046
SFREW	-.0346	.0866	.1230	.0099	-.1119	.5303
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .773	P= .470	P= .307	P= .935	P= .353	P= .000
SFGL	.3071	.1381	.3547	.1544	.1304	-.1293
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .009	P= .247	P= .002	P= .199	P= .278	P= .283
NREW	.0551	-.0757	.0503	-.0195	-.1209	.3860
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .646	P= .528	P= .677	P= .872	P= .315	P= .001
OPPTHT	1.0000	.1419	.2725	.4297	.2733	-.0955
	(73)	(72)	(71)	(71)	(71)	(71)
	P= .	P= .234	P= .021	P= .000	P= .021	P= .428
SOBS	.1419	1.0000	.1727	.1934	.0957	.2499
	(72)	(72)	(71)	(71)	(71)	(71)
	P= .234	P= .	P= .150	P= .106	P= .427	P= .036
XINDACT	.2725	.1727	1.0000	.4655	.3518	-.0209
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .021	P= .150	P= .	P= .000	P= .003	P= .862
XEFFIC	.4297	.1934	.4655	1.0000	.4686	-.0192
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .106	P= .000	P= .	P= .000	P= .874
XTEAMWK	.2733	.0957	.3518	.4686	1.0000	-.1704
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .021	P= .427	P= .003	P= .000	P= .	P= .155

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON SELF-LEADERSHIP BEH
10:21:38 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	OPPTHT	SOBS	XINDACT	XEFFIC	XTEAMWK	XSFREW
XSFREW	-.0955	.2499	-.0209	-.0192	-.1704	1.0000
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .428	P= .036	P= .362	P= .874	P= .155	P= .
XSFGL	.1625	.0528	.4441	.1853	.0869	.0914
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .176	P= .662	P= .000	P= .122	P= .471	P= .448
XNREW	.0088	.3271	.2112	.2526	-.0026	.5005
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .942	P= .005	P= .077	P= .034	P= .983	P= .000
XOPPTHT	.5015	.1107	.3502	.6166	.5438	-.0048
	(73)	(72)	(71)	(71)	(71)	(71)
	P= .000	P= .354	P= .003	P= .000	P= .000	P= .968
XSOBS	.1698	.4639	.2360	.3397	.2360	.4339
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .157	P= .000	P= .048	P= .004	P= .048	P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON SELF-LEADERSHIP BEH [redacted]
10:21:38 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XSFGL	XNREW	XOPPTHT	XSOBS
INDACT	.4093	.1081	.1326	.1187
	(71)	(71)	(72)	(71)
	P= .000	P= .369	P= .267	P= .324
EFFIC	.1794	.1582	.4793	.3134
	(71)	(71)	(72)	(71)
	P= .134	P= .188	P= .000	P= .008
TEAMWK	-.0371	-.2262	.0694	-.1104
	(71)	(71)	(72)	(71)
	P= .759	P= .058	P= .562	P= .360
SFREW	.0644	.2289	-.1145	.0938
	(71)	(71)	(72)	(71)
	P= .594	P= .055	P= .338	P= .436
SFGL	.2917	.0253	.0030	.0558
	(71)	(71)	(72)	(71)
	P= .014	P= .834	P= .980	P= .644
NREW	.3034	.4873	.0208	-.0193
	(71)	(71)	(72)	(71)
	P= .010	P= .000	P= .863	P= .873
OPPTHT	.1625	.0088	.5015	.1698
	(71)	(71)	(73)	(71)
	P= .176	P= .942	P= .000	P= .157
SOBS	.0528	.3271	.1107	.4639
	(71)	(71)	(72)	(71)
	P= .662	P= .005	P= .354	P= .000
XINDACT	.4441	.2112	.3502	.2360
	(71)	(71)	(71)	(71)
	P= .000	P= .077	P= .003	P= .048
XEFFIC	.1853	.2526	.6166	.3397
	(71)	(71)	(71)	(71)
	P= .122	P= .034	P= .000	P= .004
XTEAMWK	.0869	-.0026	.5438	.2[illegible]0
	(71)	(71)	(71)	(71)
	P= .471	P= .983	P= .000	P= .048

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 GP LVL TIME 1 & 2 SUB REPT ON SELF-LEADERSHIP BEH [redacted]
10:21:38 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XSFGL	XNREW	XOPPTHT	XSOBS
XSFREW	.0914	.5005	-.0048	.4339
	(71)	(71)	(71)	(71)
	P= .448	P= .000	P= .968	P= .000
XSFGL	1.0000	.2793	.2580	.2009
	(71)	(71)	(71)	(71)
	P= .	P= .018	P= .030	P= .093
XNREW	.2793	1.0000	.1285	.4527
	(71)	(71)	(71)	(71)
	P= .018	P= .	P= .286	P= .000
XOPPTHT	.2580	.1285	1.0000	.3535
	(71)	(71)	(73)	(71)
	P= .030	P= .286	P= .	P= .002
XSOBS	.2009	.4527	.3535	1.0000
	(71)	(71)	(71)	(71)
	P= .093	P= .000	P= .002	P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 5-4

Time 1/Time 2 CBQ Unit-Level

Intercorrelations

Key to Appendix 5-4 Intercorrelation Table:

III. Citizenship Behavior	CBQ	
	Time 1	(Time 2)
Organizational Citizenship		
Interpersonal Support	Intsup	(Xintsup)
Courtesy	Ctsy	(Xctsy)
Civic Virtue (News)	Cvnws	(Xcvnws)
Counterproductive Behavior		
Unreliability	Unrel	(Xunrel)
Complaining	Comp	(Xcomp)

(Table Attached)

- - Correlation Coefficients - -

	INTSUP	CTSY	CVNNS	UNREL	COMP	XINTSUP
INTSUP	1.0000 (72) P= .	.7463 (72) P= .000	.3270 (72) P= .005	-.3974 (72) P= .001	-.5683 (72) P= .000	.7492 (71) P= .000
CTSY	.7463 (72) P= .000	1.0000 (72) P= .	.4486 (72) P= .000	-.4613 (72) P= .000	-.6092 (72) P= .000	.5504 (71) P= .000
CVNNS	.3270 (72) P= .005	.4486 (72) P= .000	1.0000 (72) P= .	-.3689 (72) P= .001	-.4329 (72) P= .000	.2650 (71) P= .026
UNREL	-.3974 (72) P= .001	-.4613 (72) P= .000	-.3689 (72) P= .001	1.0000 (72) P= .	.5065 (72) P= .000	-.1855 (71) P= .121
COMP	-.5683 (72) P= .000	-.6092 (72) P= .000	-.4329 (72) P= .000	.5065 (72) P= .000	1.0000 (72) P= .	-.2775 (71) P= .019
XINTSUP	.7492 (71) P= .000	.5504 (71) P= .000	.2650 (71) P= .026	-.1855 (71) P= .121	-.2775 (71) P= .019	1.0000 (71) P= .
XCTSY	.6041 (71) P= .000	.5726 (71) P= .000	.3275 (71) P= .005	-.3302 (71) P= .005	-.3763 (71) P= .001	.6729 (71) P= .000
XCVNNS	.3900 (71) P= .001	.3992 (71) P= .001	.3890 (71) P= .001	-.1717 (71) P= .152	-.3011 (71) P= .011	.4864 (71) P= .000
XUNREL	-.4287 (71) P= .000	-.4337 (71) P= .000	-.2397 (71) P= .044	.6186 (71) P= .000	.4454 (71) P= .000	-.4681 (71) P= .000
XCOMP	-.4475 (71) P= .000	-.6052 (71) P= .000	-.3097 (71) P= .009	.2248 (71) P= .059	.5037 (71) P= .000	-.5358 (71) P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XCTSY	XCVNHS	XUNREL	XCOMP
INTSUP	.6041	.3900	-.4287	-.4475
	(71)	(71)	(71)	(71)
	P= .000	P= .001	P= .000	P= .000
CTSY	.5726	.3992	-.4337	-.6052
	(71)	(71)	(71)	(71)
	P= .000	P= .001	P= .000	P= .000
CVNHS	.3275	.3890	-.2397	-.3097
	(71)	(71)	(71)	(71)
	P= .005	P= .001	P= .044	P= .009
UNREL	-.3302	-.1717	.6186	.2248
	(71)	(71)	(71)	(71)
	P= .005	P= .152	P= .000	P= .059
COMP	-.3763	-.3011	.4454	.5037
	(71)	(71)	(71)	(71)
	P= .001	P= .011	P= .000	P= .000
XINTSUP	.6729	.4864	-.4681	-.5358
	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .000
XCTSY	1.0000	.4302	-.5033	-.5566
	(71)	(71)	(71)	(71)
	P= .	P= .000	P= .000	P= .000
XCVNHS	.4302	1.0000	-.2959	-.4422
	(71)	(71)	(71)	(71)
	P= .000	P= .	P= .012	P= .000
XUNREL	-.5033	-.2959	1.0000	.5148
	(71)	(71)	(71)	(71)
	P= .000	P= .012	P= .	P= .000
XCOMP	-.5566	-.4422	.5148	1.0000
	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 5-5

Time 1/Time 2 Job Satisfaction

Individual-Level Intercorrelations

Key to Appendix 5-5 Intercorrelation Table:

	Job Satisfaction	
Dimension (Individual Level)	Time 1	(Time 2)
Growth Satisfaction	Growth	(XGrowth)
Pay Satisfaction	Pay	(XPay)
Job Security Satisfaction	Jobsec	(XJobsec)
Supervision Satisfaction	Supvsn	(XSupvsn)
Social Satisfaction	Social	(XSocial)

(Table Attached)

II

19-Jul-93 ALL IND LVL JOB SATISFACTION TIME 1 AND TIME 2 VARIABLES [redacted]
10:22:04 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	GROWTH	PAY	JOBSEC	SUPVSN	SOCIAL	XGROWTH
GROWTH	1.0000	.3361	.4020	.4797	.3778	-.0660
	(387)	(387)	(387)	(387)	(387)	(302)
	P= .	P= .000	P= .000	P= .000	P= .000	P= .253
PAY	.3361	1.0000	.2688	.3640	.2281	.0659
	(387)	(387)	(387)	(387)	(387)	(302)
	P= .000	P= .	P= .000	P= .000	P= .000	P= .254
JOBSEC	.4020	.2688	1.0000	.2927	.2090	.0110
	(387)	(387)	(387)	(387)	(387)	(302)
	P= .000	P= .000	P= .	P= .000	P= .000	P= .849
SUPVSN	.4797	.3640	.2927	1.0000	.3358	-.0359
	(387)	(387)	(387)	(387)	(387)	(302)
	P= .000	P= .000	P= .000	P= .	P= .000	P= .534
SOCIAL	.3778	.2281	.2090	.3358	1.0000	-.1839
	(387)	(387)	(387)	(387)	(387)	(302)
	P= .000	P= .000	P= .000	P= .000	P= .	P= .001
XGROWTH	-.0660	.0659	.0110	-.0359	-.1839	1.0000
	(302)	(302)	(302)	(302)	(302)	(306)
	P= .253	P= .254	P= .849	P= .534	P= .001	P= .
XPAY	-.1000	-.0248	.0067	-.0293	-.0636	.3169
	(302)	(302)	(302)	(302)	(302)	(306)
	P= .083	P= .668	P= .907	P= .612	P= .270	P= .000
XJOBSEC	-.0585	.0269	-.0521	.0190	-.0849	.3508
	(302)	(302)	(302)	(302)	(302)	(306)
	P= .311	P= .641	P= .367	P= .742	P= .141	P= .000
XSUPVSN	-.0295	.0150	-.0230	-.0348	-.0102	.5024
	(302)	(302)	(302)	(302)	(302)	(306)
	P= .609	P= .795	P= .690	P= .546	P= .860	P= .000
XSOCIAL	-.0859	.0891	-.0448	.0709	-.0193	.4467
	(302)	(302)	(302)	(302)	(302)	(306)
	P= .136	P= .122	P= .438	P= .219	P= .738	P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL IND LVL JOB SATISFACTION TIME 1 AND TIME 2 VARIABLES [redacted]
10:22:04 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XPAY	XJOBSEC	XSUPVSN	XSOCIAL
GROWTH	-.1000 (302) P= .083	-.0585 (302) P= .311	-.0295 (302) P= .609	-.0859 (302) P= .136
PAY	-.0248 (302) P= .668	.0269 (302) P= .641	.0150 (302) P= .795	.0891 (302) P= .122
JOBSEC	.0067 (302) P= .907	-.0521 (302) P= .367	-.0230 (302) P= .690	-.0448 (302) P= .438
SUPVSN	-.0293 (302) P= .612	.0190 (302) P= .742	-.0348 (302) P= .546	.0709 (302) P= .219
SOCIAL	-.0636 (302) P= .270	-.0849 (302) P= .141	-.0102 (302) P= .860	-.0193 (302) P= .738
XGROWTH	.3169 (306) P= .000	.3508 (306) P= .000	.5024 (306) P= .000	.4467 (306) P= .000
XPAY	1.0000 (306) P= .	.2792 (306) P= .000	.2835 (306) P= .000	.1519 (306) P= .008
XJOBSEC	.2792 (306) P= .000	1.0000 (306) P= .	.2931 (306) P= .000	.2601 (306) P= .000
XSUPVSN	.2835 (306) P= .000	.2931 (306) P= .000	1.0000 (306) P= .	.3670 (306) P= .000
XSOCIAL	.1519 (306) P= .008	.2601 (306) P= .000	.3670 (306) P= .000	1.0000 (306) P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 5-6

Time 1/Time 2 Performance and

Effectiveness Unit-Level

Intercorrelations

Key to Appendix 5-6 Intercorrelation Table:

Performance/Effectiveness	Manager/Self-/Subord Report Time 1	(Time 2)
Performance (Supervising Manager)		
Overall	Toteff	(Xtoteff)
Output	Output	(Xoutput)
Interpersonal	Inteff	(Xinteff)
Change	Chngeff	(Xchngeff)
Organizing and Planning	Orgpln	(Xorgpln)
Effectiveness (Self)	Slfperf	(Xslfperf)
Effectiveness (Subordinate)	Subperf	(Xsubperf)

(Table Attached)

19-Jul-93 GP LVL TIME 1 & 2 REPTS ON TRAINEE PERF [redacted]
10:21:42 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	TOTEFF	OUTPUT	INTEFF	CHNGEFF	ORGPLN	SLFPERF
TOTEFF	1.0000 (70) P= .	.7329 (70) P= .000	.8508 (70) P= .000	.7333 (70) P= .000	.6441 (70) P= .000	-.1090 (31) P= .560
OUTPUT	.7329 (70) P= .000	1.0000 (70) P= .	.4338 (70) P= .000	.3132 (70) P= .008	.4543 (70) P= .000	.0791 (31) P= .672
INTEFF	.8508 (70) P= .000	.4338 (70) P= .000	1.0000 (70) P= .	.5182 (70) P= .000	.3566 (70) P= .002	-.2927 (31) P= .110
CHNGEFF	.7333 (70) P= .000	.3132 (70) P= .008	.5182 (70) P= .000	1.0000 (70) P= .	.4497 (70) P= .000	-.0771 (31) P= .680
ORGPLN	.6441 (70) P= .000	.4543 (70) P= .000	.3566 (70) P= .002	.4497 (70) P= .000	1.0000 (70) P= .	.1030 (31) P= .581
SLFPERF	-.1090 (31) P= .560	.0791 (31) P= .672	-.2927 (31) P= .110	-.0771 (31) P= .680	.1030 (31) P= .581	1.0000 (31) P= .
SUBPERF	.1398 (69) P= .252	.2594 (69) P= .031	.0315 (69) P= .797	.0430 (69) P= .726	.1589 (69) P= .192	-.1139 (30) P= .549
XTOTEFF	.6949 (61) P= .000	.5763 (61) P= .000	.5981 (61) P= .000	.4859 (61) P= .000	.3587 (61) P= .005	.0396 (27) P= .845
XOUTPUT	.5081 (61) P= .000	.6375 (61) P= .000	.2800 (61) P= .029	.2835 (61) P= .027	.3688 (61) P= .003	.1787 (27) P= .373
XINTEFF	.5276 (61) P= .000	.2677 (61) P= .037	.6449 (61) P= .000	.3237 (61) P= .011	.1928 (61) P= .137	-.1206 (27) P= .549
XCHNGEFF	.5490 (61) P= .000	.3739 (61) P= .003	.4448 (61) P= .000	.5375 (61) P= .000	.2335 (61) P= .070	.2299 (27) P= .249

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	TOTEFF	OUTPUT	INTEFF	CHNGEFF	ORGPLN	SLFPERF
XORGPLN	.4864 (61) P= .000	.5322 (61) P= .000	.3295 (61) P= .010	.3031 (61) P= .018	.3155 (61) P= .013	-.3026 (27) P= .125
XSLFPERF	-.0393 (57) P= .772	.0849 (57) P= .530	-.0001 (57) P= .999	-.1475 (57) P= .273	-.1142 (57) P= .398	.5512 (23) P= .006
XSUBPERF	.0282 (68) P= .820	.1306 (68) P= .288	-.1193 (68) P= .333	.0638 (68) P= .605	.1657 (68) P= .177	-.0478 (29) P= .806

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

	SUBPERF	XTOTEFF	XOUTPUT	XINTEFF	XCHNGEFF	XORGPLN
TOTEFF	.1398 (69) P= .252	.6949 (61) P= .000	.5081 (61) P= .000	.5276 (61) P= .000	.5490 (61) P= .000	.4864 (61) P= .000
OUTPUT	.2594 (69) P= .031	.5763 (61) P= .000	.6375 (61) P= .000	.2677 (61) P= .037	.3739 (61) P= .003	.5322 (61) P= .000
INTEFF	.0315 (69) P= .797	.5981 (61) P= .000	.2800 (61) P= .029	.6449 (61) P= .000	.4448 (61) P= .000	.3295 (61) P= .010
CHNGEFF	.0430 (69) P= .726	.4859 (61) P= .000	.2835 (61) P= .027	.3237 (61) P= .011	.5375 (61) P= .000	.3031 (61) P= .018
ORGPLN	.1589 (69) P= .192	.3587 (61) P= .005	.3688 (61) P= .003	.1928 (61) P= .137	.2335 (61) P= .070	.3155 (61) P= .013
SLFPERF	-.1139 (30) P= .549	.0396 (27) P= .845	.1787 (27) P= .373	-.1206 (27) P= .549	.2299 (27) P= .249	-.3026 (27) P= .125

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 GP LVL TIME 1 & 2 REPTS ON TRAINEE PERF [redacted]
10:21:42 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	SUBPERF	XTOTEFF	XOUTPUT	XINTEFF	XCHNGEFF	XORGPLN
SUBPERF	1.0000 (72) P= .	.1417 (60) P= .280	.2092 (60) P= .109	.0543 (60) P= .680	.0408 (60) P= .757	.1618 (60) P= .217
XTOTEFF	.1417 (60) P= .280	1.0000 (61) P= .	.7771 (61) P= .000	.7763 (61) P= .000	.8282 (61) P= .000	.5211 (61) P= .000
XOUTPUT	.2092 (60) P= .109	.7771 (61) P= .000	1.0000 (61) P= .	.3221 (61) P= .011	.5892 (61) P= .000	.3814 (61) P= .002
XINTEFF	.0543 (60) P= .680	.7763 (61) P= .000	.3221 (61) P= .011	1.0000 (61) P= .	.5217 (61) P= .000	.2334 (61) P= .070
XCHNGEFF	.0408 (60) P= .757	.8282 (61) P= .000	.5892 (61) P= .000	.5217 (61) P= .000	1.0000 (61) P= .	.2801 (61) P= .029
XORGPLN	.1618 (60) P= .217	.5211 (61) P= .000	.3814 (61) P= .002	.2334 (61) P= .070	.2801 (61) P= .029	1.0000 (61) P= .
XSLFPERF	-.0811 (59) P= .541	.0968 (51) P= .499	.1128 (51) P= .430	.1330 (51) P= .352	.0678 (51) P= .636	-.1450 (51) P= .310
XSUBPERF	.7583 (71) P= .000	.1376 (59) P= .299	.1572 (59) P= .234	.1131 (59) P= .394	.0422 (59) P= .751	.1116 (59) P= .400

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 GP LVL TIME 1 & 2 REPTS ON TRAINCE PERF
10:21:42 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XSLFPERF	XSUBPERF
TOTEFF	-.0393 (57) P= .772	.0282 (68) P= .820
OUTPUT	.0849 (57) P= .530	.1306 (68) P= .288
INTEFF	-.0001 (57) P= .999	-.1193 (68) P= .333
CHNGEFF	-.1475 (57) P= .273	.0638 (68) P= .605
ORGPLN	-.1142 (57) P= .398	.1657 (68) P= .177
SLFPERF	.5512 (23) P= .006	-.0478 (29) P= .806
SUBPERF	-.0811 (59) P= .541	.7583 (71) P= .000
XTOTEFF	.0968 (51) P= .499	.1376 (59) P= .299
XOUTPUT	.1128 (51) P= .430	.1572 (59) P= .234
XINTEFF	.1330 (51) P= .352	.1131 (59) P= .394
XCHNGEFF	.0678 (51) P= .636	.0422 (59) P= .751

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XSLFPERF	XSUBPERF
XORGPLN	-.1450	.1116
	(51)	(59)
	P= .310	P= .400
XSLFPERF	1.0000	-.1187
	(60)	(58)
	P= .	P= .375
XSUBPERF	-.1187	1.0000
	(58)	(71)
	P= .375	P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 5-7

Time 1/Time 2 Unit-Level

Intercorrelations (All)

Key to Appendix 5-7 Intercorrelation Table:

I. Leader Behavior	LSQII-sub		LSQII-train	
Cluster Dimension	Time 1	(Time 2)	Time 1	(Time 2)
Strongman				
Aversive Behavior	Avrs	(Xavrs)	Averse	(Xaverse)
Assigned Goals	Asgl	(Xasgl)	Asgoal	(Xasgoal)
Inst. and Command	Incom	(Xincom)	Inscom	(Xinscom)
Transactor				
Participative Goals	Pargl	(Xpargl)	Ptgoal	(Xptgoal)
Contingent Material Reward	Mrew	(Xmrew)	Matrew	(Xmatrew)
Contingent Personal Reward	Prew	(Xprew)	Perrew	(Xperrew)
Contingent Reprimand	Repmd	(Xrepmd)	Crepnd	(Xcrepnd)
Visionary Hero				
Challenge to the Status Quo	Staquo	(Xstaguo)	Stquo	(Xstquo)
Vision	Vis	(Xvis)	Vision	(XVision)
Idealism	Idelsm	(Xidelsm)	Idlsm	(Xidlsm)
Stimulation and Inspiration	Stmin	(Xstmin)	Stmins	(Xstmins)
SuperLeader				
Independent Action	Inactn	(Xinactn)	Indactn	(Xindactn)
Teamwork	Team	(Xteam)	Tmwk	(Xtmwk)
Self-Reward	Slfrew	(Xslfrew)	Snrew	(Xsnrew)
Opportunity Thought	Optht	(Xoptht)	Oppthts	(Xoppthts)

II. Self-Leadership Behavior	SLQ	
	Time 1	(Time 2)
Self-Leadership		
Independent Action	Indact	(Xindact)
Efficacy	Effic	(Xeffic)
Teamwork	Teamwk	(Xteamwk)
Self-Reward	Sfrew	(Xsfrew)
Self-Goal Setting	Sfgl	(Xsfgl)
Natural Rewards	Nrew	(Xmrew)
Opportunity Thought	Oppth̄t	(Xoppth̄t)
Self-Observation	Sobs	(Xsobs)

III. Citizenship Behavior	CBQ	
	Time 1	(Time 2)
Organizational Citizenship		
Interpersonal Support	Intsup	(Xintsup)
Courtesy	Ctsy	(Xctsy)
Civic Virtue (News)	Cvnws	(Xcvnws)
Counterproductive Behavior		
Unreliability	Unrel	(Xunrel)
Complaining	Comp	(Xcomp)

