The Relationship between Self-Leadership and Personality: A Comparison of Hierarchical Factor Structures

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(ABSTRACT)

This study examined the relationship between self-leadership and personality through an analysis and comparison of hierarchical factor structures. More specifically, this study examined the relationships between the self-leadership dimensions of behavior-focused strategies, natural reward strategies, and constructive thought strategies, and the personality dimensions of extraversion, emotional stability, and conscientiousness. The results of the study provide evidence that the self-leadership dimensions are distinct from, yet related to, the specified personality traits.

The hypothesis that self-leadership strategies are distinct from the selected personality traits was supported through structural equations modeling analyses examining competing models combining the hierarchical factor structures of self-leadership and personality. Model fit increased significantly through a progression of models that showed increasingly greater distinction between self-leadership dimensions and personality traits. The best fitting model in the progression, in harmony with both self-leadership and trait personality theory, consisted of a hierarchical factor structure with three first order self-leadership factors, three first order personality factors, and two correlated second order factors (i.e., self-leadership and personality). Furthermore, intercorrelations were greater within the self-leadership dimensions than between the self-leadership dimensions and the personality traits, thus providing additional evidence of differentiation.

Although the evidence indicates that self-leadership skill dimensions are unique with respect to personality traits, these results also suggest that self-leadership and personality factors are nevertheless significantly related. Specifically, both extraversion and conscientiousness were significantly related to all three self-leadership dimensions, while emotional stability was significantly related only to the natural rewards strategies dimension. In summation, the results of this study suggest that self-leadership represents a distinct constellation of strategies that are significantly related to certain key personality traits. The implications of these results for future self-leadership research and practice are discussed.

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Chapter 1: Introduction

SELF-LEADERSHIP: POPULAR APPEAL, IMPRESSIVE POTENTIAL

Self-leadership is a term used to describe a comprehensive theory of self-influence that has recently demonstrated substantial popularity and impressive potential for application in modern organizations. Simply stated, self-leadership (Manz, 1986, 1992a; Manz & Neck, 1999) is a process through which people influence themselves to achieve the self-direction and self-motivation necessary to behave and perform in desirable ways. This process of self-influence is facilitated through the use of both behavioral and cognitive strategies. Self-leadership strategies may be divided into three primary categories: behavior-focused strategies, natural reward strategies, and constructive thought pattern strategies (Anderson & Prussia, 1997; Manz, 1992b; Manz & Neck, 1999; Prussia, Anderson, & Manz, 1998). Behavior-focused strategies involve the self-regulation of behavior through the use of self-assessment, self-reward, and self-discipline. These strategies are designed to foster positive, desirable behaviors while discouraging ineffective behaviors. Behavior-focused strategies are particularly useful in managing behavior related to the accomplishment of necessary but unpleasant tasks. Natural reward strategies involve seeking out work activities that are inherently enjoyable. This set of strategies can also include the focusing of attention on the more pleasant or gratifying aspects of a given job or task rather than on the unpleasant or difficult aspects. Finally, constructive thought pattern strategies involve the creation and maintenance of functional patterns of habitual thinking. Specific thought-oriented strategies include the evaluation and challenging of irrational beliefs and assumptions, mental imagery of successful future performance, and positive self-talk. Taken together, these strategies represent an impressive package of self-influence tools that have great potential for application in today's rapidly changing business organizations.

Over the past decade, self-leadership concepts have become relatively popular among management practitioners as evidenced by the sizeable number of practitioner oriented articles addressing the subject (e.g., Blanchard, 1995; Buhler, 1998; Cashman, 1995; DiMattis, 1990; Manz, 1990a, 1991, 1994; Manz & Neck, 1991; Segil, 1999; Smith, 1993; Strauss, 1989; Whitmore & Nienstedt, 1991). Likewise, several well-received books have focused on the topic of self-leadership (e.g., Manz, 1983, 1992a; Manz & Neck, 1999; Manz & Sims, 1989, 1994; Sims & Manz, 1996; Waitley, 1995). Such works have largely been welcomed in the practitioner press with warm and supportive book reviews (e.g., Cox, 1995; Grattan, 1998; Grund, 1996; Holtzman, 1994; Shelton, 1996; Standke, 1995). Furthermore, self-leadership principles have appeared in a variety of popular edited books on management and leadership (e.g., Dansereau & Yammarino, 1998; Hasselbein, Goldsmith, & Beckhard, 1996; Pierce & Newstrom, 1988) as well as in a number of management textbooks (e.g., Ivancevich & Matteson, 1999; Kreitner & Kinicki, 1998; McShane & Von Glinow, 2000; Nahavandi & Malekzadeh, 1999). Finally, self-leadership concepts have been embraced by corporate leaders in the form of training programs designed to increase self-leadership skills and behaviors (see Cox, 1993; Neck

& Manz, 1996b; Stewart, Carson, & Cardy, 1996; for descriptions of various self-leadership training programs).