IV. Trainee Performance	Manager/Self-/Subord Report	
	Time 1	(Time 2)
Performance (Supervising Manager)		
Overall	Toteff	(Xtoteff)
Output	Output	(Xoutput)
Interpersonal	Inteff	(Xinteff)
Change	Chngeff	(Xchngeff)
Organizing and Planning	Orgpln	(Xorgpln)
Effectiveness (Self)	Slfperf	(Xslfperf)
Effectiveness (Subordinate)	Subperf	(Xsubperf)

V. Moderator	Desire	
	Time 1	(Time 2)
Desire for Self-Leadership	Desire	(Xdesire)

(Table Attached)

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
AVRS	1.0000 (72) P= .	.2589 (72) P= .028	.2599 (72) P= .027	-.4835 (72) P= .000	-.4626 (72) P= .000	-.3752 (72) P= .001
ASGL	.2589 (72) P= .028	1.0000 (72) P= .	.5441 (72) P= .000	.1025 (72) P= .392	.0628 (72) P= .600	.1564 (72) P= .190
INCOM	.2599 (72) P= .027	.5441 (72) P= .000	1.0000 (72) P= .	.1171 (72) P= .327	.0853 (72) P= .476	.2306 (72) P= .051
PARGL	-.4835 (72) P= .000	.1025 (72) P= .392	.1171 (72) P= .327	1.0000 (72) P= .	.4911 (72) P= .000	.5752 (72) P= .000
MREW	-.4626 (72) P= .000	.0628 (72) P= .600	.0853 (72) P= .476	.4911 (72) P= .000	1.0000 (72) P= .	.6448 (72) P= .000
PREW	-.3752 (72) P= .001	.1564 (72) P= .190	.2306 (72) P= .051	.5752 (72) P= .000	.6448 (72) P= .000	1.0000 (72) P= .
REPMD	.4630 (72) P= .000	.2748 (72) P= .019	.3433 (72) P= .003	.0965 (72) P= .420	.0649 (72) P= .588	.1368 (72) P= .252
STAQUO	-.0067 (72) P= .956	-.1161 (72) P= .331	.0877 (72) P= .464	.3084 (72) P= .008	.2323 (72) P= .050	.2417 (72) P= .041
VIS	-.3070 (72) P= .009	.1683 (72) P= .158	.3275 (72) P= .005	.5545 (72) P= .000	.5364 (72) P= .000	.5039 (72) P= .000
IDELSM	-.1410 (72) P= .237	.1373 (72) P= .250	.2801 (72) P= .017	.4513 (72) P= .000	.4658 (72) P= .000	.5057 (72) P= .000
STMIN	-.1704 (72) P= .152	.2289 (72) P= .053	.4441 (72) P= .000	.5385 (72) P= .000	.4369 (72) P= .000	.5512 (72) P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
INACTN	-.4272 (72) P= .000	-.0447 (72) P= .709	.0311 (72) P= .795	.6128 (72) P= .000	.3790 (72) P= .001	.3974 (72) P= .001
TEAM	-.3258 (72) P= .005	.0790 (72) P= .510	.1077 (72) P= .368	.4963 (72) P= .000	.4038 (72) P= .000	.4650 (72) P= .000
SLFREW	-.3958 (72) P= .001	.0699 (72) P= .559	.2175 (72) P= .067	.5843 (72) P= .000	.5338 (72) P= .000	.5326 (72) P= .000
OPTHT	-.3093 (72) P= .008	.0126 (72) P= .917	.3045 (72) P= .009	.5649 (72) P= .000	.3454 (72) P= .003	.4990 (72) P= .000
INDACT	-.4512 (72) P= .000	-.0641 (72) P= .593	-.4266 (72) P= .000	.2606 (72) P= .027	.2962 (72) P= .012	.1079 (72) P= .367
EFFIC	-.0285 (72) P= .812	.0539 (72) P= .653	-.1522 (72) P= .202	-.0998 (72) P= .404	.1000 (72) P= .403	.0450 (72) P= .707
TEAMWK	-.1575 (72) P= .187	-.0454 (72) P= .705	-.0028 (72) P= .981	.2974 (72) P= .011	.1520 (72) P= .203	.0282 (72) P= .814
SFREW	-.1459 (72) P= .221	.2179 (72) P= .066	.0083 (72) P= .945	.0397 (72) P= .740	.2691 (72) P= .022	.2574 (72) P= .029
SFGL	-.3857 (72) P= .001	-.3252 (72) P= .005	-.3028 (72) P= .010	.3048 (72) P= .009	.1323 (72) P= .268	.0268 (72) P= .823
NREW	-.1703 (72) P= .153	.2356 (72) P= .046	-.0980 (72) P= .413	-.0420 (72) P= .726	.1633 (72) P= .170	.0061 (72) P= .960
OPPTHT	-.1294 (72) P= .279	-.0716 (72) P= .550	.1760 (72) P= .139	.2459 (72) P= .037	.0378 (72) P= .753	.1617 (72) P= .175

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
SOBS	.0106	-.0687	.0458	.1484	.0594	.2008
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .929	P= .566	P= .702	P= .214	P= .620	P= .091
INTSUP	-.1169	.1535	.0084	.2062	.1649	.1604
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .328	P= .198	P= .944	P= .082	P= .166	P= .178
CTSY	-.1393	.1442	.0142	.2217	.2171	.1455
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .243	P= .227	P= .906	P= .061	P= .067	P= .223
CVNWS	-.2894	.1660	.0886	.4022	.2882	.2503
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .014	P= .163	P= .459	P= .000	P= .014	P= .034
UNREL	.1717	-.1820	-.1592	-.2969	-.2488	-.2868
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .149	P= .126	P= .182	P= .011	P= .035	P= .015
COMP	.1986	-.0210	-.1369	-.3704	-.3869	-.3322
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .094	P= .861	P= .252	P= .001	P= .001	P= .004
TOTEFF	-.1794	.0404	-.0656	.2147	.0959	.0089
	(69)	(69)	(69)	(69)	(69)	(69)
	P= .140	P= .742	P= .592	P= .076	P= .433	P= .942
OUTPUT	.0389	.0511	-.0136	.1988	.1528	.0216
	(69)	(69)	(69)	(69)	(69)	(69)
	P= .751	P= .677	P= .912	P= .101	P= .210	P= .860
INTEFF	-.2260	.0833	-.0945	.1897	.0216	-.0281
	(69)	(69)	(69)	(69)	(69)	(69)
	P= .062	P= .496	P= .440	P= .118	P= .860	P= .819
CHNGEFF	-.2802	-.0967	-.0068	.0916	.0381	.0571
	(69)	(69)	(69)	(69)	(69)	(69)
	P= .020	P= .429	P= .956	P= .454	P= .756	P= .641
ORGPLN	-.0420	.0382	-.0480	.1451	.1160	.0116
	(69)	(69)	(69)	(69)	(69)	(69)
	P= .732	P= .755	P= .696	P= .234	P= .343	P= .924

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL OP LVL TIME 1 AND TIME 2 VARIABLES
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
SLFPERF	.2224 (30) P= .237	-.1648 (30) P= .384	-.0762 (30) P= .689	-.1827 (30) P= .334	-.0508 (30) P= .790	-.0208 (30) P= .913
SUBPERF	-.4722 (72) P= .000	.1167 (72) P= .329	.3111 (72) P= .008	.7009 (72) P= .000	.5545 (72) P= .000	.5784 (72) P= .000
DESIRE	-.0341 (72) P= .776	-.1693 (72) P= .155	-.4483 (72) P= .000	-.1725 (72) P= .147	.0439 (72) P= .714	-.2046 (72) P= .085
XAVRS	.8209 (71) P= .000	.1903 (71) P= .112	.2791 (71) P= .018	-.4831 (71) P= .000	-.4378 (71) P= .000	-.3664 (71) P= .002
XASGL	.3174 (71) P= .007	.6671 (71) P= .000	.5089 (71) P= .000	.1039 (71) P= .388	.0627 (71) P= .603	.2224 (71) P= .062
XINCOM	.2929 (71) P= .013	.3797 (71) P= .001	.5516 (71) P= .000	.0996 (71) P= .409	.0126 (71) P= .917	.0943 (71) P= .434
XPARGL	-.3844 (71) P= .001	-.1034 (71) P= .391	-.1219 (71) P= .311	.6348 (71) P= .000	.4496 (71) P= .000	.4885 (71) P= .000
XMREW	-.4834 (71) P= .000	-.0786 (71) P= .515	-.1186 (71) P= .324	.3483 (71) P= .003	.6791 (71) P= .000	.5118 (71) P= .000
XPREW	-.4263 (71) P= .000	-.0909 (71) P= .451	-.0417 (71) P= .730	.4438 (71) P= .000	.4915 (71) P= .000	.6640 (71) P= .000
XREPMD	.3590 (71) P= .002	.0738 (71) P= .541	.1898 (71) P= .113	.1033 (71) P= .391	.0184 (71) P= .879	.0766 (71) P= .525
XSTAQUO	.0335 (71) P= .781	-.1360 (71) P= .258	.0778 (71) P= .519	.1644 (71) P= .171	.1961 (71) P= .101	.1980 (71) P= .098

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
XVIS	-.2904 (71) P= .014	-.1446 (71) P= .229	.1419 (71) P= .238	.3953 (71) P= .001	.3050 (71) P= .010	.3504 (71) P= .003
XIDELSM	-.1684 (71) P= .160	.0217 (71) P= .858	.1111 (71) P= .356	.3747 (71) P= .001	.3987 (71) P= .001	.4613 (71) P= .000
XSTMIN	-.2257 (71) P= .058	.0378 (71) P= .754	.2671 (71) P= .024	.5142 (71) P= .000	.4570 (71) P= .000	.4266 (71) P= .000
XINACTN	-.3776 (71) P= .001	-.1345 (71) P= .263	-.1335 (71) P= .267	.4550 (71) P= .000	.2821 (71) P= .017	.2477 (71) P= .037
XTEAM	-.2820 (71) P= .017	-.0672 (71) P= .577	-.1064 (71) P= .377	.4520 (71) P= .000	.3464 (71) P= .003	.3940 (71) P= .001
XSLFREW	-.4032 (71) P= .000	.0392 (71) P= .745	-.0293 (71) P= .809	.2902 (71) P= .014	.3311 (71) P= .005	.3944 (71) P= .001
XOPTHT	-.2681 (71) P= .024	.0022 (71) P= .986	.1376 (71) P= .253	.4762 (71) P= .000	.3297 (71) P= .005	.4465 (71) P= .000
XINDACT	-.3602 (71) P= .002	-.1591 (71) P= .185	-.3146 (71) P= .008	.2878 (71) P= .015	.1838 (71) P= .125	.1364 (71) P= .257
XEFFIC	.1028 (71) P= .394	.0060 (71) P= .960	.0690 (71) P= .567	.1612 (71) P= .179	-.0231 (71) P= .848	.1879 (71) P= .117
XTEAMWK	-.1104 (71) P= .360	-.1274 (71) P= .290	-.0835 (71) P= .489	.1763 (71) P= .141	.0620 (71) P= .607	.1551 (71) P= .197
XSFREW	.0192 (71) P= .874	.0674 (71) P= .576	-.0158 (71) P= .896	-.2235 (71) P= .061	.0123 (71) P= .919	.1542 (71) P= .199

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

-- Correlation Coefficients --

	AVRS	ASGL	INCOM	PARGL	MREW	FREW
XSFGL	-.3279 (71) P= .005	-.1147 (71) P= .341	-.2244 (71) P= .060	.1195 (71) P= .321	.1661 (71) P= .166	.0729 (71) P= .546
XNREW	-.1561 (71) P= .193	.0197 (71) P= .871	.0060 (71) P= .960	-.1030 (71) P= .393	.0207 (71) P= .864	.1348 (71) P= .263
XOPPTHT	.0099 (72) P= .934	-.1198 (72) P= .316	.0779 (72) P= .515	.0671 (72) P= .575	-.0085 (72) P= .944	.1748 (72) P= .142
XSOBS	-.0403 (71) P= .739	-.0666 (71) P= .581	.0399 (71) P= .741	-.0025 (71) P= .984	-.0626 (71) P= .604	.0898 (71) P= .457
XINTSUP	-.2527 (71) P= .033	-.0195 (71) P= .872	-.1174 (71) P= .329	.1614 (71) P= .179	.0768 (71) P= .525	.0864 (71) P= .474
XCTSY	-.2807 (71) P= .018	-.0168 (71) P= .890	.0477 (71) P= .693	.2843 (71) P= .016	.1607 (71) P= .181	.2214 (71) P= .064
XCVNHS	-.1634 (71) P= .173	.0189 (71) P= .876	.0129 (71) P= .915	.0555 (71) P= .645	.1591 (71) P= .185	.0875 (71) P= .468
XUNREL	.1766 (71) P= .141	-.0688 (71) P= .569	.0133 (71) P= .912	-.2503 (71) P= .035	-.1332 (71) P= .268	-.2112 (71) P= .077
XCOMP	.2205 (71) P= .065	-.0137 (71) P= .910	.0913 (71) P= .449	-.2123 (71) P= .075	-.2390 (71) P= .045	-.1471 (71) P= .221
XTOTEFF	-.1647 (60) P= .209	.1182 (60) P= .368	.0609 (60) P= .644	.1003 (60) P= .446	.1993 (60) P= .127	.2045 (60) P= .117
XOUTPUT	.1065 (60) P= .418	.1405 (60) P= .284	.1395 (60) P= .288	-.0020 (60) P= .988	.1258 (60) P= .338	.1199 (60) P= .362

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	AVRS	ASGL	INCOM	PARGL	MREW	PREW
XINTEFF	-.2955	.1059	-.0271	.1704	.2614	.2046
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .022	P= .421	P= .837	P= .193	P= .044	P= .117
XCHNGEFF	-.1487	.0864	.0213	-.0181	.0942	.1543
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .257	P= .512	P= .872	P= .891	P= .474	P= .239
XORGPLN	-.1404	-.0188	.0792	.2084	.0446	.1142
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .284	P= .886	P= .547	P= .110	P= .735	P= .385
XSLFPERF	.0581	-.2222	-.1441	-.0390	-.0700	-.0533
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .662	P= .091	P= .276	P= .769	P= .598	P= .688
XSUBPERF	-.4423	-.0512	.1280	.5211	.4457	.4922
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .671	P= .287	P= .000	P= .000	P= .000
XDESIRE	-.1512	-.1324	-.1127	.1130	.0177	-.0173
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .208	P= .271	P= .349	P= .348	P= .884	P= .886

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
AVRS	.4630 (72) P= .000	-.0067 (72) P= .956	-.3070 (72) P= .009	-.1410 (72) P= .237	-.1704 (72) P= .152	-.4272 (72) P= .000
ASGL	.2748 (72) P= .019	-.1161 (72) P= .331	.1683 (72) P= .158	.1373 (72) P= .250	.2289 (72) P= .053	-.0447 (72) P= .709
INCOM	.3433 (72) P= .003	.0877 (72) P= .464	.3275 (72) P= .005	.2801 (72) P= .017	.4441 (72) P= .000	.0311 (72) P= .795
PARGL	.0965 (72) P= .420	.3084 (72) P= .008	.5545 (72) P= .000	.4513 (72) P= .000	.5385 (72) P= .000	.6128 (72) P= .000
MREW	.0649 (72) P= .588	.2323 (72) P= .050	.5364 (72) P= .000	.4658 (72) P= .000	.4369 (72) P= .000	.3790 (72) P= .001
PREW	.1368 (72) P= .252	.2417 (72) P= .041	.5039 (72) P= .000	.5057 (72) P= .000	.5512 (72) P= .000	.3974 (72) P= .001
REPMD	1.0000 (72) P= .	.3684 (72) P= .001	.3109 (72) P= .008	.3001 (72) P= .010	.4392 (72) P= .000	.2475 (72) P= .036
STAQUO	.3684 (72) P= .001	1.0000 (72) P= .	.5461 (72) P= .000	.6638 (72) P= .000	.4111 (72) P= .000	.4650 (72) P= .000
VIS	.3109 (72) P= .008	.5461 (72) P= .000	1.0000 (72) P= .	.6486 (72) P= .000	.6422 (72) P= .000	.5421 (72) P= .000
IDELSM	.3001 (72) P= .010	.6638 (72) P= .000	.6486 (72) P= .000	1.0000 (72) P= .	.6049 (72) P= .000	.4390 (72) P= .000
STMIN	.4392 (72) P= .000	.4111 (72) P= .000	.6422 (72) P= .000	.6049 (72) P= .000	1.0000 (72) P= .	.5945 (72) P= .000

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
INACTN	.2475	.4650	.5421	.4390	.5945	1.0000
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .036	P= .000	P= .000	P= .000	P= .000	P= .
TEAM	.3721	.4471	.6352	.4998	.5317	.6618
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .001	P= .000	P= .000	P= .000	P= .000	P= .000
SLFREW	.1061	.3190	.5692	.4037	.6045	.6309
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .375	P= .006	P= .000	P= .000	P= .000	P= .000
OPTHT	.2765	.4224	.5412	.4712	.5485	.6580
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .019	P= .000	P= .000	P= .000	P= .000	P= .000
INDACT	-.0287	.0496	.1583	.0523	-.0601	.3961
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .811	P= .679	P= .184	P= .663	P= .616	P= .001
EFFIC	.1752	-.0090	.0007	.0584	-.1790	-.1229
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .141	P= .940	P= .995	P= .626	P= .133	P= .304
TEAMWK	.2388	.3554	.3472	.1687	.1666	.4217
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .043	P= .002	P= .003	P= .157	P= .162	P= .000
SFREW	.0049	-.0454	.2790	.0535	.1685	.1329
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .967	P= .705	P= .018	P= .655	P= .157	P= .266
SFGL	-.1379	.1266	.0063	.0800	.0611	.4123
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .248	P= .289	P= .958	P= .504	P= .610	P= .000
WREW	.0141	-.1122	.0588	-.0588	.0044	-.0292
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .907	P= .348	P= .623	P= .624	P= .971	P= .808
OPPTHT	.2114	.2586	.3216	.2[illegible]8	.2551	.2847
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .075	P= .028	P= .006	P= .061	P= .031	P= .015

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS [redacted]
10:21:44 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
SOBS	.1706 (72) P= .152	-.1125 (72) P= .347	.0688 (72) P= .566	.0669 (72) P= .576	.2057 (72) P= .083	.1100 (72) P= .358
INTSUP	.1703 (72) P= .153	.0431 (72) P= .719	.0716 (72) P= .550	.0915 (72) P= .445	.0575 (72) P= .631	.2194 (72) P= .064
CTSY	.1930 (72) P= .104	.1985 (72) P= .095	.2094 (72) P= .078	.2913 (72) P= .013	.0352 (72) P= .769	.2370 (72) P= .045
CVNWS	-.0396 (72) P= .741	.2369 (72) P= .045	.3723 (72) P= .001	.3109 (72) P= .008	.1555 (72) P= .192	.2781 (72) P= .018
UNREL	.0654 (72) P= .585	-.2541 (72) P= .031	-.1485 (72) P= .213	-.3126 (72) P= .008	-.1953 (72) P= .100	-.1792 (72) P= .132
COMP	-.2536 (72) P= .032	-.3682 (72) P= .001	-.4130 (72) P= .000	-.3467 (72) P= .003	-.3241 (72) P= .005	-.3764 (72) P= .001
TOTEFF	-.1000 (69) P= .414	-.0515 (69) P= .674	.0418 (69) P= .733	.1031 (69) P= .399	-.0256 (69) P= .835	.1868 (69) P= .124
OUTPUT	.0172 (69) P= .888	.1477 (69) P= .226	.0859 (69) P= .483	.3022 (69) P= .012	.1244 (69) P= .309	.1398 (69) P= .252
INTEFF	-.0686 (69) P= .575	-.1127 (69) P= .357	.0010 (69) P= .994	-.0194 (69) P= .874	.0118 (69) P= .923	.1774 (69) P= .145
CHNGEFF	-.1594 (69) P= .191	-.1706 (69) P= .161	.0106 (69) P= .931	-.0124 (69) P= .919	-.1489 (69) P= .222	.1428 (69) P= .242
ORGPLN	-.1132 (69) P= .354	.0591 (69) P= .630	.0872 (69) P= .476	.0906 (69) P= .459	-.1489 (69) P= .222	.1134 (69) P= .353

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL OP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:44 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
SLFPERF	.1484 (30) P= .434	.1653 (30) P= .383	.0726 (30) P= .703	.0732 (30) P= .700	-.1188 (30) P= .532	-.2337 (30) P= .214
SUBPERF	.1018 (72) P= .395	.5169 (72) P= .000	.6815 (72) P= .000	.5777 (72) P= .000	.6943 (72) P= .000	.5926 (72) P= .000
DESIRE	-.2415 (72) P= .041	-.1278 (72) P= .285	-.2701 (72) P= .022	-.0902 (72) P= .451	-.3672 (72) P= .002	-.2523 (72) P= .033
XAVRS	.3747 (71) P= .001	.0179 (71) P= .882	-.2916 (71) P= .014	-.0454 (71) P= .707	-.1535 (71) P= .201	-.4274 (71) P= .000
XASGL	.2883 (71) P= .015	-.0282 (71) P= .816	.1763 (71) P= .141	.1763 (71) P= .141	.2299 (71) P= .054	-.1383 (71) P= .250
XINCOM	.3505 (71) P= .003	.1238 (71) P= .304	.1236 (71) P= .305	.2260 (71) P= .058	.2261 (71) P= .058	-.0315 (71) P= .794
XPARGL	-.0018 (71) P= .988	.1295 (71) P= .282	.3464 (71) P= .003	.2931 (71) P= .013	.2190 (71) P= .067	.3178 (71) P= .007
XMREW	-.0880 (71) P= .465	.0918 (71) P= .446	.2344 (71) P= .049	.2621 (71) P= .027	.1305 (71) P= .278	.2226 (71) P= .062
XPREW	.0208 (71) P= .863	.2164 (71) P= .070	.4828 (71) P= .000	.4029 (71) P= .000	.3487 (71) P= .003	.3757 (71) P= .001
XREPMD	.7310 (71) P= .000	.4251 (71) P= .000	.2135 (71) P= .074	.3595 (71) P= .002	.3562 (71) P= .002	.1984 (71) P= .097
XSTAQUO	.3820 (71) P= .001	.8349 (71) P= .000	.5010 (71) P= .000	.5621 (71) P= .000	.2770 (71) P= .019	.3329 (71) P= .005

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
XVIS	.2355 (71) P= .048	.4748 (71) P= .000	.6150 (71) P= .000	.4122 (71) P= .000	.3433 (71) P= .003	.4924 (71) P= .000
XIDELSM	.1385 (71) P= .249	.4551 (71) P= .000	.4383 (71) P= .000	.5770 (71) P= .000	.3340 (71) P= .004	.2443 (71) P= .040
XSTMIN	.3536 (71) P= .002	.3851 (71) P= .001	.6589 (71) P= .000	.4707 (71) P= .000	.6815 (71) P= .000	.6667 (71) P= .000
XINACTN	.1767 (71) P= .140	.2465 (71) P= .038	.3463 (71) P= .003	.2086 (71) P= .081	.2849 (71) P= .016	.7499 (71) P= .000
XTEAM	.1957 (71) P= .102	.3317 (71) P= .005	.4446 (71) P= .000	.3709 (71) P= .001	.2201 (71) P= .065	.4880 (71) P= .000
XSLFREW	-.0471 (71) P= .696	.1020 (71) P= .397	.2730 (71) P= .021	.2478 (71) P= .037	.2231 (71) P= .061	.3846 (71) P= .001
XOPTHT	.2839 (71) P= .016	.3450 (71) P= .003	.4620 (71) P= .000	.4012 (71) P= .001	.4255 (71) P= .000	.4906 (71) P= .000
XINDACT	.0808 (71) P= .503	.1357 (71) P= .259	.2127 (71) P= .075	.1890 (71) P= .115	.0452 (71) P= .708	.4654 (71) P= .000
XEFFIC	.2739 (71) P= .021	.1621 (71) P= .177	.1103 (71) P= .360	.1390 (71) P= .247	.0348 (71) P= .773	.1028 (71) P= .394
XTEAMWK	.2697 (71) P= .023	.3026 (71) P= .010	.2539 (71) P= .033	.2605 (71) P= .028	.0070 (71) P= .954	.1314 (71) P= .275
XSFREW	.0403 (71) P= .739	-.1031 (71) P= .392	-.0455 (71) P= .706	-.0392 (71) P= .746	.0676 (71) P= .575	-.0624 (71) P= .605