Given the popularity of self-leadership concepts and the recent emphasis on employee empowerment (e.g., Conger & Kanungo, 1988; Thomas & Velthouse, 1990) and self-managing work teams (e.g., Cohen & Ledford, 1994; Hackman, 1986), self-leadership appears to have impressive potential for application in today's dynamic organizations. Indeed, self-leadership has often been presented as a primary mechanism in both empowerment (e.g., Anderson & Prussia, 1997; Manz, 1992b; Prussia, Anderson, & Manz, 1998; Shipper & Manz, 1992) and the successful implementation of self-managing work teams (e.g., Manz, 1990b; Neck, Stewart, & Manz, 1996; Manz & Sims, 1987; Manz & Sims, 1986). Employee empowerment and the move toward self-managing teams are representative of a larger shift in organizational dynamics. Driven by technology and global competition, many companies are moving toward more organic and decentralized organizational forms. This decentralization of organizational power is creating unprecedented opportunities for organizational members at all levels to take greater responsibility for their own job tasks and work behaviors (Shipper & Manz, 1992). Because this trend is likely to continue into the 21st century, organizational executives may find an increasing need to depend on individual employee self-leadership than on traditional, external forms of leadership (Manz, 1992b).

For instance, even a traditional, bureaucratic organization such as the U.S. Army is likely to face unprecedented challenges from rapidly changing and uncertain environments characterized by the complex high tech systems and information networks of the 21st century. As outlined by Shamir and Ben-Ari (1999), the armed forces of the major industrialized nations are facing significant changes in tasks, environment, and force composition. At the heart of these challenges lies the issue of the effective leadership. Recently, Neck and Manz (1999) have argued that self-leadership practices hold great potential for the 21st century army. They suggest that self-leadership strategies may be useful for enhancing soldiers' confidence in their abilities to independently perform specific tasks (i.e., increased self-efficacy perceptions) leading to higher performance levels (cf. Prussia, Anderson, & Manz, 1998; Sims & Manz, 1996). Furthermore, effective self-leaders are likely to be less resistant to organizational change (Neck, 1996), an important point given the vast amount of changes anticipated by many organizations in the near future. In short, it appears that self-leadership strategies have great potential for facilitating the transition to the new organizational forms characterized by participative management, employee empowerment, and self-managing teams. As organizations continue to reshape and adopt structures that require a greater reliance on individual initiative, the popularity of self-leadership concepts is likely to remain strong.

SELF-LEADERSHIP: PROBLEMS AND CHALLENGES

Despite the popularity and potential of self-leadership strategies, a number of significant problems and challenges need to be addressed. Although self-leadership theory has a strong intuitive appeal, and while anecdotal evidence of the positive effects of self-leadership is common, very little empirical research has examined self-leadership theory and its application in organizational settings (Anderson & Prussia, 1997). Furthermore, self-leadership theory has

been criticized as being conceptually indistinct from and redundant with classic theories of motivation. Additionally, although self-leadership is conceptualized in the literature as learned behavior (Manz, 1986, 1992a), some theorists (e.g., Guzzo, 1998; Markham & Markham, 1995, 1998) have asserted that self-leadership is a mere repackaging of individual differences already explained by pre-existing and relatively stable personality constructs. Finally, despite encouraging recent efforts, no valid scale of self-leadership has heretofore been developed. The lack of a proven scale for the assessment of self-leadership skills makes it difficult to advance empirical self-leadership research. This is why Markham and Markham (1995, 1998), in offering an agenda for future self-leadership research, call for the construction and validation of self-leadership scales that are unique with respect to personality and motivational constructs.

RATIONALE FOR THE STUDY

The purpose of the present study is to advance self-leadership theory through an empirical inquiry designed to investigate the extent to which self-leadership represents a unique and valuable constellation of behavioral and cognitive strategies. More specifically, this research examines a primary area of concern by assessing the relationship between self-leadership and various personality traits. Thus, the principal research question in the current study concerns the extent to which self-leadership factors are distinct from personality factors and the precise nature of the relationships between these factors. In addition, as a necessary precursor to the current study, a psychometrically acceptable scale for the measurement of self-leadership skills was further developed and validated. Such a scale has the potential to be pivotal in advancing empirical self-leadership research.