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
XSFOL	-.2340 (71) P= .049	-.1393 (71) P= .247	-.0144 (71) P= .905	.0492 (71) P= .683	-.1450 (71) P= .227	.0678 (71) P= .574
XNREW	-.0818 (71) P= .498	-.1475 (71) P= .219	-.0368 (71) P= .760	.0119 (71) P= .922	.0034 (71) P= .977	-.0471 (71) P= .697
XOFPTHT	.2344 (72) P= .047	.2066 (72) P= .082	.1641 (72) P= .168	.2029 (72) P= .087	.0360 (72) P= .764	-.0337 (72) P= .779
XSOBS	.1116 (71) P= .354	-.0372 (71) P= .758	.0546 (71) P= .651	.0749 (71) P= .535	.1476 (71) P= .219	.0925 (71) P= .443
XINTSUP	.0738 (71) P= .541	.1644 (71) P= .171	.1583 (71) P= .187	.1238 (71) P= .303	-.0067 (71) P= .956	.2941 (71) P= .013
XCTSY	.0647 (71) P= .592	.1922 (71) P= .108	.2523 (71) P= .034	.2518 (71) P= .034	.1176 (71) P= .329	.3761 (71) P= .001
XCVNNS	-.0129 (71) P= .915	.1505 (71) P= .210	.1723 (71) P= .151	.1643 (71) P= .171	-.0732 (71) P= .544	.0333 (71) P= .783
XUNREL	-.0583 (71) P= .629	-.1903 (71) P= .112	-.1819 (71) P= .129	-.1780 (71) P= .137	-.0148 (71) P= .902	-.2465 (71) P= .038
XCOMP	-.1843 (71) P= .124	-.3329 (71) P= .005	-.3903 (71) P= .001	-.2907 (71) P= .014	-.0714 (71) P= .554	-.3512 (71) P= .003
XTOTEFF	.0515 (60) P= .696	-.0250 (60) P= .849	.1460 (60) P= .266	.1922 (60) P= .141	.2003 (60) P= .125	.0701 (60) P= .594
XOUTPUT	.1305 (60) P= .320	.1375 (60) P= .295	.0935 (60) P= .477	.2565 (60) P= .048	.2112 (60) P= .105	-.1274 (60) P= .332

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	REPMD	STAQUO	VIS	IDELSM	STMIN	INACTN
XINTEFF	.0101 (60) P= .939	-.0847 (60) P= .520	.1796 (60) P= .170	.0801 (60) P= .543	.1678 (60) P= .200	.1936 (60) P= .138
XCHNGEFF	-.0535 (60) P= .685	-.1497 (60) P= .254	.0432 (60) P= .743	.0828 (60) P= .529	.0914 (60) P= .487	-.0524 (60) P= .691
XORGPLN	.0777 (60) P= .555	.0475 (60) P= .718	.1065 (60) P= .418	.1797 (60) P= .169	.1306 (60) P= .320	.2702 (60) P= .037
XSLFPERF	.0270 (59) P= .839	.2383 (59) P= .069	-.0310 (59) P= .816	.1213 (59) P= .360	-.0038 (59) P= .977	-.0127 (59) P= .924
XSUBPERF	.1296 (71) P= .281	.4103 (71) P= .000	.5302 (71) P= .000	.4215 (71) P= .000	.5051 (71) P= .000	.5290 (71) P= .000
XDESIRE	.0358 (71) P= .767	.2232 (71) P= .061	-.0059 (71) P= .961	.0017 (71) P= .989	-.2420 (71) P= .042	.0501 (71) P= .678

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	INDACT	EFFIC	TEAMNK
AVRS	-.3258 (72) P= .005	-.3958 (72) P= .001	-.3093 (72) P= .008	-.4512 (72) P= .000	-.0285 (72) P= .812	-.1575 (72) P= .187
ASGL	.0790 (72) P= .510	.0699 (72) P= .559	.0126 (72) P= .917	-.0641 (72) P= .593	.0539 (72) P= .653	-.0454 (72) P= .705
INCOM	.1077 (72) P= .368	.2175 (72) P= .067	.3045 (72) P= .009	-.4266 (72) P= .000	-.1522 (72) P= .202	-.0028 (72) P= .981
PARGL	.4963 (72) P= .000	.5843 (72) P= .000	.5649 (72) P= .000	.2606 (72) P= .027	-.0998 (72) P= .404	.2974 (72) P= .011
MREW	.4038 (72) P= .000	.5338 (72) P= .000	.3454 (72) P= .003	.2962 (72) P= .012	.1000 (72) P= .403	.1520 (72) P= .203
PREW	.4650 (72) P= .000	.5326 (72) P= .000	.4990 (72) P= .000	.1079 (72) P= .367	.0450 (72) P= .707	.0282 (72) P= .814
REPMD	.3721 (72) P= .001	.1061 (72) P= .375	.2765 (72) P= .019	-.0287 (72) P= .811	.1752 (72) P= .141	.2388 (72) P= .043
STAQUO	.4471 (72) P= .000	.3190 (72) P= .006	.4224 (72) P= .000	.0496 (72) P= .679	-.0090 (72) P= .940	.3554 (72) P= .002
VIS	.6352 (72) P= .000	.5692 (72) P= .000	.5412 (72) P= .000	.1583 (72) P= .184	.0007 (72) P= .995	.3472 (72) P= .003
IDELSM	.4998 (72) P= .000	.4037 (72) P= .000	.4712 (72) P= .000	.0523 (72) P= .663	.0584 (72) P= .626	.1687 (72) P= .157
STMIN	.5317 (72) P= .000	.6045 (72) P= .000	.5485 (72) P= .000	-.0601 (72) P= .616	-.1790 (72) P= .133	.1666 (72) P= .162

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS
10:21:45 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	INDACT	EFFIC	TEAMWK
INACTN	.6618 (72) P= .000	.6309 (72) P= .000	.6580 (72) P= .000	.3941 (72) P= .001	-.1229 (72) P= .304	.4217 (72) P= .000
TEAM	1.0000 (72) P= .	.4444 (72) P= .000	.5904 (72) P= .000	.3231 (72) P= .006	.1247 (72) P= .297	.5163 (72) P= .000
SLFREW	.4444 (72) P= .000	1.0000 (72) P= .	.6272 (72) P= .000	.0931 (72) P= .437	-.2472 (72) P= .036	.2989 (72) P= .011
OPTHT	.5904 (72) P= .000	.6272 (72) P= .000	1.0000 (72) P= .	.1218 (72) P= .308	-.1499 (72) P= .209	.4685 (72) P= .000
INDACT	.3231 (72) P= .006	.0931 (72) P= .437	.1218 (72) P= .308	1.0000 (72) P= .	.4828 (72) P= .000	.2167 (72) P= .068
EFFIC	.1247 (72) P= .297	-.2472 (72) P= .036	-.1499 (72) P= .209	.4828 (72) P= .000	1.0000 (72) P= .	.0262 (72) P= .827
TEAMWK	.5163 (72) P= .000	.2989 (72) P= .011	.4685 (72) P= .000	.2167 (72) P= .068	.0262 (72) P= .827	1.0000 (72) P= .
SFREW	.1758 (72) P= .140	.3858 (72) P= .001	.1707 (72) P= .152	.2895 (72) P= .014	.1193 (72) P= .318	.1749 (72) P= .142
SFGL	.0423 (72) P= .724	.2505 (72) P= .034	.1786 (72) P= .133	.4049 (72) P= .000	.1091 (72) P= .362	.2229 (72) P= .060
NREW	-.0813 (72) P= .497	.1767 (72) P= .138	-.0646 (72) P= .590	.2192 (72) P= .064	.1752 (72) P= .141	.1271 (72) P= .287
OPPTHT	.1776 (72) P= .135	.2262 (72) P= .056	.4399 (72) P= .000	.1078 (72) P= .368	.2909 (72) P= .013	.1665 (72) P= .162

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	INDACT	EFFIC	TEAMWK
SOBS	-.0093 (72) P= .938	.0983 (72) P= .411	.1088 (72) P= .363	.0755 (72) P= .528	.2091 (72) P= .078	-.1781 (72) P= .134
INTSUP	.3778 (72) P= .001	.2243 (72) P= .058	.1859 (72) P= .118	.1264 (72) P= .290	.0754 (72) P= .529	.3468 (72) P= .003
CTSY	.3327 (72) P= .004	.1654 (72) P= .165	.2130 (72) P= .072	.2321 (72) P= .050	.1534 (72) P= .198	.3253 (72) P= .005
CVNHS	.2137 (72) P= .071	.3870 (72) P= .001	.2763 (72) P= .019	.1210 (72) P= .311	.0039 (72) P= .974	.2162 (72) P= .068
UNREL	-.2403 (72) P= .042	-.2343 (72) P= .048	-.2202 (72) P= .063	.0453 (72) P= .706	-.0401 (72) P= .738	-.1898 (72) P= .110
COMP	-.4926 (72) P= .000	-.3360 (72) P= .004	-.3060 (72) P= .009	-.0604 (72) P= .614	-.0404 (72) P= .736	-.3052 (72) P= .009
TOTEFF	.0522 (69) P= .670	.1145 (69) P= .349	.1009 (69) P= .409	.1583 (69) P= .194	-.1339 (69) P= .273	.1363 (69) P= .264
OUTPUT	.0565 (69) P= .645	.1267 (69) P= .300	.0170 (69) P= .890	.0535 (69) P= .662	-.1617 (69) P= .184	.0874 (69) P= .475
INTEFF	.0858 (69) P= .484	.0751 (69) P= .540	.1416 (69) P= .246	.1660 (69) P= .173	-.0925 (69) P= .450	.1377 (69) P= .259
CHNGEFF	-.0186 (69) P= .880	.0637 (69) P= .603	.0972 (69) P= .427	.1534 (69) P= .208	.0030 (69) P= .981	.0002 (69) P= .999
ORGPLN	.0367 (69) P= .764	.0943 (69) P= .441	.0754 (69) P= .538	.1060 (69) P= .395	-.1720 (69) P= .158	.2872 (69) P= .017

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS [redacted]
10:21:45 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	INDACT	EFFIC	TEAMWK
SLFPERF	-.0451 (30) P= .813	-.2382 (30) P= .205	-.2532 (30) P= .177	.1097 (30) P= .564	.4065 (30) P= .026	-.0351 (30) P= .854
SUBPERF	.4954 (72) P= .000	.6011 (72) P= .000	.5160 (72) P= .000	.1763 (72) P= .138	-.0852 (72) P= .477	.2901 (72) P= .013
DESIRE	-.1733 (72) P= .145	-.2811 (72) P= .017	-.3448 (72) P= .003	.2818 (72) P= .016	.1518 (72) P= .203	-.1345 (72) P= .260
XAVRS	-.2883 (71) P= .015	-.4616 (71) P= .000	-.2899 (71) P= .014	-.5227 (71) P= .000	-.0179 (71) P= .882	-.2384 (71) P= .045
XASGL	.0661 (71) P= .584	.0915 (71) P= .448	.0501 (71) P= .678	-.2824 (71) P= .017	-.0043 (71) P= .972	-.0514 (71) P= .671
XINCOM	.1218 (71) P= .311	.0775 (71) P= .521	.0401 (71) P= .740	-.3068 (71) P= .009	-.0115 (71) P= .924	.1324 (71) P= .271
XPARGL	.3647 (71) P= .002	.2924 (71) P= .013	.2459 (71) P= .039	.4093 (71) P= .000	.1697 (71) P= .157	.1335 (71) P= .267
XMREW	.2728 (71) P= .021	.2968 (71) P= .012	.2272 (71) P= .057	.4498 (71) P= .000	.3250 (71) P= .006	.0435 (71) P= .718
XPREW	.4034 (71) P= .000	.4267 (71) P= .000	.3268 (71) P= .005	.3127 (71) P= .008	.1822 (71) P= .128	.1604 (71) P= .181
XREPMD	.2877 (71) P= .015	.0384 (71) P= .751	.2444 (71) P= .040	-.1362 (71) P= .258	.1983 (71) P= .097	.2191 (71) P= .066
XSTAQUD	.4398 (71) P= .000	.2138 (71) P= .073	.2987 (71) P= .011	.1254 (71) P= .298	.1815 (71) P= .130	.2467 (71) P= .038

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	INDACT	EFFIC	TEAMWK
XVIS	.4965 (71) P= .000	.4559 (71) P= .000	.4568 (71) P= .000	.1342 (71) P= .265	-.0027 (71) P= .982	.4186 (71) P= .000
XIDELSM	.3877 (71) P= .001	.3015 (71) P= .011	.2661 (71) P= .025	.0857 (71) P= .477	.0867 (71) P= .472	.1770 (71) P= .140
XSTMIN	.6176 (71) P= .000	.6598 (71) P= .000	.5674 (71) P= .000	.2013 (71) P= .092	-.0323 (71) P= .789	.3496 (71) P= .003
XINACTN	.5896 (71) P= .000	.4958 (71) P= .000	.5332 (71) P= .000	.5219 (71) P= .000	.0511 (71) P= .672	.5025 (71) P= .000
XTEAM	.6125 (71) P= .000	.3485 (71) P= .003	.4287 (71) P= .000	.4386 (71) P= .000	.2228 (71) P= .062	.3770 (71) P= .001
XSLFREW	.4051 (71) P= .000	.5255 (71) P= .000	.3453 (71) P= .003	.3004 (71) P= .011	.0544 (71) P= .652	.1915 (71) P= .110
XOPTHT	.6216 (71) P= .000	.4422 (71) P= .000	.6460 (71) P= .000	.2641 (71) P= .026	.0851 (71) P= .480	.4476 (71) P= .000
XINDACT	.3643 (71) P= .002	.1640 (71) P= .172	.2639 (71) P= .026	.7438 (71) P= .000	.3461 (71) P= .003	.1395 (71) P= .246
XEFFIC	.0982 (71) P= .415	.0271 (71) P= .823	.1215 (71) P= .313	.1509 (71) P= .209	.4968 (71) P= .000	.0952 (71) P= .430
XTEAMWK	.3560 (71) P= .002	-.0749 (71) P= .535	.2198 (71) P= .066	.2124 (71) P= .075	.4116 (71) P= .000	.4167 (71) P= .000
XSFREW	.0056 (71) P= .963	.0606 (71) P= .616	-.0486 (71) P= .687	.0578 (71) P= .632	.0742 (71) P= .539	-.2379 (71) P= .046

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	TEAM	SLFREW	OPTHT	INDACT	EFFIC	TEAMWK
XSFGL	.0281 (71) P= .816	.1163 (71) P= .334	.0167 (71) P= .890	.4093 (71) P= .000	.1794 (71) P= .134	-.0371 (71) P= .759
XNREW	-.1729 (71) P= .149	.0423 (71) P= .726	.0000 (71) P=1.000	.1081 (71) P= .369	.1582 (71) P= .188	-.2262 (71) P= .058
XOPPTHT	.0793 (72) P= .508	-.0703 (72) P= .558	.1436 (72) P= .229	.1326 (72) P= .267	.4793 (72) P= .000	.0694 (72) P= .562
XSOBS	.0974 (71) P= .419	-.0399 (71) P= .741	.0415 (71) P= .731	.1187 (71) P= .324	.3134 (71) P= .008	-.1104 (71) P= .360
XINTSUP	.4436 (71) P= .000	.1851 (71) P= .122	.1986 (71) P= .097	.2278 (71) P= .056	.0963 (71) P= .424	.3965 (71) P= .001
XCTSY	.5394 (71) P= .000	.1648 (71) P= .170	.2785 (71) P= .019	.3082 (71) P= .009	.2277 (71) P= .056	.3337 (71) P= .004
XCVNWS	.0891 (71) P= .460	.0881 (71) P= .465	-.0013 (71) P= .992	.0642 (71) P= .595	.0693 (71) P= .566	.0592 (71) P= .624
XUNREL	-.4196 (71) P= .000	-.1606 (71) P= .181	-.2636 (71) P= .026	-.1297 (71) P= .281	-.1488 (71) P= .216	-.2642 (71) P= .026
XCOMP	-.5282 (71) P= .000	-.2232 (71) P= .061	-.1743 (71) P= .146	-.3194 (71) P= .007	-.0813 (71) P= .500	-.4474 (71) P= .000
XTOTEFF	.1436 (60) P= .274	.1257 (60) P= .338	.1402 (60) P= .285	.1391 (60) P= .289	-.0986 (60) P= .453	.0690 (60) P= .600
XOUTPUT	-.0593 (60) P= .653	-.0037 (60) P= .978	-.0305 (60) P= .817	-.0846 (60) P= .520	-.1510 (60) P= .249	-.0083 (60) P= .950

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	TEAM	SLFREN	OPTHT	INDACT	EFFIC	TEAMHK
XINTEFF	.2578	.2339	.2603	.2498	-.0612	.1823
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .047	P= .072	P= .045	P= .054	P= .642	P= .163
XCHNGEFF	-.0583	.0153	-.0716	.1180	.0197	-.1656
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .658	P= .908	P= .587	P= .369	P= .881	P= .206
XORGPLN	.3840	.1348	.3419	.1275	-.1368	.2497
	(60)	(60)	(60)	(60)	(60)	(60)
	P= .002	P= .305	P= .008	P= .332	P= .297	P= .054
XSLFPERF	-.0507	-.0669	.1245	-.0590	.0833	-.0495
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .703	P= .615	P= .347	P= .657	P= .530	P= .710
XSUBPERF	.4532	.5107	.4078	.2872	.0403	.3177
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .015	P= .739	P= .007
XDESIRE	.1505	.0297	.1803	.2678	.2325	.1994
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .210	P= .806	P= .132	P= .024	P= .051	P= .096

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-95 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
AVRS	-.1459	-.3857	-.1703	-.1294	.0106	-.1169
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .221	P= .001	P= .153	P= .279	P= .929	P= .328
ASGL	.2179	-.3252	.2356	-.0716	-.0687	.1535
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .066	P= .005	P= .046	P= .550	P= .566	P= .198
INCOM	.0083	-.3028	-.0980	.1760	.0458	.0084
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .945	P= .010	P= .413	P= .139	P= .702	P= .944
PARGL	.0397	.3048	-.0420	.2459	.1484	.2062
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .740	P= .009	P= .726	P= .037	P= .214	P= .082
MREW	.2691	.1323	.1633	.0378	.0594	.1649
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .022	P= .268	P= .170	P= .753	P= .620	P= .166
PREW	.2574	.0268	.0061	.1617	.2008	.1604
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .029	P= .823	P= .960	P= .175	P= .091	P= .178
REPMD	.0049	-.1379	.0141	.2114	.1706	.1703
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .967	P= .248	P= .907	P= .075	P= .152	P= .153
STAQUO	-.0454	.1266	-.1122	.2586	-.1125	.0431
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .705	P= .289	P= .348	P= .028	P= .347	P= .719
VIS	.2790	.0063	.0588	.3216	.0688	.0716
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .018	P= .958	P= .623	P= .006	P= .566	P= .550
IDELSM	.0535	.0800	-.0588	.2218	.0669	.0915
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .655	P= .504	P= .624	P= .061	P= .576	P= .445
STMIN	.1685	.0611	.0044	.2551	.2057	.0575
	(72)	(72)	(72)	(72)	(72)	(72)
	P= .157	P= .610	P= .971	P= .031	P= .083	P= .631

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:45 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
INACTN	.1329 (72) P= .266	.4123 (72) P= .000	-.0292 (72) P= .808	.2847 (72) P= .015	.1100 (72) P= .358	.2194 (72) P= .064
TEAM	.1758 (72) P= .140	.0423 (72) P= .724	-.0813 (72) P= .497	.1776 (72) P= .135	-.0093 (72) P= .938	.3778 (72) P= .001
SLFREW	.3858 (72) P= .001	.2505 (72) P= .034	.1767 (72) P= .138	.2262 (72) P= .056	.0983 (72) P= .411	.2243 (72) P= .058
OPTHT	.1707 (72) P= .152	.1786 (72) P= .133	-.0646 (72) P= .590	.4399 (72) P= .000	.1088 (72) P= .363	.1859 (72) P= .118
INDACT	.2895 (72) P= .014	.4049 (72) P= .000	.2192 (72) P= .064	.1078 (72) P= .368	.0755 (72) P= .528	.1264 (72) P= .290
EFFIC	.1193 (72) P= .318	.1091 (72) P= .362	.1752 (72) P= .141	.2909 (72) P= .013	.2091 (72) P= .078	.0754 (72) P= .529
TEAMWK	.1749 (72) P= .142	.2229 (72) P= .060	.1271 (72) P= .287	.1665 (72) P= .162	-.1781 (72) P= .134	.3468 (72) P= .003
SFREW	1.0000 (72) P= .	.0193 (72) P= .872	.5596 (72) P= .000	-.0346 (72) P= .773	.0866 (72) P= .470	.1227 (72) P= .304
SFGL	.0193 (72) P= .872	1.0000 (72) P= .	.0536 (72) P= .655	.3071 (72) P= .009	.1381 (72) P= .247	.0788 (72) P= .510
NREW	.5596 (72) P= .000	.0536 (72) P= .655	1.0000 (72) P= .	.0551 (72) P= .646	-.0757 (72) P= .528	.1184 (72) P= .322
OPPTHT	-.0346 (72) P= .773	.3071 (72) P= .009	.0551 (72) P= .646	1.0000 (73) P= .	.1419 (72) P= .234	-.0838 (72) P= .484

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
SOBS	.0866 (72) P= .470	.1381 (72) P= .247	-.0757 (72) P= .528	.1419 (72) P= .234	1.0000 (72) P= .	.0551 (72) P= .645
INTSUP	.1227 (72) P= .304	.0788 (72) P= .510	.1184 (72) P= .322	-.0838 (72) P= .484	.0551 (72) P= .645	1.0000 (72) P= .
CTSY	.1507 (72) P= .206	.0507 (72) P= .672	.2021 (72) P= .089	-.0037 (72) P= .976	-.0091 (72) P= .939	.7463 (72) P= .000
CVNNS	.1861 (72) P= .117	.0412 (72) P= .731	.1255 (72) P= .294	.1182 (72) P= .323	-.0272 (72) P= .821	.3270 (72) P= .005
UNREL	-.0405 (72) P= .736	-.1275 (72) P= .286	.0188 (72) P= .876	-.1533 (72) P= .199	.0740 (72) P= .537	-.3974 (72) P= .001
COMP	.0574 (72) P= .632	-.0029 (72) P= .981	.0503 (72) P= .675	-.1152 (72) P= .335	-.1513 (72) P= .205	-.5683 (72) P= .000
TOTEFF	-.0665 (69) P= .587	.2311 (69) P= .056	.0204 (69) P= .868	.0711 (70) P= .559	.0446 (69) P= .716	.1533 (69) P= .209
OUTPUT	-.0335 (69) P= .785	.2273 (69) P= .060	-.0608 (69) P= .619	.0146 (70) P= .904	.0215 (69) P= .861	.0764 (69) P= .533
INTEFF	-.1225 (69) P= .316	.2134 (69) P= .078	.0004 (69) P= .997	.0834 (70) P= .492	.0789 (69) P= .519	.1840 (69) P= .130
CHNGEFF	-.0368 (69) P= .764	.1651 (69) P= .175	.0640 (69) P= .601	.1369 (70) P= .259	.0103 (69) P= .933	.1019 (69) P= .405
ORGPLN	.0884 (69) P= .470	.0363 (69) P= .767	.1019 (69) P= .405	-.0005 (70) P= .997	-.0483 (69) P= .693	.0702 (69) P= .567

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:46 The University of Maryland CSC IBM 3031GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
SLFPERF	.0610 (30) P= .749	.1452 (30) P= .444	-.1216 (30) P= .522	.2851 (31) P= .120	.0693 (30) P= .716	-.1470 (30) P= .438
SUBPERF	.1572 (72) P= .187	.1559 (72) P= .191	.0900 (72) P= .452	.3049 (72) P= .009	.0314 (72) P= .793	.1017 (72) P= .395
DESIRE	.0436 (72) P= .716	.0657 (72) P= .583	.1047 (72) P= .381	-.2309 (72) P= .051	-.2898 (72) P= .014	-.1522 (72) P= .202
XAVRS	-.2633 (71) P= .027	-.3925 (71) P= .001	-.2952 (71) P= .012	-.1750 (71) P= .144	.1204 (71) P= .317	-.1216 (71) P= .312
XASGL	.1259 (71) P= .295	-.2906 (71) P= .014	.1611 (71) P= .180	.0325 (71) P= .788	-.0678 (71) P= .574	.0389 (71) P= .747
XINCOM	.0047 (71) P= .969	-.0865 (71) P= .473	.0582 (71) P= .629	-.0262 (71) P= .828	-.0652 (71) P= .589	.0771 (71) P= .523
XPARGL	.1755 (71) P= .143	.2955 (71) P= .012	.0494 (71) P= .683	.0897 (71) P= .457	.1815 (71) P= .130	.0762 (71) P= .528
XMREW	.2073 (71) P= .083	.3158 (71) P= .007	.2185 (71) P= .067	.2149 (71) P= .072	.0236 (71) P= .845	.1755 (71) P= .143
XPREW	.3203 (71) P= .006	.3133 (71) P= .008	.0857 (71) P= .477	.2165 (71) P= .070	.0800 (71) P= .507	.1759 (71) P= .142
XREPMD	-.1257 (71) P= .296	.1048 (71) P= .384	-.1365 (71) P= .256	.2809 (71) P= .018	.1651 (71) P= .169	.1137 (71) P= .345
XSTAQUO	-.0022 (71) P= .986	.1080 (71) P= .370	-.0805 (71) P= .505	.2828 (71) P= .017	-.0574 (71) P= .634	.0376 (71) P= .756

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
XVIS	.1328 (71) P= .270	.3040 (71) P= .010	-.0376 (71) P= .756	.2882 (71) P= .015	-.1049 (71) P= .384	.1398 (71) P= .245
XIDELSM	.1732 (71) P= .149	.0856 (71) P= .478	.0352 (71) P= .771	.1308 (71) P= .277	-.1326 (71) P= .270	.0268 (71) P= .824
XSTMIN	.2816 (71) P= .017	.2458 (71) P= .039	.1068 (71) P= .375	.3514 (71) P= .003	.1985 (71) P= .097	.1640 (71) P= .172
XINACTN	.2385 (71) P= .045	.4024 (71) P= .001	.1307 (71) P= .277	.1777 (71) P= .138	.0551 (71) P= .648	.2407 (71) P= .043
XTEAM	.2296 (71) P= .054	.2234 (71) P= .061	.0352 (71) P= .771	.1856 (71) P= .121	.1220 (71) P= .311	.3555 (71) P= .002
XSLFREW	.5531 (71) P= .000	.2838 (71) P= .016	.5271 (71) P= .000	.1166 (71) P= .333	.0401 (71) P= .740	.2358 (71) P= .048
XOPTHT	.2760 (71) P= .020	.2336 (71) P= .050	.1743 (71) P= .146	.2992 (71) P= .011	-.0214 (71) P= .859	.2347 (71) P= .049
XINDACT	.1230 (71) P= .307	.3547 (71) P= .002	.0503 (71) P= .677	.2725 (71) P= .021	.1727 (71) P= .150	.1895 (71) P= .113
XEFFIC	.0099 (71) P= .935	.1544 (71) P= .199	-.0195 (71) P= .872	.4297 (71) P= .000	.1934 (71) P= .106	.1676 (71) P= .162
XTEAMWK	-.1119 (71) P= .353	.1304 (71) P= .278	-.1209 (71) P= .315	.2733 (71) P= .021	.0957 (71) P= .427	.2472 (71) P= .038
XSFREW	.5303 (71) P= .000	-.1293 (71) P= .283	.3860 (71) P= .001	-.0955 (71) P= .428	.2499 (71) P= .036	-.0520 (71) P= .667

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
XSFGL	.0644 (71) P= .594	.2917 (71) P= .014	.3034 (71) P= .010	.1625 (71) P= .176	.0528 (71) P= .662	.0474 (71) P= .695
XNREW	.2289 (71) P= .055	.0253 (71) P= .834	.4873 (71) P= .000	.0088 (71) P= .942	.3271 (71) P= .005	-.0597 (71) P= .621
XOPPTHT	-.1145 (72) P= .338	.0030 (72) P= .980	.0208 (72) P= .863	.5015 (73) P= .000	.1107 (72) P= .354	-.0278 (72) P= .817
XSOBS	.0938 (71) P= .436	.0558 (71) P= .644	-.0193 (71) P= .873	.1698 (71) P= .157	.4639 (71) P= .000	.0615 (71) P= .610
XINTSUP	.0837 (71) P= .488	.1225 (71) P= .309	.1205 (71) P= .317	-.0695 (71) P= .565	-.0480 (71) P= .691	.7492 (71) P= .000
XCTSY	.1307 (71) P= .277	.1977 (71) P= .098	.0009 (71) P= .994	.0454 (71) P= .707	-.1190 (71) P= .323	.6041 (71) P= .000
XCVNHS	.1824 (71) P= .128	-.0209 (71) P= .863	.1326 (71) P= .270	-.1448 (71) P= .228	-.0124 (71) P= .918	.3900 (71) P= .001
XUNREL	.0361 (71) P= .765	-.0937 (71) P= .437	-.0225 (71) P= .852	-.2194 (71) P= .066	.1832 (71) P= .126	-.4287 (71) P= .000
XCOMP	-.0973 (71) P= .420	.0266 (71) P= .826	-.1263 (71) P= .294	.1131 (71) P= .348	.2936 (71) P= .013	-.4475 (71) P= .000
XTOTEFF	-.0006 (60) P= .996	.0350 (60) P= .790	-.0234 (60) P= .859	.0468 (61) P= .720	.0466 (60) P= .724	.1198 (60) P= .362
XOUTPUT	-.0452 (60) P= .731	-.0861 (60) P= .513	-.0471 (60) P= .721	.0[illegible] (61) P= .782	.0476 (60) P= .718	.0022 (60) P= .987

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

-- Correlation Coefficients --

	SFREW	SFGL	NREW	OPPTHT	SOBS	INTSUP
XINTEFF	.0724	.1536	.0428	.0759	.0062	.1816
	(60)	(60)	(60)	(61)	(60)	(60)
	P= .583	P= .241	P= .745	P= .561	P= .963	P= .165
XCHNGEFF	.0258	.0231	.0135	-.0011	.0335	.0530
	(60)	(60)	(60)	(61)	(60)	(60)
	P= .845	P= .861	P= .918	P= .993	P= .799	P= .688
XORGPLN	-.0880	-.0140	-.1653	.0088	.0950	.1234
	(60)	(60)	(60)	(61)	(60)	(60)
	P= .504	P= .916	P= .207	P= .946	P= .470	P= .347
XSLFPERF	-.1952	.2073	-.1754	.1938	.1929	-.1239
	(59)	(59)	(59)	(60)	(59)	(59)
	P= .139	P= .115	P= .184	P= .138	P= .143	P= .350
XSUBPERF	.2152	.2913	.1515	.3199	-.0668	.0336
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .072	P= .014	P= .207	P= .007	P= .580	P= .781
XDESIRE	-.0837	.0998	.0040	.3012	-.2962	.0323
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .488	P= .407	P= .974	P= .011	P= .012	P= .789

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	CTSY	CVNMS	UNREL	COMP	TOTEFF	OUTPUT
AVRS	-.1393	-.2894	.1717	.1986	-.1794	.0389
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .243	P= .014	P= .149	P= .094	P= .140	P= .751
ASGL	.1442	.1660	-.1820	-.0210	.0404	.0511
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .227	P= .163	P= .126	P= .861	P= .742	P= .677
INCOM	.0142	.0886	-.1592	-.1369	-.0656	-.0136
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .906	P= .459	P= .182	P= .252	P= .592	P= .912
PARGL	.2217	.4022	-.2969	-.3704	.2147	.1988
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .061	P= .000	P= .011	P= .001	P= .076	P= .101
MREW	.2171	.2882	-.2488	-.3869	.0959	.1528
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .067	P= .014	P= .035	P= .001	P= .433	P= .210
PREW	.1455	.2503	-.2868	-.3322	.0089	.0216
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .223	P= .034	P= .015	P= .004	P= .942	P= .860
REPMD	.1930	-.0396	.0654	-.2536	-.1000	.0172
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .104	P= .741	P= .585	P= .032	P= .414	P= .888
STAQUO	.1985	.2369	-.2541	-.3682	-.0515	.1477
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .095	P= .045	P= .031	P= .001	P= .674	P= .226
VIS	.2094	.3723	-.1485	-.4130	.0418	.0859
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .078	P= .001	P= .213	P= .000	P= .733	P= .483
IDELSM	.2913	.3109	-.3126	-.3467	.1031	.3022
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .013	P= .008	P= .008	P= .003	P= .399	P= .012
STMIN	.0352	.1555	-.1953	-.3241	-.0256	.1244
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .769	P= .192	P= .100	P= .005	P= .835	P= .309

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	CTSY	CVNWS	UNREL	COMP	TOTEFF	OUTPUT
INACTN	.2370 (72) P= .045	.2781 (72) P= .018	-.1792 (72) P= .132	-.3764 (72) P= .001	.1868 (69) P= .124	.1398 (69) P= .252
TEAM	.3327 (72) P= .004	.2137 (72) P= .071	-.2403 (72) P= .042	-.4926 (72) P= .000	.0522 (69) P= .670	.0565 (69) P= .645
SLFREW	.1654 (72) P= .165	.3870 (72) P= .001	-.2343 (72) P= .048	-.3360 (72) P= .004	.1145 (69) P= .349	.1267 (69) P= .300
OPTHT	.2130 (72) P= .072	.2763 (72) P= .019	-.2202 (72) P= .063	-.3060 (72) P= .009	.1009 (69) P= .409	.0170 (69) P= .890
INDACT	.2321 (72) P= .050	.1210 (72) P= .311	.0453 (72) P= .706	-.0604 (72) P= .614	.1583 (69) P= .194	.0535 (69) P= .662
EFFIC	.1534 (72) P= .198	.0039 (72) P= .974	-.0401 (72) P= .738	-.0404 (72) P= .736	-.1339 (69) P= .273	-.1617 (69) P= .184
TEAMWK	.3253 (72) P= .005	.2162 (72) P= .068	-.1898 (72) P= .110	-.3052 (72) P= .009	.1363 (69) P= .264	.0874 (69) P= .475
SFREW	.1507 (72) P= .206	.1861 (72) P= .117	-.0405 (72) P= .736	.0574 (72) P= .632	-.0665 (69) P= .587	-.0335 (69) P= .785
SFGL	.0507 (72) P= .672	.0412 (72) P= .731	-.1275 (72) P= .286	-.0029 (72) P= .981	.2311 (69) P= .056	.2273 (69) P= .060
NREW	.2021 (72) P= .089	.1255 (72) P= .294	.0188 (72) P= .876	.0503 (72) P= .675	.0204 (69) P= .868	-.0608 (69) P= .619
OPPTHT	-.0037 (72) P= .976	.1182 (72) P= .323	-.1533 (72) P= .199	-.1152 (72) P= .335	.0711 (70) P= .559	.0146 (70) P= .904

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	CTSY	CVNHS	UNREL	COMP	TOTEFF	OUTPUT
SOBS	-.0091	-.0272	.0740	-.1513	.0446	.0215
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .939	P= .821	P= .537	P= .205	P= .716	P= .861
INTSUP	.7463	.3270	-.3974	-.5683	.1533	.0764
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .000	P= .005	P= .001	P= .000	P= .209	P= .533
CTSY	1.0000	.4486	-.4613	-.6092	.2377	.1698
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .	P= .000	P= .000	P= .000	P= .049	P= .163
CVNHS	.4486	1.0000	-.3689	-.4329	.1870	.1001
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .000	P= .	P= .001	P= .000	P= .124	P= .413
UNREL	-.4613	-.3689	1.0000	.5065	-.1124	-.1349
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .000	P= .001	P= .	P= .000	P= .358	P= .269
COMP	-.6092	-.4329	.5065	1.0000	-.1003	-.1620
	(72)	(72)	(72)	(72)	(69)	(69)
	P= .000	P= .000	P= .000	P= .	P= .412	P= .184
TOTEFF	.2377	.1870	-.1124	-.1003	1.0000	.7329
	(69)	(69)	(69)	(69)	(70)	(70)
	P= .049	P= .124	P= .358	P= .412	P= .	P= .000
OUTPUT	.1698	.1001	-.1349	-.1620	.7329	1.0000
	(69)	(69)	(69)	(69)	(70)	(70)
	P= .163	P= .413	P= .269	P= .184	P= .000	P= .
INTEFF	.2133	.2100	-.1377	-.1414	.8508	.4338
	(69)	(69)	(69)	(69)	(70)	(70)
	P= .078	P= .083	P= .259	P= .246	P= .000	P= .000
CHNGEFF	.2278	.0884	-.0190	-.0011	.7333	.3132
	(69)	(69)	(69)	(69)	(70)	(70)
	P= .060	P= .470	P= .877	P= .993	P= .000	P= .008
ORGPLN	.0767	.1003	.0077	.1260	.6441	.4543
	(69)	(69)	(69)	(69)	(70)	(70)
	P= .531	P= .412	P= .950	P= .302	P= .000	P= .000

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	CTSY	CVNWS	UNREL	COMP	TOTEFF	OUTPUT
SLFPERF	-.0399 (30) P= .834	-.0554 (30) P= .771	.1166 (30) P= .540	.0497 (30) P= .794	-.1090 (31) P= .560	.0791 (31) P= .672
SUBPERF	.1466 (72) P= .219	.3757 (72) P= .001	-.3103 (72) P= .008	-.3957 (72) P= .001	.1398 (69) P= .252	.2594 (69) P= .031
DESIRE	-.0821 (72) P= .493	-.1852 (72) P= .119	.0270 (72) P= .822	.2327 (72) P= .049	.0469 (69) P= .702	.1467 (69) P= .229
XAVRS	-.0864 (71) P= .474	-.2488 (71) P= .036	.0080 (71) P= .947	.0579 (71) P= .631	-.1272 (68) P= .301	.0388 (68) P= .753
XASGL	.0221 (71) P= .855	.1257 (71) P= .296	-.1898 (71) P= .113	-.0532 (71) P= .660	-.0404 (68) P= .743	.0806 (68) P= .513
XINCOM	.0790 (71) P= .512	.0932 (71) P= .439	-.2703 (71) P= .023	-.1360 (71) P= .258	-.0883 (68) P= .474	.0505 (68) P= .682
XPARGL	.0845 (71) P= .483	.2034 (71) P= .089	-.0809 (71) P= .502	-.1204 (71) P= .317	.0806 (68) P= .513	.0417 (68) P= .735
XMREW	.1031 (71) P= .392	.1233 (71) P= .306	-.1243 (71) P= .302	-.1151 (71) P= .339	.0329 (68) P= .790	.0122 (68) P= .921
XPREW	.0886 (71) P= .463	.2346 (71) P= .049	-.0527 (71) P= .662	-.0979 (71) P= .417	-.0137 (68) P= .911	-.0391 (68) P= .752
XREPMD	.1288 (71) P= .284	.0727 (71) P= .547	-.2019 (71) P= .091	-.2691 (71) P= .023	-.1312 (68) P= .286	-.0142 (68) P= .908
XSTAQUO	.1286 (71) P= .285	.1144 (71) P= .342	-.1389 (71) P= .248	-.2713 (71) P= .022	-.0853 (68) P= .489	.0497 (68) P= .687

(Coefficient / (Cases) / 2-tailed sig)

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- - Correlation Coefficients - -

	CTSY	CVNWS	UNREL	COMP	TOTEFF	OUTPUT
XVIS	.1458 (71) P= .225	.2265 (71) P= .058	-.1978 (71) P= .098	-.2041 (71) P= .088	.0126 (68) P= .919	-.0011 (68) P= .993
XIDELSM	.0774 (71) P= .521	.1472 (71) P= .221	-.2991 (71) P= .011	-.1433 (71) P= .233	-.0342 (68) P= .782	.1864 (68) P= .128
XSTMIN	.0498 (71) P= .680	.2115 (71) P= .077	-.0691 (71) P= .567	-.3111 (71) P= .008	.1211 (68) P= .325	.1663 (68) P= .175
XINACTN	.2120 (71) P= .076	.2422 (71) P= .042	.0214 (71) P= .859	-.1667 (71) P= .165	.1891 (68) P= .122	.0486 (68) P= .694
XTEAM	.3579 (71) P= .002	.1853 (71) P= .122	-.0765 (71) P= .526	-.3502 (71) P= .003	.1663 (68) P= .175	.1162 (68) P= .345
XSLFREW	.1634 (71) P= .173	.1694 (71) P= .158	-.0765 (71) P= .526	-.0431 (71) P= .721	.0345 (68) P= .780	-.0680 (68) P= .582
XOPTHT	.1545 (71) P= .198	.1711 (71) P= .154	-.0844 (71) P= .484	-.1286 (71) P= .285	.0185 (68) P= .881	-.0264 (68) P= .831
XINDACT	.2783 (71) P= .019	.1098 (71) P= .362	.1483 (71) P= .217	-.1810 (71) P= .131	.1544 (68) P= .209	.0869 (68) P= .481
XEFFIC	.1584 (71) P= .187	.1442 (71) P= .230	-.1052 (71) P= .383	-.2958 (71) P= .012	.0073 (68) P= .953	.0450 (68) P= .716
XTEAMWK	.2661 (71) P= .025	.1415 (71) P= .239	-.0121 (71) P= .920	-.2895 (71) P= .014	.2252 (68) P= .065	.1387 (68) P= .259
XSFREW	-.1307 (71) P= .277	-.0320 (71) P= .791	.0902 (71) P= .454	.1438 (71) P= .231	-.0842 (68) P= .495	-.1472 (68) P= .231

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	CTSY	CVNHS	UNREL	COMP	TOTEFF	OUTPUT
XSFGL	.1368 (71) P= .255	.2268 (71) P= .057	-.0510 (71) P= .673	-.1363 (71) P= .257	.3132 (68) P= .009	.1869 (68) P= .127
XNREW	-.0094 (71) P= .938	.0090 (71) P= .941	.1707 (71) P= .155	.0670 (71) P= .579	.0908 (68) P= .461	-.0668 (68) P= .588
XOPPTHT	.1248 (72) P= .296	.0113 (72) P= .925	-.0224 (72) P= .852	-.0919 (72) P= .443	.0839 (70) P= .490	-.0026 (70) P= .983
XSOBS	.0023 (71) P= .985	.2063 (71) P= .084	.0069 (71) P= .955	-.0670 (71) P= .579	.1629 (68) P= .185	.0842 (68) P= .495
XINTSUP	.5504 (71) P= .000	.2650 (71) P= .026	-.1855 (71) P= .121	-.2775 (71) P= .019	.1955 (68) P= .110	.0359 (68) P= .771
XCTSY	.5726 (71) P= .000	.3275 (71) P= .005	-.3302 (71) P= .005	-.3763 (71) P= .001	.0105 (68) P= .932	-.0283 (68) P= .819
XCVNHS	.3992 (71) P= .001	.3890 (71) P= .001	-.1717 (71) P= .152	-.3011 (71) P= .011	.0298 (68) P= .810	-.0264 (68) P= .831
XUNREL	-.4337 (71) P= .000	-.2397 (71) P= .044	.6186 (71) P= .000	.4454 (71) P= .000	-.1953 (68) P= .110	-.1376 (68) P= .263
XCOMP	-.6052 (71) P= .000	-.3097 (71) P= .009	.2248 (71) P= .059	.5037 (71) P= .000	-.1306 (68) P= .288	-.0953 (68) P= .440
XTOTEFF	.1126 (60) P= .392	-.0517 (60) P= .695	.0739 (60) P= .575	-.0942 (60) P= .474	.6949 (61) P= .000	.5763 (61) P= .000
XOUTPUT	.0582 (60) P= .659	-.0412 (60) P= .754	-.0612 (60) P= .642	-.0981 (60) P= .456	.5081 (61) P= .000	.6375 (61) P= .000

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	CTSY	CVNHS	UNREL	COMP	TOTEFF	OUTPUT
XINTEFF	.0886 (60) P= .501	-.0136 (60) P= .918	.0675 (60) P= .608	-.1108 (60) P= .399	.5276 (61) P= .000	.2677 (61) P= .037
XCHNGEFF	.0572 (60) P= .664	-.0943 (60) P= .473	.1551 (60) P= .237	.0869 (60) P= .509	.5490 (61) P= .000	.3739 (61) P= .003
XORGPLN	.1660 (60) P= .205	-.0015 (60) P= .991	.0949 (60) P= .471	-.1626 (60) P= .214	.4864 (61) P= .000	.5322 (61) P= .000
XSLFPERF	-.1383 (59) P= .296	-.1249 (59) P= .346	-.0152 (59) P= .909	-.0470 (59) P= .724	-.0393 (57) P= .772	.0849 (57) P= .530
XSUBPERF	-.0194 (71) P= .873	.1851 (71) P= .122	-.0900 (71) P= .456	-.1510 (71) P= .209	.0282 (68) P= .820	.1306 (68) P= .288
XDESIRE	.0817 (71) P= .498	.0857 (71) P= .477	-.1802 (71) P= .133	-.0637 (71) P= .598	-.0877 (68) P= .477	-.0823 (68) P= .504

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
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- - Correlation Coefficients - -

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
AVRS	-.2260 (69) P= .062	-.2802 (69) P= .020	-.0420 (69) P= .732	.2224 (30) P= .237	-.4722 (72) P= .000	-.0341 (72) P= .776
ASGL	.0833 (69) P= .496	-.0967 (69) P= .429	.0382 (69) P= .755	-.1648 (30) P= .384	.1167 (72) P= .329	-.1693 (72) P= .155
INCOM	-.0945 (69) P= .440	-.0068 (69) P= .956	-.0480 (69) P= .696	-.0762 (30) P= .689	.3111 (72) P= .008	-.4483 (72) P= .000
PARGL	.1897 (69) P= .118	.0916 (69) P= .454	.1451 (69) P= .234	-.1827 (30) P= .334	.7009 (72) P= .000	-.1725 (72) P= .147
MREW	.0216 (69) P= .860	.0381 (69) P= .756	.1160 (69) P= .343	-.0508 (30) P= .790	.5545 (72) P= .000	.0439 (72) P= .714
PREW	-.0281 (69) P= .819	.0571 (69) P= .641	.0116 (69) P= .924	-.0208 (30) P= .913	.5784 (72) P= .000	-.2046 (72) P= .085
REPMD	-.0686 (69) P= .575	-.1594 (69) P= .191	-.1132 (69) P= .354	.1484 (30) P= .434	.1018 (72) P= .395	-.2415 (72) P= .041
STAQUO	-.1127 (69) P= .357	-.1706 (69) P= .161	.0591 (69) P= .630	.1653 (30) P= .383	.5169 (72) P= .000	-.1278 (72) P= .285
VIS	.0010 (69) P= .994	.0106 (69) P= .931	.0872 (69) P= .476	.0726 (30) P= .703	.6815 (72) P= .000	-.2701 (72) P= .022
IDELSM	-.0194 (69) P= .874	-.0124 (69) P= .919	.0906 (69) P= .459	.0732 (30) P= .700	.5777 (72) P= .000	-.0902 (72) P= .451
STMIN	.0118 (69) P= .923	-.1489 (69) P= .222	-.1489 (69) P= .222	-.1198 (30) P= .532	.6943 (72) P= .000	-.3672 (72) P= .002