SIGNIFICANCE OF THE STUDY

This study contributes to the self-leadership literature in several important ways. Most notably, this investigation may help to establish a stronger basis for future empirical research in the self-leadership domain. Demonstrating a distinction between self-leadership dimensions and similar dimensions of motivation and personality constitutes an important step in moving self-leadership beyond the popular practitioner literature toward a more academically respected theory of self-influence. Further, to the extent that self-leadership dimensions can be reliably measured with scales that are unique relative to scales measuring personality and other motivational dimensions, self-leadership theory will be further validated and future empirical research may advance with a sturdier foundation. The current research addresses these issues through an in-depth analysis of self-leadership in relationship to certain key personality traits.

Finally, despite concerns regarding the distinctness of self-leadership relative to personality, virtually no previous empirical research has examined this issue. Thus, this study makes a novel contribution to the literature by being the first to empirically examine the relationships between self-leadership dimensions and selected personality traits. A better understanding of the nature of these relationships may play an important role in influencing and shaping the future development of self-leadership theory.

SUMMARY

This chapter has served to introduce the concept of self-leadership and the problem to be addressed by this research. After reviewing the popularity and potential of self-leadership in today's rapidly changing organizational environment, some problems and challenges were discussed. In particular, it was noted that self-leadership has been criticized as being indistinct from certain personality and motivational concepts. The pressing need for a thorough examination of the distinctness of self-leadership with respect to personality was then presented as the rationale for the current study. Finally, the significance of the research was reviewed. In brief, it was argued that this study has the potential to make a valuable contribution to the literature by determining the extent to which self-leadership dimensions are distinct and measurable. Such knowledge may help to shape future empirical research in the self-leadership domain.

Chapter Two will provide a review the self-leadership and personality literatures, before elaborating on the purposes of the current research and developing research hypotheses. Chapter Three will present the proposed methodologies to be employed in testing these hypotheses. It will include a description of the subjects, the measurement instruments, the procedures, and the analytical techniques to be used in the study. Chapter Four will present the results of the study relative to the study hypotheses and research question. Finally, Chapter Five will provide an interpretation and explanation of the findings. Contributions and limitations of the study will also be discussed along with suggestions for future self-leadership research efforts.

Chapter 2: Literature Review

This chapter will present detailed reviews of self-leadership literature theory and the "Big Five" model of personality. These reviews will serve as a foundation for a discussion of the purposes of the current study and for the development and presentation of resulting research hypotheses.

SELF-LEADERSHIP THEORY

In this section, a comprehensive review of self-leadership theory and research will be presented. The concept of self-leadership will be defined and its basic premises outlined. A discussion of the theoretical foundations of self-leadership theory will follow. Finally, issues relating to the measurement of self-leadership behaviors will be discussed.

Self-Leadership: Definition and Overview

Self-leadership has been defined as a process through which people influence themselves to achieve the self-direction and self-motivation needed to perform (Manz, 1983, 1986, 1992a; Manz & Neck, 1999). Self-leadership involves both behavioral and cognitive strategies that are

hypothesized to positively influence subsequent outcomes. These strategies may be divided into three general categories: behavior-focused strategies, natural reward strategies, and constructive thought pattern strategies (Anderson & Prussia, 1997; Manz & Neck, 1999; Prussia, Anderson, & Manz, 1998).

Behavior-focused strategies are aimed at increasing self-awareness, leading to the management of behaviors involving necessary but perhaps unpleasant tasks (Manz, 1992a; Manz & Neck, 1999). These strategies include self-observation, self-goal setting, self-reward, self-punishment, and practice. Self-observation involves an examination of one's own behavior aimed at increasing awareness of when and why one engages in certain behaviors. This type of self-assessment can lead to the identification of behaviors that should be changed, enhanced, or eliminated (Mahoney & Arnkoff, 1978, 1979; Manz & Sims, 1980; Manz & Neck, 1999). Based on this foundation of self-assessment, the individual can become more effective in setting personal goals that may lead to improved performance (Manz, 1986; Manz & Neck, 1999; Manz & Sims, 1980). In addition, self-rewards can be used to reinforce desirable behaviors and goal attainments (Mahoney & Arnkoff, 1978, 1979; Manz & Sims, 1980; Manz & Neck, 1999). Like self-rewards, self-punishment can also be used to effectively shape desired behaviors, particularly when used sparingly and reserved for seriously negative behaviors (Manz, 1992b). Finally, the rehearsal or practice of desired behaviors before actual performance can allow for the correction of problems and the avoidance of costly miscues (Manz, 1992b; Manz & Neck, 1999; Manz & Sims, 1980; Thorensen & Mahoney, 1974). In short, behavior-focused self-leadership strategies are designed to encourage positive, desirable behaviors that lead to successful outcomes, while suppressing negative, undesirable behaviors that lead to unsuccessful outcomes.