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
INACTN	.1774 (69) P= .145	.1428 (69) P= .242	.1134 (69) P= .353	-.2337 (30) P= .214	.5926 (72) P= .000	-.2523 (72) P= .033
TEAM	.0858 (69) P= .484	-.0186 (69) P= .880	.0367 (69) P= .764	-.0451 (30) P= .813	.4954 (72) P= .000	-.1733 (72) P= .145
SLFREW	.0751 (69) P= .540	.0637 (69) P= .603	.0943 (69) P= .441	-.2382 (30) P= .205	.6011 (72) P= .000	-.2811 (72) P= .017
OPTHT	.1416 (69) P= .246	.0972 (69) P= .427	.0754 (69) P= .538	-.2532 (30) P= .177	.5160 (72) P= .000	-.3448 (72) P= .003
INDACT	.1660 (69) P= .173	.1534 (69) P= .208	.1040 (69) P= .395	.1097 (30) P= .564	.1763 (72) P= .138	.2818 (72) P= .016
EFFIC	-.0925 (69) P= .450	.0030 (69) P= .981	-.1720 (69) P= .158	.4065 (30) P= .026	-.0852 (72) P= .477	.1518 (72) P= .203
TEAMWK	.1377 (69) P= .259	.0002 (69) P= .999	.2872 (69) P= .017	-.0351 (30) P= .854	.2901 (72) P= .013	-.1345 (72) P= .260
SFREW	-.1225 (69) P= .316	-.0368 (69) P= .764	.0884 (69) P= .470	.0610 (30) P= .749	.1572 (72) P= .187	.0436 (72) P= .716
SFGL	.2134 (69) P= .078	.1651 (69) P= .175	.0363 (69) P= .767	.1452 (30) P= .444	.1559 (72) P= .191	.0657 (72) P= .583
WREW	.0004 (69) P= .997	.0640 (69) P= .601	.1019 (69) P= .405	-.1216 (30) P= .522	.0900 (72) P= .452	.1047 (72) P= .381
OPPTHT	.0834 (70) P= .492	.1369 (70) P= .259	-.0005 (70) P= .997	.2851 (31) P= .120	.3049 (72) P= .009	-.2309 (72) P= .051

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:46 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
SOBS	.0789	.0103	-.0483	.0693	.0314	-.2898
	(69)	(69)	(69)	(30)	(72)	(72)
	P= .519	P= .933	P= .693	P= .716	P= .793	P= .014
INTSUP	.1840	.1019	.0702	-.1470	.1017	-.1522
	(69)	(69)	(69)	(30)	(72)	(72)
	P= .130	P= .405	P= .567	P= .438	P= .395	P= .202
CTSY	.2133	.2278	.0767	-.0399	.1466	-.0821
	(69)	(69)	(69)	(30)	(72)	(72)
	P= .078	P= .060	P= .531	P= .834	P= .219	P= .493
CVNWS	.2100	.0884	.1003	-.0554	.3757	-.1852
	(69)	(69)	(69)	(30)	(72)	(72)
	P= .083	P= .470	P= .412	P= .771	P= .001	P= .119
UNREL	-.1377	-.0190	.0077	.1166	-.3103	.0270
	(69)	(69)	(69)	(30)	(72)	(72)
	P= .259	P= .877	P= .950	P= .540	P= .008	P= .822
COMP	-.1414	-.0011	.1260	.0497	-.3957	.2327
	(69)	(69)	(69)	(30)	(72)	(72)
	P= .246	P= .993	P= .302	P= .794	P= .001	P= .049
TOTEFF	.8508	.7333	.6441	-.1090	.1398	.0469
	(70)	(70)	(70)	(31)	(69)	(69)
	P= .000	P= .000	P= .000	P= .560	P= .252	P= .702
OUTPUT	.4338	.3132	.4543	.0791	.2594	.1467
	(70)	(70)	(70)	(31)	(69)	(69)
	P= .000	P= .008	P= .000	P= .672	P= .031	P= .229
INTEFF	1.0000	.5182	.3566	-.2927	.0315	-.0963
	(70)	(70)	(70)	(31)	(69)	(69)
	P= .	P= .000	P= .002	P= .110	P= .797	P= .431
CHNGEFF	.5182	1.0000	.4497	-.0771	.0430	.0596
	(70)	(70)	(70)	(31)	(69)	(69)
	P= .000	P= .	P= .000	P= .680	P= .726	P= .626
ORGPLN	.3566	.4497	1.0000	.1030	.1589	.0958
	(70)	(70)	(70)	(31)	(69)	(69)
	P= .002	P= .000	P= .	P= .581	P= .192	P= .433

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
SLFPERF	-.2927 (31) P= .110	-.0771 (31) P= .680	.1030 (31) P= .581	1.0000 (31) P= .	-.1139 (30) P= .549	.1231 (30) P= .517
SUBPERF	.0315 (69) P= .797	.0430 (69) P= .726	.1589 (69) P= .192	-.1139 (30) P= .549	1.0000 (72) P= .	-.1890 (72) P= .112
DESIRE	-.0963 (69) P= .431	.0596 (69) P= .626	.0958 (69) P= .433	.1231 (30) P= .517	-.1890 (72) P= .112	1.0000 (72) P= .
XAVRS	-.0808 (68) P= .512	-.2671 (68) P= .028	-.1474 (68) P= .230	.1559 (29) P= .419	-.4740 (71) P= .000	-.0794 (71) P= .510
XASGL	-.0680 (68) P= .582	-.1618 (68) P= .188	.0430 (68) P= .727	-.3082 (29) P= .104	.1313 (71) P= .275	-.0655 (71) P= .588
XINCOM	-.1433 (68) P= .244	-.1326 (68) P= .281	-.0137 (68) P= .912	-.1973 (29) P= .305	.1548 (71) P= .198	-.0783 (71) P= .516
XPARGL	.0539 (68) P= .663	.0631 (68) P= .609	.0892 (68) P= .470	-.2231 (29) P= .245	.4009 (71) P= .001	.0051 (71) P= .966
XMREW	-.0144 (68) P= .907	.0657 (68) P= .595	.1134 (68) P= .357	-.1264 (29) P= .513	.3696 (71) P= .002	.0415 (71) P= .731
XPREW	-.0815 (68) P= .509	.0714 (68) P= .563	.1191 (68) P= .333	.0902 (29) P= .642	.4526 (71) P= .000	-.0880 (71) P= .465
XREPMD	-.0521 (68) P= .673	-.2110 (68) P= .084	-.1963 (68) P= .109	.1012 (29) P= .601	.0681 (71) P= .572	-.2456 (71) P= .039
XSTAQUO	-.1369 (68) P= .266	-.1095 (68) P= .374	.0303 (68) P= .806	.1891 (29) P= .326	.3471 (71) P= .003	-.1482 (71) P= .217

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
XVIS	-.0373 (68) P= .763	.0346 (68) P= .779	.1898 (68) P= .121	.0298 (29) P= .878	.4658 (71) P= .000	-.3162 (71) P= .007
XIDELSM	-.1620 (68) P= .187	-.1007 (68) P= .414	.0805 (68) P= .514	-.0039 (29) P= .984	.4665 (71) P= .000	-.0768 (71) P= .524
XSTMIN	.0825 (68) P= .503	-.0257 (68) P= .835	.1703 (68) P= .165	-.0283 (29) P= .884	.5821 (71) P= .000	-.3316 (71) P= .005
XINACTN	.1699 (68) P= .166	.1946 (68) P= .112	.1986 (68) P= .104	-.2990 (29) P= .115	.3284 (71) P= .005	-.2198 (71) P= .065
XTEAM	.1214 (68) P= .324	.1106 (68) P= .369	.2098 (68) P= .086	.0117 (29) P= .952	.2839 (71) P= .016	-.1016 (71) P= .399
XSLFREW	-.0173 (68) P= .888	.1220 (68) P= .322	.1680 (68) P= .171	-.3966 (29) P= .033	.2990 (71) P= .011	-.0227 (71) P= .851
XOPTHT	.0282 (68) P= .819	.0009 (68) P= .994	.1310 (68) P= .287	-.2405 (29) P= .209	.4226 (71) P= .000	-.2858 (71) P= .016
XINDACT	.0725 (68) P= .557	.2925 (68) P= .015	.0465 (68) P= .707	.3338 (29) P= .077	.1997 (71) P= .095	.1797 (71) P= .134
XEFFIC	-.0771 (68) P= .532	.1309 (68) P= .287	-.0354 (68) P= .774	.5430 (29) P= .002	.1386 (71) P= .249	-.0958 (71) P= .427
XTEAMWK	.1516 (68) P= .217	.2837 (68) P= .019	.1678 (68) P= .171	.3676 (29) P= .050	.1198 (71) P= .320	-.0194 (71) P= .873
XSFREW	-.0173 (68) P= .889	-.1170 (68) P= .342	.0132 (68) P= .915	.1407 (29) P= .467	-.0382 (71) P= .752	-.0930 (71) P= .440

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
XSFGL	.2649	.2819	.1425	.1963	.0271	.3105
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .029	P= .020	P= .246	P= .307	P= .822	P= .008
XNREW	.1031	.2166	-.0101	.0772	-.0344	-.1531
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .403	P= .076	P= .935	P= .691	P= .776	P= .203
XOPPTHT	-.0186	.3134	.0295	.3751	.1533	-.0661
	(70)	(70)	(70)	(31)	(72)	(72)
	P= .879	P= .008	P= .809	P= .038	P= .199	P= .581
XSOBS	.1956	.0954	.0496	.3735	.0185	-.2300
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .110	P= .439	P= .688	P= .046	P= .879	P= .054
XINTSUP	.1517	.2466	.2515	-.1466	.1096	-.1165
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .217	P= .043	P= .039	P= .448	P= .363	P= .333
XCTSY	-.0159	.1219	-.0223	.0102	.2528	-.0929
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .897	P= .322	P= .857	P= .958	P= .033	P= .441
XCVNNS	-.0593	.1627	.1250	.1026	.1204	-.1123
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .631	P= .185	P= .310	P= .596	P= .317	P= .351
XUNREL	-.1103	-.2392	-.1756	.0493	-.2272	-.1012
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .370	P= .049	P= .152	P= .799	P= .057	P= .401
XCOMP	-.0384	-.1646	-.1753	-.0818	-.2744	-.0763
	(68)	(68)	(68)	(29)	(71)	(71)
	P= .756	P= .180	P= .153	P= .673	P= .021	P= .527
XTOTEFF	.5981	.4859	.3587	.0396	.1417	.0143
	(61)	(61)	(61)	(27)	(60)	(60)
	P= .000	P= .000	P= .005	P= .845	P= .280	P= .914
XOUTPUT	.2800	.2835	.3688	.1787	.2092	.0916
	(61)	(61)	(61)	(27)	(60)	(60)
	P= .029	P= .027	P= .003	P= .373	P= .109	P= .486

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

-- Correlation Coefficients --

	INTEFF	CHNGEFF	ORGPLN	SLFPERF	SUBPERF	DESIRE
XINTEFF	.6449 (61) P= .000	.3237 (61) P= .011	.1928 (61) P= .137	-.1206 (27) P= .549	.0543 (60) P= .680	-.0608 (60) P= .644
XCHNGEFF	.4448 (61) P= .000	.5375 (61) P= .000	.2335 (61) P= .070	.2299 (27) P= .249	.0408 (60) P= .757	.0969 (60) P= .461
XORGPLN	.3295 (61) P= .010	.3031 (61) P= .018	.3155 (61) P= .013	-.3026 (27) P= .125	.1618 (60) P= .217	-.1490 (60) P= .256
XSLFPERF	-.0001 (57) P= .999	-.1475 (57) P= .273	-.1142 (57) P= .398	.5512 (23) P= .006	-.0811 (59) P= .541	-.0845 (59) P= .525
XSUBPERF	-.1193 (68) P= .333	.0638 (68) P= .605	.1657 (68) P= .177	-.0478 (29) P= .806	.7583 (71) P= .000	-.1823 (71) P= .128
XDESIRE	-.1162 (68) P= .345	.0077 (68) P= .950	.0450 (68) P= .716	.1191 (29) P= .538	.1256 (71) P= .297	.3410 (71) P= .004

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XAVRS	XASGL	XINCOM	XPARGL	XMREW	XPREW
AVRS	.8209	.3174	.2929	-.3844	-.4834	-.4263
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .007	P= .013	P= .001	P= .000	P= .000
ASGL	.1903	.6671	.3797	-.1034	-.0786	-.0909
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .112	P= .000	P= .001	P= .391	P= .515	P= .451
INCOM	.2791	.5089	.5516	-.1219	-.1186	-.0417
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .018	P= .000	P= .000	P= .311	P= .324	P= .730
PARGL	-.4831	.1039	.0996	.6348	.3483	.4438
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .388	P= .409	P= .000	P= .003	P= .000
MREW	-.4378	.0627	.0126	.4496	.6791	.4915
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .603	P= .917	P= .000	P= .000	P= .000
PREW	-.3664	.2224	.0943	.4885	.5118	.6640
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .002	P= .062	P= .434	P= .000	P= .000	P= .000
REPMD	.3747	.2883	.3505	-.0018	-.0880	.0208
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .015	P= .003	P= .988	P= .465	P= .863
STAQUO	.0179	-.0282	.1238	.1295	.0918	.2164
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .882	P= .816	P= .304	P= .282	P= .446	P= .070
VIS	-.2916	.1763	.1236	.3464	.2344	.4828
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .014	P= .141	P= .305	P= .003	P= .049	P= .000
IDELSM	-.0454	.1763	.2260	.2931	.2621	.4029
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .707	P= .141	P= .058	P= .013	P= .027	P= .000
STMIN	-.1535	.2299	.2261	.2190	.1305	.3487
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .201	P= .054	P= .058	P= .067	P= .278	P= .003

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XAVRS	XASGL	XINCOM	XPARGL	XMREW	XPREW
INACTN	-.4274 (71) P= .000	-.1383 (71) P= .250	-.0315 (71) P= .794	.3178 (71) P= .007	.2226 (71) P= .062	.3757 (71) P= .001
TEAM	-.2883 (71) P= .015	.0661 (71) P= .584	.1218 (71) P= .311	.3647 (71) P= .002	.2728 (71) P= .021	.4034 (71) P= .000
SLFREW	-.4616 (71) P= .000	.0915 (71) P= .448	.0775 (71) P= .521	.2924 (71) P= .013	.2968 (71) P= .012	.4267 (71) P= .000
OPTHT	-.2899 (71) P= .014	.0501 (71) P= .678	.0401 (71) P= .740	.2459 (71) P= .039	.2272 (71) P= .057	.3268 (71) P= .005
INDACT	-.5227 (71) P= .000	-.2824 (71) P= .017	-.3068 (71) P= .009	.4093 (71) P= .000	.4498 (71) P= .000	.3127 (71) P= .008
EFFIC	-.0179 (71) P= .882	-.0043 (71) P= .972	-.0115 (71) P= .924	.1697 (71) P= .157	.3250 (71) P= .006	.1822 (71) P= .128
TEAMWK	-.2384 (71) P= .045	-.0514 (71) P= .671	.1324 (71) P= .271	.1335 (71) P= .267	.0435 (71) P= .718	.1604 (71) P= .181
SFREW	-.2633 (71) P= .027	.1259 (71) P= .295	.0047 (71) P= .969	.1755 (71) P= .143	.2073 (71) P= .083	.3203 (71) P= .006
SFGL	-.3925 (71) P= .001	-.2906 (71) P= .014	-.0865 (71) P= .473	.2955 (71) P= .012	.3158 (71) P= .007	.3133 (71) P= .008
NREW	-.2952 (71) P= .012	.1611 (71) P= .180	.0582 (71) P= .629	.0494 (71) P= .683	.2185 (71) P= .067	.0857 (71) P= .477
OPPTHT	-.1750 (71) P= .144	.0325 (71) P= .788	-.0262 (71) P= .828	.0897 (71) P= .457	.2149 (71) P= .072	.2165 (71) P= .070

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

II

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:47 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XAVRS	XASOL	XINCOM	XPARGL	XMREW	XPREW
SOBS	.1204 (71) P= .317	-.0678 (71) P= .574	-.0652 (71) P= .589	.1815 (71) P= .130	.0236 (71) P= .845	.0800 (71) P= .507
INTSUP	-.1216 (71) P= .312	.0389 (71) P= .747	.0771 (71) P= .523	.0762 (71) P= .528	.1755 (71) P= .143	.1759 (71) P= .142
CTSY	-.0864 (71) P= .474	.0221 (71) P= .855	.0790 (71) P= .512	.0845 (71) P= .483	.1031 (71) P= .392	.0886 (71) P= .463
CVNMS	-.2488 (71) P= .036	.1257 (71) P= .296	.0932 (71) P= .439	.2034 (71) P= .089	.1233 (71) P= .306	.2346 (71) P= .049
UNREL	.0080 (71) P= .947	-.1898 (71) P= .113	-.2703 (71) P= .023	-.0809 (71) P= .502	-.1243 (71) P= .302	-.0527 (71) P= .662
COMP	.0579 (71) P= .631	-.0532 (71) P= .660	-.1360 (71) P= .258	-.1204 (71) P= .317	-.1151 (71) P= .339	-.0979 (71) P= .417
TOTEFF	-.1272 (68) P= .301	-.0404 (68) P= .743	-.0883 (68) P= .474	.0806 (68) P= .513	.0329 (68) P= .790	-.0137 (68) P= .911
OUTPUT	.0388 (68) P= .753	.0806 (68) P= .513	.0505 (68) P= .682	.0417 (68) P= .735	.0122 (68) P= .921	-.0391 (68) P= .752
INTEFF	-.0808 (68) P= .512	-.0680 (68) P= .582	-.1433 (68) P= .244	.0539 (68) P= .663	-.0144 (68) P= .907	-.0815 (68) P= .509
CHNGEFF	-.2671 (68) P= .028	-.1618 (68) P= .188	-.1326 (68) P= .281	.0631 (68) P= .609	.0657 (68) P= .595	.0714 (68) P= .563
ORGPLN	-.1474 (68) P= .230	.0430 (68) P= .727	-.0137 (68) P= .912	.0872 (68) P= .470	.1134 (68) P= .357	.1191 (68) P= .333

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS [redacted]
10:21:47 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	XAVRS	XASGL	XINCOM	XPARGL	XMREW	XPREW
SLFPERF	.1559 (29) P= .419	-.3082 (29) P= .104	-.1973 (29) P= .305	-.2231 (29) P= .245	-.1264 (29) P= .513	.0902 (29) P= .642
SUBPERF	-.4740 (71) P= .000	.1313 (71) P= .275	.1548 (71) P= .198	.4009 (71) P= .001	.3696 (71) P= .002	.4526 (71) P= .000
DESIRE	-.0794 (71) P= .510	-.0655 (71) P= .588	-.0783 (71) P= .516	.0051 (71) P= .966	.0415 (71) P= .731	-.0880 (71) P= .465
XAVRS	1.0000 (71) P= .	.2555 (71) P= .032	.3042 (71) P= .010	-.4711 (71) P= .000	-.5482 (71) P= .000	-.5881 (71) P= .000
XASGL	.2555 (71) P= .032	1.0000 (71) P= .	.6409 (71) P= .000	.1028 (71) P= .394	-.0663 (71) P= .583	.0627 (71) P= .603
XINCOM	.3042 (71) P= .010	.6409 (71) P= .000	1.0000 (71) P= .	.0479 (71) P= .692	-.1489 (71) P= .215	.0091 (71) P= .940
XPARGL	-.4711 (71) P= .000	.1028 (71) P= .394	.0479 (71) P= .692	1.0000 (71) P= .	.5294 (71) P= .000	.6435 (71) P= .000
XMREW	-.5482 (71) P= .000	-.0663 (71) P= .583	-.1489 (71) P= .215	.5294 (71) P= .000	1.0000 (71) P= .	.6430 (71) P= .000
XPREW	-.5881 (71) P= .000	.0627 (71) P= .603	.0091 (71) P= .940	.6435 (71) P= .000	.6430 (71) P= .000	1.0000 (71) P= .
XREPMD	.3995 (71) P= .001	.2079 (71) P= .082	.4005 (71) P= .001	.1275 (71) P= .289	-.0074 (71) P= .951	.0449 (71) P= .710
XSTAQUO	.0001 (71) P= .999	.0369 (71) P= .760	.1688 (71) P= .159	.2521 (71) P= .034	.2263 (71) P= .058	.3497 (71) P= .003

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XAVRS	XASGL	XINCOM	XPARGL	XMREM	XPREM
XVIS	-.3273	.0320	.2252	.4113	.2740	.5965
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .005	P= .791	P= .059	P= .000	P= .021	P= .000
XIDELSM	-.2400	.2156	.3758	.4621	.4251	.5392
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .044	P= .071	P= .001	P= .000	P= .000	P= .000
XSTMIN	-.3155	.1443	.2245	.4170	.3233	.5012
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .007	P= .230	P= .060	P= .000	P= .006	P= .000
XINACTN	-.4649	-.0799	.0045	.5196	.3392	.4605
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .508	P= .970	P= .000	P= .004	P= .000
XTEAM	-.3257	.0933	.0392	.5677	.4429	.5699
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .006	P= .439	P= .745	P= .000	P= .000	P= .000
XSLFREW	-.5103	.1184	.1191	.4834	.4649	.5747
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .325	P= .323	P= .000	P= .000	P= .000
XOPTHT	-.3578	.1254	.2025	.5409	.4787	.6034
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .002	P= .297	P= .090	P= .000	P= .000	P= .000
XINDACT	-.4501	-.3143	-.3470	.2830	.3140	.2662
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .008	P= .003	P= .017	P= .008	P= .025
XEFFIC	-.0451	.0227	-.0223	.1624	.1048	.2047
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .709	P= .851	P= .853	P= .176	P= .384	P= .087
XTEAMWK	-.0958	-.0722	-.0318	.1442	.1263	.3142
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .427	P= .550	P= .792	P= .230	P= .294	P= .008
XSFREW	.0768	-.0073	-.0707	.0497	.1187	.1801
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .525	P= .952	P= .558	P= .681	P= .324	P= .133

(Coefficient / (Cases) / 2-tailed sig)

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II

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XAVRS	XASGL	XINCOM	XPARGL	XMREW	XPREW
XSFGL	-.3363 (71) P= .004	-.1448 (71) P= .228	-.2048 (71) P= .087	.1706 (71) P= .155	.3251 (71) P= .006	.1529 (71) P= .203
XNREW	-.0792 (71) P= .512	-.0943 (71) P= .434	-.2088 (71) P= .081	.0647 (71) P= .592	.1289 (71) P= .284	.0585 (71) P= .628
XOPPTHT	-.1247 (71) P= .300	-.0908 (71) P= .451	-.0435 (71) P= .719	.1283 (71) P= .286	.1878 (71) P= .117	.2721 (71) P= .022
XSOBS	.0765 (71) P= .526	-.1102 (71) P= .360	-.0897 (71) P= .457	.0001 (71) P=1.000	.0520 (71) P= .667	.1177 (71) P= .328
XINTSUP	-.2880 (71) P= .015	-.0639 (71) P= .597	-.0021 (71) P= .986	.1697 (71) P= .157	.2085 (71) P= .081	.3049 (71) P= .010
XCTSY	-.2705 (71) P= .023	-.0357 (71) P= .768	.1196 (71) P= .321	.2973 (71) P= .012	.2690 (71) P= .023	.3170 (71) P= .007
XCVNWS	-.1742 (71) P= .146	-.1005 (71) P= .404	-.0663 (71) P= .583	.1470 (71) P= .221	.1766 (71) P= .141	.2407 (71) P= .043
XUNREL	.1897 (71) P= .113	-.1332 (71) P= .268	.0042 (71) P= .972	-.1185 (71) P= .325	-.2403 (71) P= .044	-.1963 (71) P= .101
XCOMP	.2903 (71) P= .014	.0342 (71) P= .777	-.1025 (71) P= .395	-.1769 (71) P= .140	-.0793 (71) P= .511	-.2809 (71) P= .018
XTOTEFF	-.1679 (59) P= .204	.0375 (59) P= .778	-.1363 (59) P= .303	.0008 (59) P= .995	.1316 (59) P= .320	.1177 (59) P= .375
XOUTPUT	.0672 (59) P= .613	.2305 (59) P= .079	.1320 (59) P= .319	-.1416 (59) P= .285	-.0357 (59) P= .789	.0138 (59) P= .917

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XAVRS	XASGL	XINCOM	XPARGL	XMREW	XPREW
XINTEFF	-.2753	-.0376	-.2234	.1354	.2145	.2065
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .035	P= .777	P= .089	P= .307	P= .103	P= .117
XCHNGEFF	-.1764	-.0621	-.2268	-.0409	.1321	.1151
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .181	P= .640	P= .084	P= .758	P= .319	P= .385
XORGPLN	-.1026	-.0512	-.0756	.0573	.0688	-.0661
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .440	P= .700	P= .569	P= .666	P= .605	P= .619
XSLFPERF	.2302	-.2380	-.1446	-.1636	-.1127	-.1057
	(58)	(58)	(58)	(58)	(58)	(58)
	P= .082	P= .072	P= .279	P= .220	P= .400	P= .430
XSUBPERF	-.5872	.0764	.1748	.5686	.4960	.6753
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .526	P= .145	P= .000	P= .000	P= .000
XDESIRE	-.1402	-.1003	.0029	.0028	.2662	-.0135
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .243	P= .405	P= .981	P= .982	P= .025	P= .911

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XREPMD	XSTAQUO	XVIS	XIDELSM	XSTMIN	XINACTN
AVRS	.3590 (71) P= .002	.0335 (71) P= .781	-.2904 (71) P= .014	-.1684 (71) P= .160	-.2257 (71) P= .058	-.3776 (71) P= .001
ASGL	.0738 (71) P= .541	-.1360 (71) P= .258	-.1446 (71) P= .229	.0217 (71) P= .858	.0378 (71) P= .754	-.1345 (71) P= .263
INCOM	.1898 (71) P= .113	.0778 (71) P= .519	.1419 (71) P= .238	.1111 (71) P= .356	.2671 (71) P= .024	-.1335 (71) P= .267
PARGL	.1033 (71) P= .391	.1644 (71) P= .171	.3953 (71) P= .001	.3747 (71) P= .001	.5142 (71) P= .000	.4550 (71) P= .000
MREW	.0184 (71) P= .879	.1961 (71) P= .101	.3050 (71) P= .010	.3987 (71) P= .001	.4570 (71) P= .000	.2821 (71) P= .017
PREW	.0766 (71) P= .525	.1980 (71) P= .098	.3504 (71) P= .003	.4613 (71) P= .000	.4266 (71) P= .000	.2477 (71) P= .037
REPMD	.7310 (71) P= .000	.3820 (71) P= .001	.2355 (71) P= .048	.1385 (71) P= .249	.3536 (71) P= .002	.1767 (71) P= .140
STAQUO	.4251 (71) P= .000	.8349 (71) P= .000	.4748 (71) P= .000	.4551 (71) P= .000	.3851 (71) P= .001	.2465 (71) P= .038
VIS	.2135 (71) P= .074	.5010 (71) P= .000	.6150 (71) P= .000	.4383 (71) P= .000	.6589 (71) P= .000	.3463 (71) P= .003
IDELSM	.3595 (71) P= .002	.5621 (71) P= .000	.4122 (71) P= .000	.5770 (71) P= .000	.4707 (71) P= .000	.2086 (71) P= .081
STMIN	.3562 (71) P= .002	.2770 (71) P= .019	.3433 (71) P= .003	.3340 (71) P= .004	.6815 (71) P= .000	.2849 (71) P= .016

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XREPMD	XSTAQUO	XVIS	XIDELSM	XSTMIN	XINACTN
INACTN	.1984	.3329	.4924	.2443	.6667	.7499
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .097	P= .005	P= .000	P= .040	P= .000	P= .000
TEAM	.2877	.4398	.4965	.3877	.6176	.5896
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .015	P= .000	P= .000	P= .001	P= .000	P= .000
SLFREW	.0384	.2138	.4559	.3015	.6598	.4958
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .751	P= .073	P= .000	P= .011	P= .000	P= .000
OPTHT	.2444	.2987	.4568	.2661	.5674	.5332
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .040	P= .011	P= .000	P= .025	P= .000	P= .000
INDACT	-.1362	.1254	.1342	.0857	.2013	.5219
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .258	P= .298	P= .265	P= .477	P= .092	P= .000
EFFIC	.1983	.1815	-.0027	.0867	-.0323	.0511
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .097	P= .130	P= .982	P= .472	P= .789	P= .672
TEAMWK	.2191	.2467	.4186	.1770	.3496	.5025
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .066	P= .038	P= .000	P= .140	P= .003	P= .000
SFREW	-.1257	-.0022	.1328	.1732	.2816	.2385
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .296	P= .986	P= .270	P= .149	P= .017	P= .045
SFGL	.1048	.1080	.3040	.0856	.2458	.4024
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .384	P= .370	P= .010	P= .478	P= .039	P= .001
NREW	-.1365	-.0805	-.0376	.0352	.1068	.1307
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .256	P= .505	P= .756	P= .771	P= .375	P= .277
OPPTHT	.2809	.2828	.2882	.1308	.3514	.1777
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .018	P= .017	P= .015	P= .277	P= .003	P= .138

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

-- Correlation Coefficients --

	XREPMD	XSTAQUO	XVIS	XIDELSM	XSTMIN	XINACTN
SOBS	.1651 (71) P= .169	-.0574 (71) P= .634	-.1049 (71) P= .384	-.1326 (71) P= .270	.1985 (71) P= .097	.0551 (71) P= .648
INTSUP	.1137 (71) P= .345	.0376 (71) P= .756	.1398 (71) P= .245	.0268 (71) P= .824	.1640 (71) P= .172	.2407 (71) P= .043
CTSY	.1288 (71) P= .284	.1286 (71) P= .285	.1458 (71) P= .225	.0774 (71) P= .521	.0498 (71) P= .680	.2120 (71) P= .076
CVNHS	.0727 (71) P= .547	.1144 (71) P= .342	.2265 (71) P= .058	.1472 (71) P= .221	.2115 (71) P= .077	.2422 (71) P= .042
UNREL	-.2019 (71) P= .091	-.1389 (71) P= .248	-.1978 (71) P= .098	-.2991 (71) P= .011	-.0691 (71) P= .567	.0214 (71) P= .859
COMP	-.2691 (71) P= .023	-.2713 (71) P= .022	-.2041 (71) P= .088	-.1433 (71) P= .233	-.3111 (71) P= .008	-.1667 (71) P= .165
TOTEFF	-.1312 (68) P= .286	-.0853 (68) P= .489	.0126 (68) P= .919	-.0342 (68) P= .782	.1211 (68) P= .325	.1891 (68) P= .122
OUTPUT	-.0142 (68) P= .908	.0497 (68) P= .687	-.0011 (68) P= .993	.1864 (68) P= .128	.1663 (68) P= .175	.0486 (68) P= .694
INTEFF	-.0521 (68) P= .673	-.1369 (68) P= .266	-.0373 (68) P= .763	-.1620 (68) P= .187	.0825 (68) P= .503	.1699 (68) P= .166
CHNGEFF	-.2110 (68) P= .084	-.1095 (68) P= .374	.0346 (68) P= .779	-.1007 (68) P= .414	-.0257 (68) P= .835	.1946 (68) P= .112
ORGPLN	-.1963 (68) P= .109	.0303 (68) P= .806	.1898 (68) P= .121	.0805 (68) P= .514	.1703 (68) P= .165	.1986 (68) P= .104

(Coefficient / (Cases) / 2-tailed sig)

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- - Correlation Coefficients - -

	XREPMD	XSTAQUO	XVIS	XIDELSM	XSTMIN	XINACTN
SLFPERF	.1012	.1891	.0298	-.0039	-.0283	-.2990
	(29)	(29)	(29)	(29)	(29)	(29)
	P= .601	P= .326	P= .878	P= .984	P= .884	P= .115
SUBPERF	.0681	.3471	.4658	.4665	.5821	.3284
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .572	P= .003	P= .000	P= .000	P= .000	P= .005
DESIRE	-.2456	-.1482	-.3162	-.0768	-.3316	-.2198
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .039	P= .217	P= .007	P= .524	P= .005	P= .065
XAVRS	.3995	.0001	-.3273	-.2400	-.3155	-.4649
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .999	P= .005	P= .044	P= .007	P= .000
XASGL	.2079	.0369	.0320	.2156	.1443	-.0799
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .082	P= .760	P= .791	P= .071	P= .230	P= .508
XINCOM	.4005	.1688	.2252	.3758	.2245	.0045
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .001	P= .159	P= .059	P= .001	P= .060	P= .970
XPARGL	.1275	.2521	.4113	.4621	.4170	.5196
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .289	P= .034	P= .000	P= .000	P= .000	P= .000
XMREW	-.0074	.2263	.2740	.4251	.3233	.3392
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .951	P= .058	P= .021	P= .000	P= .006	P= .004
XPREW	.0449	.3497	.5965	.5392	.5012	.4605
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .710	P= .003	P= .000	P= .000	P= .000	P= .000
XREPMD	1.0000	.4399	.2747	.1844	.3093	.1491
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .	P= .000	P= .020	P= .124	P= .009	P= .214
XSTAQUO	.4399	1.0000	.5565	.6042	.4384	.2792
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .	P= .000	P= .000	P= .000	P= .018

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XREPMD	XSTAQUD	XVIS	XIDELSM	XSTMIN	XINACTN
XVIS	.2747 (71) P= .020	.5565 (71) P= .000	1.0000 (71) P= .	.5607 (71) P= .000	.6056 (71) P= .000	.5509 (71) P= .000
XIDELSM	.1844 (71) P= .124	.6042 (71) P= .000	.5607 (71) P= .000	1.0000 (71) P= .	.4443 (71) P= .000	.2553 (71) P= .032
XSTMIN	.3093 (71) P= .009	.4384 (71) P= .000	.6056 (71) P= .000	.4443 (71) P= .000	1.0000 (71) P= .	.6198 (71) P= .000
XINACTN	.1491 (71) P= .214	.2792 (71) P= .018	.5509 (71) P= .000	.2553 (71) P= .032	.6198 (71) P= .000	1.0000 (71) P= .
XTEAM	.1747 (71) P= .145	.4465 (71) P= .000	.4864 (71) P= .000	.4594 (71) P= .000	.4981 (71) P= .000	.6702 (71) P= .000
XSLFREW	-.0549 (71) P= .649	.2327 (71) P= .051	.3963 (71) P= .001	.3125 (71) P= .008	.5084 (71) P= .000	.5622 (71) P= .000
XOPTHT	.2816 (71) P= .017	.4444 (71) P= .000	.6254 (71) P= .000	.5300 (71) P= .000	.6752 (71) P= .000	.6841 (71) P= .000
XINDACT	-.0210 (71) P= .862	.1902 (71) P= .112	-.1139 (71) P= .344	.0036 (71) P= .976	.2038 (71) P= .088	.4699 (71) P= .000
XEFFIC	.2711 (71) P= .022	.2470 (71) P= .038	.1666 (71) P= .165	.0798 (71) P= .509	.1081 (71) P= .370	.0485 (71) P= .688
XTEAMWK	.2726 (71) P= .021	.3418 (71) P= .004	.2829 (71) P= .017	.1618 (71) P= .178	.0887 (71) P= .462	.1978 (71) P= .098
XSFREW	.0152 (71) P= .900	.0099 (71) P= .935	-.0029 (71) P= .981	-.0515 (71) P= .670	.0831 (71) P= .491	.0640 (71) P= .596

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XREPMD	XSTAQUO	XVIS	XIDELSM	XSTMIN	XINACTN
XSFGL	-.1873	-.0460	-.0983	-.0806	.1878	.1457
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .118	P= .703	P= .415	P= .504	P= .117	P= .225
XNREW	-.1280	-.0533	-.1164	-.1230	-.0291	.0400
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .288	P= .659	P= .334	P= .307	P= .810	P= .741
XOPPTHT	.2408	.3390	.1879	.1612	.0962	.0493
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .043	P= .004	P= .117	P= .179	P= .425	P= .683
XSOBS	.1665	.0279	.0619	-.0949	.1892	.1730
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .165	P= .817	P= .608	P= .431	P= .114	P= .149
XINTSUP	.0636	.2748	.3489	.1861	.2257	.4485
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .598	P= .020	P= .003	P= .120	P= .058	P= .000
XCTSY	.1556	.2638	.3689	.3005	.3166	.4440
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .195	P= .026	P= .002	P= .011	P= .007	P= .000
XCVNHS	.0511	.1826	.2577	.2184	.0502	.0521
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .672	P= .127	P= .030	P= .067	P= .678	P= .666
XUNREL	-.1293	-.2270	-.2671	-.2418	-.1274	-.1962
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .282	P= .057	P= .024	P= .042	P= .290	P= .101
XCOMP	-.0711	-.3020	-.4288	-.2888	-.2746	-.4257
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .556	P= .010	P= .000	P= .015	P= .020	P= .000
XTOTEFF	-.2246	-.0060	.0101	.1024	.1572	.0686
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .087	P= .964	P= .939	P= .440	P= .235	P= .605
XOUTPUT	-.0699	.0834	-.0437	.1918	.0648	-.2097
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .599	P= .530	P= .743	P= .146	P= .626	P= .111

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XREPMD	XSTAQUO	XVIS	XIDELSM	XSTMIN	XINACTN
XINTEFF	-.2326	-.0137	.1233	.0687	.2307	.2606
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .076	P= .918	P= .352	P= .605	P= .079	P= .046
XCHNGEFF	-.2733	-.0808	-.1102	-.0136	-.0234	-.0571
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .036	P= .543	P= .406	P= .919	P= .860	P= .668
XORGPLN	-.0424	-.0366	.0357	.0546	.2334	.2733
	(59)	(59)	(59)	(59)	(59)	(59)
	P= .750	P= .783	P= .788	P= .681	P= .075	P= .036
XSLFPERF	.1304	.1855	.0125	.0352	-.1584	-.0647
	(58)	(58)	(58)	(58)	(58)	(58)
	P= .329	P= .163	P= .926	P= .793	P= .235	P= .629
XSUBPERF	.1368	.4675	.6861	.6407	.6562	.5617
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .255	P= .000	P= .000	P= .000	P= .000	P= .000
XDESIRE	.0890	.1791	.1238	.1055	-.1358	.0225
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .461	P= .135	P= .304	P= .381	P= .259	P= .852

(Coefficient / (Cases) / 2-tailed sig)

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- - Correlation Coefficients - -

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
AVRS	-.2820 (71) P= .017	-.4032 (71) P= .000	-.2681 (71) P= .024	-.3602 (71) P= .002	.1028 (71) P= .394	-.1104 (71) P= .360
ASGL	-.0672 (71) P= .577	.0392 (71) P= .745	.0022 (71) P= .986	-.1591 (71) P= .185	.0060 (71) P= .960	-.1274 (71) P= .290
INCOM	-.1064 (71) P= .377	-.0293 (71) P= .809	.1376 (71) P= .253	-.3146 (71) P= .008	.0690 (71) P= .567	-.0835 (71) P= .489
PARGL	.4520 (71) P= .000	.2902 (71) P= .014	.4762 (71) P= .000	.2878 (71) P= .015	.1612 (71) P= .179	.1763 (71) P= .141
MREW	.3464 (71) P= .003	.3311 (71) P= .005	.3297 (71) P= .005	.1838 (71) P= .125	-.0231 (71) P= .848	.0620 (71) P= .607
PREW	.3940 (71) P= .001	.3944 (71) P= .001	.4465 (71) P= .000	.1364 (71) P= .257	.1879 (71) P= .117	.1551 (71) P= .197
REPMD	.1957 (71) P= .102	-.0471 (71) P= .696	.2839 (71) P= .016	.0808 (71) P= .503	.2739 (71) P= .021	.2697 (71) P= .023
STAQUO	.3317 (71) P= .005	.1020 (71) P= .397	.3450 (71) P= .003	.1357 (71) P= .259	.1621 (71) P= .177	.3026 (71) P= .010
VIS	.4446 (71) P= .000	.2730 (71) P= .021	.4620 (71) P= .000	.2127 (71) P= .075	.1103 (71) P= .360	.2539 (71) P= .033
IDELSM	.3709 (71) P= .001	.2478 (71) P= .037	.4012 (71) P= .001	.1890 (71) P= .115	.1390 (71) P= .247	.2605 (71) P= .028
STMIN	.2201 (71) P= .065	.2231 (71) P= .061	.4255 (71) P= .000	.0452 (71) P= .708	.0348 (71) P= .773	.0070 (71) P= .954

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
INACTN	.4880 (71) P= .000	.3846 (71) P= .001	.4906 (71) P= .000	.4654 (71) P= .000	.1028 (71) P= .394	.1314 (71) P= .275
TEAM	.6125 (71) P= .000	.4051 (71) P= .000	.6216 (71) P= .000	.3643 (71) P= .002	.0982 (71) P= .415	.3560 (71) P= .002
SLFREW	.3485 (71) P= .003	.5255 (71) P= .000	.4422 (71) P= .000	.1640 (71) P= .172	.0271 (71) P= .823	-.0749 (71) P= .535
OPTHT	.4287 (71) P= .000	.3453 (71) P= .003	.6460 (71) P= .000	.2639 (71) P= .026	.1215 (71) P= .313	.2198 (71) P= .066
INDACT	.4386 (71) P= .000	.3004 (71) P= .011	.2641 (71) P= .026	.7438 (71) P= .000	.1509 (71) P= .209	.2124 (71) P= .075
EFFIC	.2228 (71) P= .062	.0544 (71) P= .652	.0851 (71) P= .480	.3461 (71) P= .003	.4968 (71) P= .000	.4116 (71) P= .000
TEAMWK	.3770 (71) P= .001	.1915 (71) P= .110	.4476 (71) P= .000	.1395 (71) P= .246	.0952 (71) P= .430	.4167 (71) P= .000
SFREW	.2296 (71) P= .054	.5531 (71) P= .000	.2760 (71) P= .020	.1230 (71) P= .307	.0099 (71) P= .935	-.1119 (71) P= .353
SFGL	.2234 (71) P= .061	.2838 (71) P= .016	.2336 (71) P= .050	.3547 (71) P= .002	.1544 (71) P= .199	.1304 (71) P= .278
NREW	.0352 (71) P= .771	.5271 (71) P= .000	.1743 (71) P= .146	.0503 (71) P= .677	-.0195 (71) P= .872	-.1209 (71) P= .315
OPPTHT	.1856 (71) P= .121	.1166 (71) P= .333	.2992 (71) P= .011	.2725 (71) P= .021	.4297 (71) P= .000	.2733 (71) P= .021

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
SOBS	.1220	.0401	-.0214	.1727	.1934	.0957
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .311	P= .740	P= .859	P= .150	P= .106	P= .427
INTSUP	.3555	.2358	.2347	.1895	.1676	.2472
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .002	P= .048	P= .049	P= .113	P= .162	P= .038
CTSY	.3579	.1634	.1545	.2783	.1584	.2661
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .002	P= .173	P= .198	P= .019	P= .187	P= .025
CVNMS	.1853	.1694	.1711	.1098	.1442	.1415
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .122	P= .158	P= .154	P= .362	P= .230	P= .239
UNREL	-.0765	-.0765	-.0844	.1483	-.1052	-.0121
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .526	P= .526	P= .484	P= .217	P= .383	P= .920
COMP	-.3502	-.0431	-.1286	-.1810	-.2958	-.2895
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .003	P= .721	P= .285	P= .131	P= .012	P= .014
TOTEFF	.1663	.0345	.0185	.1544	.0073	.2252
	(68)	(68)	(68)	(68)	(68)	(68)
	P= .175	P= .780	P= .881	P= .209	P= .953	P= .065
OUTPUT	.1162	-.0680	-.0264	.0869	.0450	.1387
	(68)	(68)	(68)	(68)	(68)	(68)
	P= .345	P= .582	P= .831	P= .481	P= .716	P= .259
INTEFF	.1214	-.0173	.0282	.0725	-.0771	.1516
	(68)	(68)	(68)	(68)	(68)	(68)
	P= .324	P= .888	P= .819	P= .557	P= .532	P= .217
CHNGEFF	.1106	.1220	.0009	.2925	.1309	.2837
	(68)	(68)	(68)	(68)	(68)	(68)
	P= .369	P= .322	P= .994	P= .015	P= .287	P= .019
ORGPLN	.2098	.1680	.1310	.0465	-.0354	.1678
	(68)	(68)	(68)	(68)	(68)	(68)
	P= .086	P= .171	P= .287	P= .707	P= .774	P= .171

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:48 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
SLFPERF	.0117	-.3966	-.2405	.3338	.5430	.3676
	(29)	(29)	(29)	(29)	(29)	(29)
	P= .952	P= .033	P= .209	P= .077	P= .002	P= .050
SUBPERF	.2839	.2990	.4226	.1997	.1386	.1198
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .016	P= .011	P= .000	P= .095	P= .249	P= .320
DESIRE	-.1016	-.0227	-.2858	.1797	-.0958	-.0194
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .399	P= .851	P= .016	P= .134	P= .427	P= .873
XAVRS	-.3257	-.5103	-.3578	-.4501	-.0451	-.0958
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .006	P= .000	P= .002	P= .000	P= .709	P= .427
XASGL	.0933	.1184	.1254	-.3143	.0227	-.0722
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .439	P= .325	P= .297	P= .008	P= .851	P= .550
XINCOM	.0392	.1191	.2025	-.3470	-.0223	-.0318
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .745	P= .323	P= .090	P= .003	P= .853	P= .792
XPARGL	.5677	.4834	.5409	.2830	.1624	.1442
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .017	P= .176	P= .230
XMREW	.4429	.4649	.4787	.3140	.1048	.1263
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .008	P= .384	P= .294
XPREW	.5699	.5747	.6034	.2662	.2047	.3142
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .000	P= .000	P= .025	P= .087	P= .008
XREPMD	.1747	-.0549	.2816	-.0210	.2711	.2726
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .145	P= .649	P= .017	P= .862	P= .022	P= .021
XSTAQUO	.4465	.2327	.4444	.1902	.2470	.3418
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .051	P= .000	P= .112	P= .038	P= .004

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
XVIS	.4864 (71) P= .000	.3963 (71) P= .001	.6254 (71) P= .000	.1139 (71) P= .344	.1666 (71) P= .165	.2829 (71) P= .017
XIDELSM	.4594 (71) P= .000	.3125 (71) P= .008	.5300 (71) P= .000	.0036 (71) P= .976	.0798 (71) P= .509	.1618 (71) P= .178
XSTMIN	.4981 (71) P= .000	.5084 (71) P= .000	.6752 (71) P= .000	.2038 (71) P= .088	.1081 (71) P= .370	.0887 (71) P= .462
XINACTN	.6702 (71) P= .000	.5622 (71) P= .000	.6841 (71) P= .000	.4699 (71) P= .000	.0485 (71) P= .688	.1978 (71) P= .098
XTEAM	1.0000 (71) P= .	.4459 (71) P= .000	.5967 (71) P= .000	.4405 (71) P= .000	.2402 (71) P= .044	.5326 (71) P= .000
XSLFREW	.4459 (71) P= .000	1.0000 (71) P= .	.6145 (71) P= .000	.2499 (71) P= .036	.0150 (71) P= .901	-.0368 (71) P= .760
XOPTHT	.5967 (71) P= .000	.6145 (71) P= .000	1.0000 (71) P= .	.1862 (71) P= .120	.0581 (71) P= .630	.2401 (71) P= .044
XINDACT	.4405 (71) P= .000	.2499 (71) P= .036	.1862 (71) P= .120	1.0000 (71) P= .	.4655 (71) P= .000	.3518 (71) P= .003
XEFFIC	.2402 (71) P= .044	.0150 (71) P= .901	.0581 (71) P= .630	.4655 (71) P= .000	1.0000 (71) P= .	.4686 (71) P= .000
XTEAMWK	.5326 (71) P= .000	-.0368 (71) P= .760	.2401 (71) P= .044	.3518 (71) P= .003	.4686 (71) P= .000	1.0000 (71) P= .
XSFREW	.0407 (71) P= .736	.4214 (71) P= .000	.1068 (71) P= .375	-.0209 (71) P= .862	-.0192 (71) P= .874	-.1704 (71) P= .155

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
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- - Correlation Coefficients - -

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
XSFGL	.1130 (71) P= .348	.3172 (71) P= .007	.0696 (71) P= .564	.4441 (71) P= .000	.1853 (71) P= .122	.0869 (71) P= .471
XNREW	.0265 (71) P= .826	-.2745 (71) P= .021	-.0325 (71) P= .788	.2112 (71) P= .077	.2526 (71) P= .034	-.0026 (71) P= .983
XOPPTHT	.2062 (71) P= .085	.0192 (71) P= .873	.2363 (71) P= .047	.3502 (71) P= .003	.6166 (71) P= .000	.5438 (71) P= .000
XSOBS	.1622 (71) P= .176	.0190 (71) P= .875	.0878 (71) P= .467	.2360 (71) P= .048	.3397 (71) P= .004	.2360 (71) P= .048
XINTSUP	.5048 (71) P= .000	.2968 (71) P= .012	.3994 (71) P= .001	.2317 (71) P= .052	.0563 (71) P= .641	.3908 (71) P= .001
XCTSY	.5145 (71) P= .000	.2683 (71) P= .024	.3775 (71) P= .001	.2696 (71) P= .023	.1551 (71) P= .197	.3017 (71) P= .011
XCVNWS	.2672 (71) P= .024	.1470 (71) P= .221	.0405 (71) P= .737	.0871 (71) P= .470	.1680 (71) P= .161	.2968 (71) P= .012
XUNREL	-.3760 (71) P= .001	-.1198 (71) P= .320	-.2495 (71) P= .036	-.1967 (71) P= .100	-.2924 (71) P= .013	-.3436 (71) P= .003
XCOMP	-.4828 (71) P= .000	-.2226 (71) P= .062	-.3015 (71) P= .011	-.2762 (71) P= .020	-.0775 (71) P= .520	-.3529 (71) P= .003
XTOTEFF	.2221 (59) P= .091	.0079 (59) P= .953	.0741 (59) P= .577	.1638 (59) P= .215	-.0483 (59) P= .717	.2728 (59) P= .037
XOUTPUT	-.0122 (59) P= .927	-.1970 (59) P= .135	-.0688 (59) P= .605	-.0461 (59) P= .729	-.0183 (59) P= .890	.2203 (59) P= .094

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
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-- Correlation Coefficients --

	XTEAM	XSLFREW	XOPTHT	XINDACT	XEFFIC	XTEAMWK
XINTEFF	.3537 (59) P= .006	.2352 (59) P= .073	.2177 (59) P= .098	.1246 (59) P= .347	-.1371 (59) P= .300	.1923 (59) P= .145
XCHNGEFF	.0853 (59) P= .520	-.0679 (59) P= .610	-.1108 (59) P= .404	.2673 (59) P= .041	.0795 (59) P= .549	.1709 (59) P= .196
XORGPLN	.2431 (59) P= .064	.0002 (59) P= .999	.2436 (59) P= .063	.2175 (59) P= .098	-.0562 (59) P= .673	.2543 (59) P= .052
XSLFPERF	.0322 (58) P= .811	-.2016 (58) P= .129	-.0856 (58) P= .523	.0775 (58) P= .563	.0871 (58) P= .516	.1336 (58) P= .317
XSUBPERF	.4643 (71) P= .000	.5162 (71) P= .000	.6440 (71) P= .000	.2647 (71) P= .026	.2066 (71) P= .084	.1765 (71) P= .141
XDESIRE	.1449 (71) P= .228	-.0326 (71) P= .787	.0748 (71) P= .535	.2731 (71) P= .021	.2029 (71) P= .090	.2885 (71) P= .015

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
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- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTHT	XSOBS	XINTSUP
AVRS	.0192 (71) P= .874	-.3279 (71) P= .005	-.1561 (71) P= .193	.0099 (72) P= .934	-.0403 (71) P= .739	-.2527 (71) P= .033
ASGL	.0674 (71) P= .576	-.1147 (71) P= .341	.0197 (71) P= .871	-.1198 (72) P= .316	-.0666 (71) P= .581	-.0195 (71) P= .872
INCOM	-.0158 (71) P= .896	-.2244 (71) P= .060	.0060 (71) P= .960	.0779 (72) P= .515	.0399 (71) P= .741	-.1174 (71) P= .329
PARGL	-.2235 (71) P= .061	.1195 (71) P= .321	-.1030 (71) P= .393	.0671 (72) P= .575	-.0025 (71) P= .984	.1614 (71) P= .179
MREW	.0123 (71) P= .919	.1661 (71) P= .166	.0207 (71) P= .864	-.0085 (72) P= .944	-.0626 (71) P= .604	.0768 (71) P= .525
PREW	.1542 (71) P= .199	.0729 (71) P= .546	.1348 (71) P= .263	.1748 (72) P= .142	.0898 (71) P= .457	.0864 (71) P= .474
REPMD	.0403 (71) P= .739	-.2340 (71) P= .049	-.0818 (71) P= .498	.2344 (72) P= .047	.1116 (71) P= .354	.0738 (71) P= .541
STAQUO	-.1031 (71) P= .392	-.1393 (71) P= .247	-.1475 (71) P= .219	.2066 (72) P= .082	-.0372 (71) P= .758	.1644 (71) P= .171
VIS	-.0455 (71) P= .706	-.0144 (71) P= .905	-.0368 (71) P= .760	.1641 (72) P= .168	.0546 (71) P= .651	.1583 (71) P= .187
IDELSM	-.0392 (71) P= .746	.0492 (71) P= .683	.0119 (71) P= .922	.2029 (72) P= .087	.0749 (71) P= .535	.1238 (71) P= .303
STMIN	.0676 (71) P= .575	-.1450 (71) P= .227	.0034 (71) P= .977	.0360 (72) P= .764	.1476 (71) P= .219	-.0067 (71) P= .956

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
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- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTHT	XSOBS	XINTSUP
INACTN	-.0624 (71) P= .605	.0678 (71) P= .574	-.0471 (71) P= .697	-.0337 (72) P= .779	.0925 (71) P= .443	.2941 (71) P= .013
TEAM	.0056 (71) P= .963	.0281 (71) P= .816	-.1729 (71) P= .149	.0793 (72) P= .508	.0974 (71) P= .419	.4436 (71) P= .000
SLFREW	.0606 (71) P= .616	.1163 (71) P= .334	.0423 (71) P= .726	-.0703 (72) P= .558	-.0399 (71) P= .741	.1851 (71) P= .122
OPTHT	-.0486 (71) P= .687	.0167 (71) P= .890	.0000 (71) P=1.000	.1436 (72) P= .229	.0415 (71) P= .731	.1986 (71) P= .097
INDACT	.0578 (71) P= .632	.4093 (71) P= .000	.1081 (71) P= .369	.1326 (72) P= .267	.1187 (71) P= .324	.2278 (71) P= .056
EFFIC	.0742 (71) P= .539	.1794 (71) P= .134	.1582 (71) P= .188	.4793 (72) P= .000	.3134 (71) P= .008	.0963 (71) P= .424
TEAMWK	-.2379 (71) P= .046	-.0371 (71) P= .759	-.2262 (71) P= .058	.0694 (72) P= .562	-.1104 (71) P= .360	.3965 (71) P= .001
SFREW	.5303 (71) P= .000	.0644 (71) P= .594	.2289 (71) P= .055	-.1145 (72) P= .338	.0938 (71) P= .436	.0837 (71) P= .488
SFGL	-.1293 (71) P= .283	.2917 (71) P= .014	.0253 (71) P= .834	.0030 (72) P= .980	.0558 (71) P= .644	.1225 (71) P= .309
NREW	.3860 (71) P= .001	.3034 (71) P= .010	.4873 (71) P= .000	.0208 (72) P= .863	-.0193 (71) P= .873	.1205 (71) P= .317
OPPTHT	-.0955 (71) P= .428	.1625 (71) P= .176	.0088 (71) P= .942	.5015 (73) P= .000	.1698 (71) P= .157	-.0695 (71) P= .565

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
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- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTHT	XSOBS	XINTSUP
SOBS	.2499	.0528	.3271	.1107	.4639	-.0480
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .036	P= .662	P= .005	P= .354	P= .000	P= .691
INTSUP	-.0520	.0474	-.0597	-.0278	.0615	.7492
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .667	P= .695	P= .621	P= .817	P= .610	P= .000
CTSY	-.1307	.1368	-.0094	.1248	.0023	.5504
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .277	P= .255	P= .938	P= .296	P= .985	P= .000
CVNWS	-.0320	.2268	.0090	.0113	.2063	.2650
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .791	P= .057	P= .941	P= .925	P= .084	P= .026
UNREL	.0902	-.0510	.1707	-.0224	.0069	-.1855
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .454	P= .673	P= .155	P= .852	P= .955	P= .121
COMP	.1438	-.1363	.0670	-.0919	-.0670	-.2775
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .231	P= .257	P= .579	P= .443	P= .579	P= .019
TOTEFF	-.0842	.3132	.0908	.0839	.1629	.1955
	(68)	(68)	(68)	(70)	(68)	(68)
	P= .495	P= .009	P= .461	P= .490	P= .185	P= .110
OUTPUT	-.1472	.1869	-.0668	-.0026	.0842	.0359
	(68)	(68)	(68)	(70)	(68)	(68)
	P= .231	P= .127	P= .588	P= .983	P= .495	P= .771
INTEFF	-.0173	.2649	.1031	-.0186	.1956	.1517
	(68)	(68)	(68)	(70)	(68)	(68)
	P= .889	P= .029	P= .403	P= .879	P= .110	P= .217
CHNGEFF	-.1170	.2819	.2166	.3134	.0954	.2466
	(68)	(68)	(68)	(70)	(68)	(68)
	P= .342	P= .020	P= .076	P= .008	P= .439	P= .043
ORGPLN	.0132	.1425	-.0101	.0295	.0496	.2515
	(68)	(68)	(68)	(70)	(68)	(68)
	P= .915	P= .246	P= .935	P= .809	P= .688	P= .039

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
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- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTHT	XSOBS	XINTSUP
SLFPERF	.1407	.1963	.0772	.3751	.3735	-.1466
	(29)	(29)	(29)	(31)	(29)	(29)
	P= .467	P= .307	P= .691	P= .038	P= .046	P= .448
SUBPERF	-.0382	.0271	-.0344	.1533	.0185	.1096
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .752	P= .822	P= .776	P= .199	P= .879	P= .363
DESIRE	-.0930	.3105	-.1531	-.0661	-.2300	-.1165
	(71)	(71)	(71)	(72)	(71)	(71)
	P= .440	P= .008	P= .203	P= .581	P= .054	P= .333
XAVRS	.0768	-.3363	-.0792	-.1247	.0765	-.2880
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .525	P= .004	P= .512	P= .300	P= .526	P= .015
XASGL	-.0073	-.1448	-.0943	-.0908	-.1102	-.0639
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .952	P= .228	P= .434	P= .451	P= .360	P= .597
XINCOM	-.0707	-.2048	-.2088	-.0435	-.0897	-.0021
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .558	P= .087	P= .081	P= .719	P= .457	P= .986
XPARGL	.0497	.1706	.0647	.1283	.0001	.1697
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .681	P= .155	P= .592	P= .286	P=1.000	P= .157
XMREW	.1187	.3251	.1289	.1878	.0520	.2085
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .324	P= .006	P= .284	P= .117	P= .667	P= .081
XPREW	.1801	.1529	.0585	.2721	.1177	.3049
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .133	P= .203	P= .628	P= .022	P= .328	P= .010
XREPMD	.0152	-.1873	-.1280	.2408	.1665	.0636
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .900	P= .118	P= .288	P= .043	P= .165	P= .598
XSTAQUO	.0099	-.0460	-.0533	.3390	.0279	.2748
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .935	P= .703	P= .659	P= .004	P= .817	P= .020

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
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- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTHT	XSOBS	XINTSUP
XVIS	-.0029 (71) P= .981	-.0983 (71) P= .415	-.1164 (71) P= .334	.1879 (71) P= .117	.0619 (71) P= .608	.3489 (71) P= .003
XIDELSM	-.0515 (71) P= .670	-.0806 (71) P= .504	-.1230 (71) P= .307	.1612 (71) P= .179	-.0949 (71) P= .431	.1861 (71) P= .120
XSTMIN	.0831 (71) P= .491	.1878 (71) P= .117	-.0291 (71) P= .810	.0962 (71) P= .425	.1892 (71) P= .114	.2257 (71) P= .058
XINACTN	.0640 (71) P= .596	.1457 (71) P= .225	.0400 (71) P= .741	.0493 (71) P= .683	.1730 (71) P= .149	.4485 (71) P= .000
XTEAM	.0407 (71) P= .736	.1130 (71) P= .348	.0265 (71) P= .826	.2062 (71) P= .085	.1622 (71) P= .176	.5048 (71) P= .000
XSLFREW	.4214 (71) P= .000	.3172 (71) P= .007	.2745 (71) P= .021	.0192 (71) P= .873	.0190 (71) P= .875	.2968 (71) P= .012
XOPTHT	.1068 (71) P= .375	.0696 (71) P= .564	-.0325 (71) P= .788	.2363 (71) P= .047	.0878 (71) P= .467	.3994 (71) P= .001
XINDACT	-.0209 (71) P= .862	.4441 (71) P= .000	.2112 (71) P= .077	.3502 (71) P= .003	.2360 (71) P= .048	.2317 (71) P= .052
XEFFIC	-.0192 (71) P= .874	.1853 (71) P= .122	.2526 (71) P= .034	.6166 (71) P= .000	.3397 (71) P= .004	.0563 (71) P= .641
XTEAMWK	-.1704 (71) P= .155	.0869 (71) P= .471	-.0026 (71) P= .983	.5438 (71) P= .000	.2360 (71) P= .048	.3908 (71) P= .001
XSFREW	1.0000 (71) P= .	.0914 (71) P= .448	.5005 (71) P= .000	-.0048 (71) P= .968	.4339 (71) P= .000	-.0758 (71) P= .530

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" . " is printed if a coefficient cannot be computed

19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:49 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTHT	XSOBS	XINTSUP
XSFGL	.0914	1.0000	.2793	.2580	.2009	-.0322
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .448	P= .	P= .018	P= .030	P= .093	P= .790
XNREW	.5005	.2793	1.0000	.1285	.4527	-.0377
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .018	P= .	P= .286	P= .000	P= .755
XOPPTHT	-.0048	.2580	.1285	1.0000	.3535	.0682
	(71)	(71)	(71)	(73)	(71)	(71)
	P= .968	P= .030	P= .286	P= .	P= .002	P= .572
XSOBS	.4339	.2009	.4527	.3535	1.0000	.0936
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .000	P= .093	P= .000	P= .002	P= .	P= .437
XINTSUP	-.0758	-.0322	-.0377	.0682	.0936	1.0000
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .530	P= .790	P= .755	P= .572	P= .437	P= .
XCTSY	-.0930	.1007	-.1104	.0988	.1201	.6729
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .440	P= .404	P= .359	P= .412	P= .319	P= .000
XCVNWS	.0525	-.0596	.0929	.0066	.0119	.4864
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .664	P= .621	P= .441	P= .956	P= .921	P= .000
XUNREL	.1622	-.2585	.1896	-.3004	-.0380	-.4681
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .177	P= .030	P= .113	P= .011	P= .753	P= .000
XCOMP	.1398	-.1461	.2137	-.1734	.0846	-.5358
	(71)	(71)	(71)	(71)	(71)	(71)
	P= .245	P= .224	P= .074	P= .148	P= .483	P= .000
XTOTEFF	-.0668	.1782	.1640	.0690	.1575	.1197
	(59)	(59)	(59)	(61)	(59)	(59)
	P= .615	P= .177	P= .215	P= .597	P= .234	P= .367
XOUTPUT	-.1088	.0242	-.0309	.1277	.0368	-.0396
	(59)	(59)	(59)	(61)	(59)	(59)
	P= .412	P= .855	P= .816	P= .327	P= .782	P= .766

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XSFREW	XSFGL	XNREW	XOPPTMT	XSOBS	XINTSUP
XINTEFF	-.0205 (59) P= .877	.1575 (59) P= .234	.1586 (59) P= .230	-.1012 (61) P= .438	.0730 (59) P= .583	.1461 (59) P= .269
XCHNGEFF	.0567 (59) P= .670	.1886 (59) P= .153	.3164 (59) P= .015	.1778 (61) P= .170	.2804 (59) P= .031	.0901 (59) P= .497
XORGPLN	-.2219 (59) P= .091	.1722 (59) P= .192	-.0289 (59) P= .828	.0213 (61) P= .870	.0930 (59) P= .483	.2283 (59) P= .082
XSLFPERF	.1649 (58) P= .216	-.2327 (58) P= .079	.1725 (58) P= .195	.0186 (60) P= .888	.1536 (58) P= .250	-.0999 (58) P= .456
XSUBPERF	.0562 (71) P= .642	.0524 (71) P= .664	.0034 (71) P= .978	.2772 (71) P= .019	.0481 (71) P= .691	.2421 (71) P= .042
XDESIRE	-.1933 (71) P= .106	.1967 (71) P= .100	-.1096 (71) P= .363	.1942 (71) P= .105	-.1236 (71) P= .305	.0664 (71) P= .582

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:49 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XCTSY	XCVIIWS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
AVRS	-.2807 (71) P= .018	-.1634 (71) P= .173	.1766 (71) P= .141	.2205 (71) P= .065	-.1647 (60) P= .209	.1065 (60) P= .418
ASGL	-.0168 (71) P= .890	.0189 (71) P= .876	-.0688 (71) P= .569	-.0137 (71) P= .910	.1182 (60) P= .368	.1405 (60) P= .284
INCOM	.0477 (71) P= .693	.0129 (71) P= .915	.0133 (71) P= .912	.0913 (71) P= .449	.0609 (60) P= .644	.1395 (60) P= .288
PARGL	.2843 (71) P= .016	.0555 (71) P= .645	-.2503 (71) P= .035	-.2123 (71) P= .075	.1003 (60) P= .446	-.0020 (60) P= .988
MREW	.1607 (71) P= .181	.1591 (71) P= .185	-.1332 (71) P= .268	-.2390 (71) P= .045	.1993 (60) P= .127	.1258 (60) P= .338
PREW	.2214 (71) P= .064	.0875 (71) P= .468	-.2112 (71) P= .077	-.1471 (71) P= .221	.2045 (60) P= .117	.1199 (60) P= .362
REPMD	.0647 (71) P= .592	-.0129 (71) P= .915	-.0583 (71) P= .629	-.1843 (71) P= .124	.0515 (60) P= .696	.1305 (60) P= .320
STAQUO	.1922 (71) P= .108	.1505 (71) P= .210	-.1903 (71) P= .112	-.3329 (71) P= .005	-.0250 (60) P= .849	.1375 (60) P= .295
VIS	.2523 (71) P= .034	.1723 (71) P= .151	-.1819 (71) P= .129	-.3903 (71) P= .001	.1460 (60) P= .266	.0935 (60) P= .477
IDELSM	.2518 (71) P= .034	.1643 (71) P= .171	-.1780 (71) P= .137	-.2907 (71) P= .014	.1922 (60) P= .141	.2565 (60) P= .048
STMIN	.1176 (71) P= .329	-.0732 (71) P= .544	-.0148 (71) P= .902	-.0714 (71) P= .554	.2003 (60) P= .125	.2112 (60) P= .105

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES   VM/SP CMS
10:21:49 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	XCTSY	XCVNWS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
INACTN	.3761 (71) P= .001	.0333 (71) P= .783	-.2465 (71) P= .038	-.3512 (71) P= .003	.0701 (60) P= .594	-.1274 (60) P= .332
TEAM	.5394 (71) P= .000	.0891 (71) P= .460	-.4196 (71) P= .000	-.5282 (71) P= .000	.1436 (60) P= .274	-.0593 (60) P= .653
SLFREW	.1648 (71) P= .170	.0881 (71) P= .465	-.1606 (71) P= .181	-.2232 (71) P= .061	.1257 (60) P= .338	-.0037 (60) P= .978
OPTHT	.2785 (71) P= .019	-.0013 (71) P= .992	-.2636 (71) P= .026	-.1743 (71) P= .146	.1402 (60) P= .285	-.0305 (60) P= .817
INDACT	.3082 (71) P= .009	.0642 (71) P= .595	-.1297 (71) P= .281	-.3194 (71) P= .007	.1391 (60) P= .289	-.0846 (60) P= .520
EFFIC	.2277 (71) P= .056	.0693 (71) P= .566	-.1488 (71) P= .216	-.0813 (71) P= .500	-.0986 (60) P= .453	-.1510 (60) P= .249
TEAMWK	.3337 (71) P= .004	.0592 (71) P= .624	-.2642 (71) P= .026	-.4474 (71) P= .000	.0690 (60) P= .600	-.0083 (60) P= .950
SFREW	.1307 (71) P= .277	.1824 (71) P= .128	.0361 (71) P= .765	-.0973 (71) P= .420	-.0006 (60) P= .996	-.0452 (60) P= .731
SFGL	.1977 (71) P= .098	-.0209 (71) P= .863	-.0937 (71) P= .437	.0266 (71) P= .826	.0350 (60) P= .790	-.0861 (60) P= .513
NREW	.0009 (71) P= .994	.1326 (71) P= .270	-.0225 (71) P= .852	-.1263 (71) P= .294	-.0234 (60) P= .859	-.0471 (60) P= .721
OPPTHT	.0454 (71) P= .707	-.1448 (71) P= .228	-.2194 (71) P= .066	.1131 (71) P= .348	.0468 (61) P= .720	.0362 (61) P= .782

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:50 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

-- Correlation Coefficients --

	XCTSY	XCVNWS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
SOBS	-.1190	-.0124	.1832	.2936	.0466	.0476
	(71)	(71)	(71)	(71)	(60)	(60)
	P= .323	P= .918	P= .126	P= .013	P= .724	P= .718
INTSUP	.6041	.3900	-.4287	-.4475	.1198	.0022
	(71)	(71)	(71)	(71)	(60)	(60)
	P= .000	P= .001	P= .000	P= .000	P= .362	P= .987
CTSY	.5726	.3992	-.4337	-.6052	.1126	.0582
	(71)	(71)	(71)	(71)	(60)	(60)
	P= .000	P= .001	P= .000	P= .000	P= .392	P= .659
CVNWS	.3275	.3890	-.2397	-.3097	-.0517	-.0412
	(71)	(71)	(71)	(71)	(60)	(60)
	P= .005	P= .001	P= .044	P= .009	P= .695	P= .754
UNREL	-.3302	-.1717	.6186	.2248	.0739	-.0612
	(71)	(71)	(71)	(71)	(60)	(60)
	P= .005	P= .152	P= .000	P= .059	P= .575	P= .642
COMP	-.3763	-.3011	.4454	.5037	-.0942	-.0981
	(71)	(71)	(71)	(71)	(60)	(60)
	P= .001	P= .011	P= .000	P= .000	P= .474	P= .456
TOTEFF	.0105	.0298	-.1953	-.1306	.6949	.5081
	(68)	(68)	(68)	(68)	(61)	(61)
	P= .932	P= .810	P= .110	P= .288	P= .000	P= .000
OUTPUT	-.0283	-.0264	-.1376	-.0953	.5763	.6375
	(68)	(68)	(68)	(68)	(61)	(61)
	P= .819	P= .831	P= .263	P= .440	P= .000	P= .000
INTEFF	-.0159	-.0593	-.1103	-.0384	.5981	.2800
	(68)	(68)	(68)	(68)	(61)	(61)
	P= .897	P= .631	P= .370	P= .756	P= .000	P= .029
CHNGEFF	.1219	.1627	-.2392	-.1646	.4859	.2835
	(68)	(68)	(68)	(68)	(61)	(61)
	P= .322	P= .185	P= .049	P= .180	P= .000	P= .027
ORGPLN	-.0223	.1250	-.1756	-.1753	.3587	.3688
	(68)	(68)	(68)	(68)	(61)	(61)
	P= .857	P= .310	P= .152	P= .153	P= .005	P= .003

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:50 The University of Maryland CSC IBM 3081GX VM/SP CMS [redacted]

- - Correlation Coefficients - -

	XCTSY	XCVNWS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
SLFPERF	.0102 (29) P= .958	.1026 (29) P= .596	.0493 (29) P= .799	-.0818 (29) P= .673	.0396 (27) P= .845	.1787 (27) P= .373
SUBPERF	.2528 (71) P= .033	.1204 (71) P= .317	-.2272 (71) P= .057	-.2744 (71) P= .021	.1417 (60) P= .280	.2092 (60) P= .109
DESIRE	-.0929 (71) P= .441	-.1123 (71) P= .351	-.1012 (71) P= .401	-.0763 (71) P= .527	.0143 (60) P= .914	.0916 (60) P= .486
XAVRS	-.2705 (71) P= .023	-.1742 (71) P= .146	.1897 (71) P= .113	.2903 (71) P= .014	-.1679 (59) P= .204	.0672 (59) P= .613
XASGL	-.0357 (71) P= .768	-.1005 (71) P= .404	-.1332 (71) P= .268	.0342 (71) P= .777	.0375 (59) P= .778	.2305 (59) P= .079
XINCOM	.1196 (71) P= .321	-.0663 (71) P= .583	.0042 (71) P= .972	-.1025 (71) P= .395	-.1363 (59) P= .303	.1320 (59) P= .319
XPARGL	.2973 (71) P= .012	.1470 (71) P= .221	-.1185 (71) P= .325	-.1769 (71) P= .140	.0008 (59) P= .995	-.1416 (59) P= .285
XMREW	.2690 (71) P= .023	.1766 (71) P= .141	-.2403 (71) P= .044	-.0793 (71) P= .511	.1316 (59) P= .320	-.0357 (59) P= .789
XPREW	.3170 (71) P= .007	.2407 (71) P= .043	-.1963 (71) P= .101	-.2809 (71) P= .018	.1177 (59) P= .375	.0138 (59) P= .917
XREPMD	.1556 (71) P= .195	.0511 (71) P= .672	-.1293 (71) P= .282	-.0711 (71) P= .556	-.2246 (59) P= .087	-.0699 (59) P= .599
XSTAQUO	.2638 (71) P= .026	.1826 (71) P= .127	-.2270 (71) P= .057	-.3020 (71) P= .010	-.0060 (59) P= .964	.0834 (59) P= .530

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS [redacted]
10:21:50 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	XCTSY	XCVNWS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
XVIS	.3689 (71) P= .002	.2577 (71) P= .030	-.2671 (71) P= .024	-.4288 (71) P= .000	.0101 (59) P= .939	-.0437 (59) P= .743
XIDELSM	.3005 (71) P= .011	.2184 (71) P= .067	-.2418 (71) P= .042	-.2888 (71) P= .015	.1024 (59) P= .440	.1918 (59) P= .146
XSTMIN	.3166 (71) P= .007	.0502 (71) P= .678	-.1274 (71) P= .290	-.2746 (71) P= .020	.1572 (59) P= .235	.0648 (59) P= .626
XINACTN	.4440 (71) P= .000	.0521 (71) P= .666	-.1962 (71) P= .101	-.4257 (71) P= .000	.0686 (59) P= .605	-.2097 (59) P= .111
XTEAM	.5145 (71) P= .000	.2672 (71) P= .024	-.3760 (71) P= .001	-.4828 (71) P= .000	.2221 (59) P= .091	-.0122 (59) P= .927
XSLFREW	.2683 (71) P= .024	.1470 (71) P= .221	-.1198 (71) P= .320	-.2226 (71) P= .062	.0079 (59) P= .953	-.1970 (59) P= .135
XOPTHT	.3775 (71) P= .001	.0405 (71) P= .737	-.2495 (71) P= .036	-.3015 (71) P= .011	.0741 (59) P= .577	-.0688 (59) P= .605
XINDACT	.2696 (71) P= .023	.0871 (71) P= .470	-.1967 (71) P= .100	-.2762 (71) P= .020	.1638 (59) P= .215	-.0461 (59) P= .729
XEFFIC	.1551 (71) P= .197	.1680 (71) P= .161	-.2924 (71) P= .013	-.0775 (71) P= .520	-.0483 (59) P= .717	-.0183 (59) P= .890
XTEAMWK	.3017 (71) P= .011	.2968 (71) P= .012	-.3436 (71) P= .003	-.3529 (71) P= .003	.2728 (59) P= .037	.2203 (59) P= .094
XSFREW	-.0930 (71) P= .440	.0525 (71) P= .664	.1622 (71) P= .177	.1398 (71) P= .245	-.0668 (59) P= .615	-.1088 (59) P= .412

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL OP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:50 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XCTSY	XCVNHS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
XSFGL	.1007 (71) P= .404	-.0596 (71) P= .621	-.2585 (71) P= .030	-.1461 (71) P= .224	.1782 (59) P= .177	.0242 (59) P= .855
XNREW	-.1104 (71) P= .359	.0929 (71) P= .441	.1896 (71) P= .113	.2137 (71) P= .074	.1640 (59) P= .215	-.0309 (59) P= .816
XOPPTHT	.0988 (71) P= .412	.0066 (71) P= .956	-.3004 (71) P= .011	-.1734 (71) P= .148	.0690 (61) P= .597	.1277 (61) P= .327
XSOBS	.1201 (71) P= .319	.0119 (71) P= .921	-.0380 (71) P= .753	.0846 (71) P= .483	.1575 (59) P= .234	.0368 (59) P= .782
XINTSUP	.6729 (71) P= .000	.4864 (71) P= .000	-.4681 (71) P= .000	-.5358 (71) P= .000	.1197 (59) P= .367	-.0396 (59) P= .766
XCTSY	1.0000 (71) P= .	.4302 (71) P= .000	-.5033 (71) P= .000	-.5566 (71) P= .000	-.0858 (59) P= .518	-.2862 (59) P= .028
XCVNHS	.4302 (71) P= .000	1.0000 (71) P= .	-.2959 (71) P= .012	-.4422 (71) P= .000	-.0796 (59) P= .549	-.0736 (59) P= .580
XUNREL	-.5033 (71) P= .000	-.2959 (71) P= .012	1.0000 (71) P= .	.5148 (71) P= .000	.0004 (59) P= .997	.0434 (59) P= .744
XCOMP	-.5566 (71) P= .000	-.4622 (71) P= .000	.5148 (71) P= .000	1.0000 (71) P= .	-.0378 (59) P= .776	.0148 (59) P= .911
XTOTEFF	-.0858 (59) P= .518	-.0796 (59) P= .549	.0004 (59) P= .997	-.0378 (59) P= .776	1.0000 (61) P= .	.7771 (61) P= .000
XOUTPUT	-.2862 (59) P= .028	-.0736 (59) P= .580	.0434 (59) P= .744	.0148 (59) P= .911	.7771 (61) P= .000	1.0000 (61) P= .

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:50 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XCTSY	XCVHHS	XUNREL	XCOMP	XTOTEFF	XOUTPUT
XINTEFF	.0303 (59) P= .820	-.0207 (59) P= .876	.0092 (59) P= .945	-.0820 (59) P= .537	.7763 (61) P= .000	.3221 (61) P= .011
XCHNGEFF	-.0671 (59) P= .613	-.0787 (59) P= .554	.0372 (59) P= .780	.0557 (59) P= .675	.8282 (61) P= .000	.5892 (61) P= .000
XORGPLN	.1478 (59) P= .264	-.0932 (59) P= .483	-.1458 (59) P= .271	-.1031 (59) P= .437	.5211 (61) P= .000	.3814 (61) P= .002
XSLFPERF	-.1957 (58) P= .141	-.0327 (58) P= .808	.1027 (58) P= .443	.1565 (58) P= .241	.0968 (51) P= .499	.1128 (51) P= .430
XSUBPERF	.2682 (71) P= .024	.1872 (71) P= .118	-.1646 (71) P= .170	-.3271 (71) P= .005	.1376 (59) P= .299	.1572 (59) P= .234
XDESIRE	.1552 (71) P= .196	.0335 (71) P= .781	-.3769 (71) P= .001	-.1297 (71) P= .281	-.1526 (59) P= .249	-.1473 (59) P= .266

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS [redacted]
10:21:50 The University of Maryland CSC IBM 3081GX

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- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
AVRS	-.2955 (60) P= .022	-.1487 (60) P= .257	-.1404 (60) P= .284	.0581 (59) P= .662	-.4423 (71) P= .000	-.1512 (71) P= .208
ASGL	.1059 (60) P= .421	.0864 (60) P= .512	-.0188 (60) P= .886	-.2222 (59) P= .091	-.0512 (71) P= .671	-.1324 (71) P= .271
INCOM	-.0271 (60) P= .837	.0213 (60) P= .872	.0792 (60) P= .547	-.1441 (59) P= .276	.1280 (71) P= .287	-.1127 (71) P= .349
PARGL	.1704 (60) P= .193	-.0181 (60) P= .891	.2084 (60) P= .110	-.0390 (59) P= .769	.5211 (71) P= .000	.1130 (71) P= .348
MREW	.2614 (60) P= .044	.0942 (60) P= .474	.0446 (60) P= .735	-.0700 (59) P= .598	.4457 (71) P= .000	.0177 (71) P= .884
PREW	.2046 (60) P= .117	.1543 (60) P= .239	.1142 (60) P= .385	-.0533 (59) P= .688	.4922 (71) P= .000	-.0173 (71) P= .886
REPMD	.0101 (60) P= .939	-.0535 (60) P= .685	.0777 (60) P= .555	.0270 (59) P= .839	.1296 (71) P= .281	.0358 (71) P= .767
STAQUO	-.0847 (60) P= .520	-.1497 (60) P= .254	.0475 (60) P= .718	.2383 (59) P= .069	.4103 (71) P= .000	.2232 (71) P= .061
VIS	.1796 (60) P= .170	.0432 (60) P= .743	.1065 (60) P= .418	-.0310 (59) P= .816	.5302 (71) P= .000	-.0059 (71) P= .961
IDELSM	.0801 (60) P= .543	.0828 (60) P= .529	.1797 (60) P= .169	.1213 (59) P= .360	.4215 (71) P= .000	.0017 (71) P= .989
STMIN	.1678 (60) P= .200	.0914 (60) P= .487	.1306 (60) P= .320	-.0038 (59) P= .977	.5051 (71) P= .000	-.2420 (71) P= .042

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:50 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
INACTN	.1936	-.0524	.2702	-.0127	.5290	.0501
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .138	P= .691	P= .037	P= .924	P= .000	P= .678
TEAM	.2578	-.0583	.3840	-.0507	.4532	.1505
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .047	P= .658	P= .002	P= .703	P= .000	P= .210
SLFREW	.2339	.0153	.1348	-.0669	.5107	.0297
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .072	P= .908	P= .305	P= .615	P= .000	P= .806
OPTHT	.2603	-.0716	.3419	.1245	.4078	.1803
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .045	P= .587	P= .008	P= .347	P= .000	P= .132
INDACT	.2498	.1180	.1275	-.0590	.2872	.2678
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .054	P= .369	P= .332	P= .657	P= .015	P= .024
EFFIC	-.0612	.0197	-.1368	.0833	.0403	.2325
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .642	P= .881	P= .297	P= .530	P= .739	P= .051
TEAMWK	.1823	-.1656	.2497	-.0495	.3177	.1994
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .163	P= .206	P= .054	P= .710	P= .007	P= .096
SFREW	.0724	.0258	-.0880	-.1952	.2152	-.0837
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .583	P= .845	P= .504	P= .139	P= .072	P= .488
SFGL	.1536	.0231	-.0140	.2073	.2913	.0998
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .241	P= .861	P= .916	P= .115	P= .014	P= .407
NREW	.0428	.0135	-.1653	-.1754	.1515	.0040
	(60)	(60)	(60)	(59)	(71)	(71)
	P= .745	P= .918	P= .207	P= .184	P= .207	P= .974
OPPTHT	.0759	-.0011	.0088	.1938	.3199	.3012
	(61)	(61)	(61)	(60)	(71)	(71)
	P= .561	P= .993	P= .946	P= .138	P= .007	P= .011

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
SOBS	.0062 (60) P= .963	.0335 (60) P= .799	.0950 (60) P= .470	.1929 (59) P= .143	-.0668 (71) P= .580	-.2962 (71) P= .012
INTSUP	.1816 (60) P= .165	.0530 (60) P= .688	.1234 (60) P= .347	-.1239 (59) P= .350	.0336 (71) P= .781	.0323 (71) P= .789
CTSY	.0886 (60) P= .501	.0572 (60) P= .664	.1660 (60) P= .205	-.1383 (59) P= .296	-.0194 (71) P= .873	.0817 (71) P= .498
CVHWS	-.0136 (60) P= .918	-.0943 (60) P= .473	-.0015 (60) P= .991	-.1249 (59) P= .346	.1851 (71) P= .122	.0857 (71) P= .477
UNREL	.0675 (60) P= .608	.1551 (60) P= .237	.0949 (60) P= .471	-.0152 (59) P= .909	-.0900 (71) P= .456	-.1802 (71) P= .133
COMP	-.1108 (60) P= .399	.0869 (60) P= .509	-.1626 (60) P= .214	-.0470 (59) P= .724	-.1510 (71) P= .209	-.0637 (71) P= .598
TOTEFF	.5276 (61) P= .000	.5490 (61) P= .000	.4864 (61) P= .000	-.0393 (57) P= .772	.0282 (68) P= .820	-.0877 (68) P= .477
OUTPUT	.2677 (61) P= .037	.3739 (61) P= .003	.5322 (61) P= .000	.0849 (57) P= .530	.1306 (68) P= .288	-.0823 (68) P= .504
INTEFF	.6449 (61) P= .000	.4448 (61) P= .000	.3295 (61) P= .010	-.0001 (57) P= .999	-.1193 (68) P= .333	-.1162 (68) P= .345
CHNGEFF	.3237 (61) P= .011	.5375 (61) P= .000	.3031 (61) P= .018	-.1475 (57) P= .273	.0638 (68) P= .605	.0077 (68) P= .950
ORGPLN	.1928 (61) P= .137	.2335 (61) P= .070	.3155 (61) P= .013	-.1142 (57) P= .398	.1657 (68) P= .177	.0450 (68) P= .716

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES VM/SP CMS
10:21:51 The University of Maryland CSC IBM 3081GX

- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
SLFPERF	-.1206 (27) P= .549	.2299 (27) P= .249	-.3026 (27) P= .125	.5512 (23) P= .006	-.0478 (29) P= .806	.1191 (29) P= .538
SUBPERF	.0543 (60) P= .680	.0408 (60) P= .757	.1618 (60) P= .217	-.0811 (59) P= .541	.7583 (71) P= .000	.1256 (71) P= .297
DESIRE	-.0608 (60) P= .644	.0969 (60) P= .461	-.1490 (60) P= .256	-.0845 (59) P= .525	-.1823 (71) P= .128	.3410 (71) P= .004
XAVRS	-.2753 (59) P= .035	-.1764 (59) P= .181	-.1026 (59) P= .440	.2302 (58) P= .082	-.5872 (71) P= .000	-.1402 (71) P= .243
XASGL	-.0376 (59) P= .777	-.0621 (59) P= .640	-.0512 (59) P= .700	-.2380 (58) P= .072	.0764 (71) P= .526	-.1003 (71) P= .405
XINCOM	-.2234 (59) P= .089	-.2268 (59) P= .084	-.0756 (59) P= .569	-.1446 (58) P= .279	.1748 (71) P= .145	.0029 (71) P= .981
XPARGL	.1354 (59) P= .307	-.0409 (59) P= .758	.0573 (59) P= .666	-.1636 (58) P= .220	.5686 (71) P= .000	.0028 (71) P= .982
XMREW	.2145 (59) P= .103	.1321 (59) P= .319	.0688 (59) P= .605	-.1127 (58) P= .400	.4960 (71) P= .000	.2662 (71) P= .025
XPREW	.2065 (59) P= .117	.1151 (59) P= .385	-.0661 (59) P= .619	-.1057 (58) P= .430	.6753 (71) P= .000	-.0135 (71) P= .911
XREPMD	-.2326 (59) P= .076	-.2733 (59) P= .036	-.0424 (59) P= .750	.1304 (58) P= .329	.1368 (71) P= .255	.0890 (71) P= .461
XSTAQUO	-.0137 (59) P= .918	-.0808 (59) P= .543	-.0366 (59) P= .783	.1855 (58) P= .163	.4675 (71) P= .000	.1791 (71) P= .135

(Coefficient / (Cases) / 2-tailed sig)

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES [redacted]
10:21:51 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
XVIS	.1233	-.1102	.0357	.0125	.6861	.1238
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .352	P= .406	P= .788	P= .926	P= .000	P= .304
XIDELSM	.0687	-.0136	.0546	.0352	.6407	.1055
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .605	P= .919	P= .681	P= .793	P= .000	P= .381
XSTMIN	.2307	-.0234	.2334	-.1584	.6562	-.1358
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .079	P= .860	P= .075	P= .235	P= .000	P= .259
XINACTN	.2606	-.0571	.2733	-.0647	.5617	.0225
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .046	P= .668	P= .036	P= .629	P= .000	P= .852
XTEAM	.3537	.0853	.2431	.0322	.4643	.1449
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .006	P= .520	P= .064	P= .811	P= .000	P= .228
XSLFREW	.2352	-.0679	.0002	-.2016	.5162	-.0326
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .073	P= .610	P= .999	P= .129	P= .000	P= .787
XOPTHT	.2177	-.1108	.2436	-.0856	.6440	.0748
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .098	P= .404	P= .063	P= .523	P= .000	P= .535
XINDACT	.1246	.2673	.2175	.0775	.2647	.2731
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .347	P= .041	P= .098	P= .563	P= .026	P= .021
XEFFIC	-.1371	.0795	-.0562	.0871	.2066	.2029
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .300	P= .549	P= .673	P= .516	P= .084	P= .090
XTEAMWK	.1923	.1709	.2543	.1336	.1765	.2885
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .145	P= .196	P= .052	P= .317	P= .141	P= .015
XSFREW	-.0205	.0567	-.2219	.1649	.0562	-.1933
	(59)	(59)	(59)	(58)	(71)	(71)
	P= .877	P= .670	P= .091	P= .216	P= .642	P= .106

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
XSFGL	.1575 (59) P= .234	.1886 (59) P= .153	.1722 (59) P= .192	-.2327 (58) P= .079	.0524 (71) P= .664	.1967 (71) P= .100
XNREH	.1586 (59) P= .230	.3164 (59) P= .015	-.0289 (59) P= .828	.1725 (58) P= .195	.0034 (71) P= .978	-.1096 (71) P= .363
XOPPINT	-.1012 (61) P= .438	.1778 (61) P= .170	.0213 (61) P= .870	.0186 (60) P= .888	.2772 (71) P= .019	.1942 (71) P= .105
XSOBS	.0730 (59) P= .583	.2804 (59) P= .031	.0930 (59) P= .483	.1536 (58) P= .250	.0481 (71) P= .691	-.1236 (71) P= .305
XINTSUP	.1461 (59) P= .269	.0901 (59) P= .497	.2283 (59) P= .082	-.0999 (58) P= .456	.2421 (71) P= .042	.0664 (71) P= .582
XCTSY	.0303 (59) P= .820	-.0671 (59) P= .613	.1478 (59) P= .264	-.1957 (58) P= .141	.2682 (71) P= .024	.1552 (71) P= .196
XCVNMS	-.0207 (59) P= .876	-.0787 (59) P= .554	-.0932 (59) P= .483	-.0327 (58) P= .808	.1872 (71) P= .118	.0335 (71) P= .781
XUNREL	.0092 (59) P= .945	.0372 (59) P= .780	-.1458 (59) P= .271	.1027 (58) P= .443	-.1646 (71) P= .170	-.3769 (71) P= .001
XCOMP	-.0820 (59) P= .537	.0557 (59) P= .675	-.1031 (59) P= .437	.1565 (58) P= .241	-.5271 (71) P= .005	-.1297 (71) P= .281
XTOTEFF	.7763 (61) P= .000	.8282 (61) P= .000	.5211 (61) P= .000	.0968 (51) P= .499	.1376 (59) P= .299	-.1526 (59) P= .249
XOUTPUT	.3221 (61) P= .011	.5892 (61) P= .000	.3814 (61) P= .002	.1128 (51) P= .430	.1572 (59) P= .234	-.1473 (59) P= .266

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

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19-Jul-93 ALL GP LVL TIME 1 AND TIME 2 VARIABLES
10:21:51 The University of Maryland CSC IBM 3081GX VM/SP CMS

- - Correlation Coefficients - -

	XINTEFF	XCHNGEFF	XORGPLN	XSLFPERF	XSUBPERF	XDESIRE
XINTEFF	1.0000 (61) P= .	.5217 (61) P= .000	.2334 (61) P= .070	.1330 (51) P= .352	.1131 (59) P= .394	-.1298 (59) P= .327
XCHNGEFF	.5217 (61) P= .000	1.0000 (61) P= .	.2801 (61) P= .029	.0678 (51) P= .636	.0422 (59) P= .751	-.1428 (59) P= .281
XORGPLN	.2334 (61) P= .070	.2801 (61) P= .029	1.0000 (61) P= .	-.1450 (51) P= .310	.1116 (59) P= .400	.0126 (59) P= .925
XSLFPERF	.1330 (51) P= .352	.0678 (51) P= .636	-.1450 (51) P= .310	1.0000 (60) P= .	-.1187 (58) P= .375	.0135 (58) P= .920
XSUBPERF	.1131 (59) P= .394	.0422 (59) P= .751	.1116 (59) P= .400	-.1187 (58) P= .375	1.0000 (71) P= .	.0849 (71) P= .482
XDESIRE	-.1298 (59) P= .327	-.1428 (59) P= .281	.0126 (59) P= .925	.0135 (58) P= .920	.0849 (71) P= .482	1.0000 (71) P= .

(Coefficient / (Cases) / 2-tailed sig)

" . " is printed if a coefficient cannot be computed

Appendix 6-1

Post-Hoc Interview Protocol

Interview Protocol

Introduction

- Purpose of the Interview: To add meaning to the results of formal data analysis by getting participant reactions to the training in their own words. At this point, we are only in the exploratory phase of data analysis; we hope to have a brief report for the participants and the subordinates in about six weeks. This will probably take the form of a letter.

- How you were Selected: I selected you more-or-less randomly. I limited my sample only to people who had actually received training (no control group interviews) and chose people who had a fair number of subordinates who filled out questionnaires. (Mention rapport.)

- Assurance of confidentiality: I am only the evaluator of the training and at this point am working independently of Hank. I am not using recording devices; I am only taking notes. Your identity will never be revealed to your organization or to Hank. Because of that, I ask that you speak freely with me.

The Training Itself

These questions ask you specifically about the training itself. In a few minutes, I'll ask you about issues related to implementing the training.

- (A1) As you think back to the training, what did you get out of the program that you thought was helpful?

- (A2) Related to the previous question, what were the major things you learned during the training? What messages did you receive from the training?

- (A3) Thinking back to your reactions during the training, were there any changes you wanted to make as you got near the end of the training program?

- (A4) In retrospect, would you recommend any changes to the training based on the R.I.F.?

Implementing What you Learned

- (B1) Was there difficulty translating material from the training program in ways that applied to your job? If so, can you describe the problems?

- (B2) What did you do as a result of the training? How did it work out? Has the RIF made it easier or harder?

- (B3) Do you think your boss saw any changes as a result of the training? How do you feel about top management support for the training?

- (B4) What did you say to your subordinates about the training program? Did you say anything to them about it? Did you discuss it with them? What do you think your subordinates would say about your behavior after the training?

Summary

- How would you feel if I talked to some of your subordinates? (I'm not sure that I will actually do this, but I wanted to ask you just in case.)

- In summary, What do you think we ought to do in terms of trying to make the training more on-target for the next time around? What was missing, what should we emphasize?

Appendix 6-2

Nine Keys to SuperLeadership

NINE KEYS TO SUPERLEADERSHIP

<u>Overall Strategies</u>

Encourage Initiative

Encourage Self-Problem Solving

Encourage Teamwork

<u>Behavior-Focused Strategies</u>

Encourage Self-Goal Setting

Encourage Self-Observation/Evaluation

Encourage Self-Reward

<u>Cognitive-Focused Strategies</u>

Encourage Opportunity Thinking

Encourage Finding Natural Rewards from the Work Itself

Enhance Self-Efficacy

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