Natural reward strategies focus on the positive aspects of a given task or activity. Natural or intrinsic rewards result when incentives are built into the task itself (Manz, 1992a; Manz & Neck, 1999). In other words, a person is intrinsically motivated or naturally rewarded when he/she engages in a task or activity primarily for its own sake. Naturally rewarding activities tend to foster feelings of increased competence, self-control, and purpose (Manz, 1986, Manz & Neck, 1999). Natural reward strategies include efforts toward building more pleasant and enjoyable features into a given task or activity so that value is obtained from the task itself and the job becomes naturally rewarding (Manz & Sims, 1986). Alternately, an individual could change his/her perceptions of an activity by focusing on the task's inherently rewarding aspects (Manz & Neck, 1999). Through natural reward strategies such as these, an individual can increase performance levels by focusing on the pleasant aspects of work.

Constructive thought pattern strategies deal with the creation and alteration of cognitive thought processes. Specifically, this set of strategies suggests three primary ways in which thinking patterns may be altered: self-analysis and improvement of belief systems, mental imagery of successful performance outcomes, and positive self-talk (Manz, 1992a; Manz & Neck, 1999). Constructive thought pattern strategies have been refined and more fully developed under the rubric of "thought self-leadership" (Manz & Neck, 1991; Neck & Manz, 1992, 1996b; Neck & Milliman, 1994; Neck, Stewart, & Manz, 1995). Thought self-leadership suggests that individuals can influence and control their own thoughts through the use of specific cognitive strategies designed to facilitate the formation of constructive thought patterns or

habitual ways of thinking that can positively impact performance (Neck & Manz, 1992). A more detailed discussion of thought self-leadership and its strategies follows.

Many individual performance problems result from dysfunctional thinking (Burns, 1980; Ellis, 1977). These distorted thoughts generally result from underlying dysfunctional *beliefs and assumptions* that are often triggered by stressful or troubling situations. Thought self-leadership suggests that through a process of self-analysis, one's dysfunctional beliefs and assumptions can be identified, confronted, and replaced with more rational ones (Burns, 1980; Ellis, 1977; Manz & Neck, 1999; Neck & Manz, 1992).

Self-talk or self-dialogue may be defined as what we covertly tell ourselves (Ellis, 1962; Neck & Manz, 1992). These self-dialogues usually take place at unobservable levels as individuals evaluate, instruct, and react to themselves mentally (Ellis, 1962, 1977; Manz & Neck, 1991; Neck & Manz, 1992). Through the effective utilization of self-talk strategies, an individual can learn to suppress and discourage negative and pessimistic self-talk while fostering and encouraging optimistic self-dialogues (Seligman, 1991). By replacing negative and dysfunctional self-talk patterns with more constructive internal dialogues, performance may be enhanced (Manz & Neck, 1999).

Mental imagery, the final thought self-leadership cognitive strategy, involves imagined experiences. Through the use of mental imagery it is possible to create and symbolically experience behavioral outcomes prior to actual performance (Manz & Neck, 1991; Neck & Manz, 1992). This technique has also been variously referred to as imaginary practice (Perry, 1939), covert rehearsal (Corbin, 1967), symbolic rehearsal (Sackett, 1934), and mental practice (Corbin, 1972; Richardson, 1967a, 1967b). Mental imagery is generally defined as the symbolic, covert, mental invention or rehearsal of an experience or task in the absence of actual, overt physical muscular movement (cf. Driskell, Copper, & Moran, 1994; Finke, 1989; Richardson, 1967a). Those individuals who envision the successful performance of a task or activity beforehand are much more likely to perform successfully when faced with the actual situation (Manz & Neck, 1999). Empirical evidence supports such a proposition. A recent meta-analysis of 35 empirical studies (Driskell et al., 1994), found that mental practice does indeed have a positive and significant effect on performance outcomes. Finally, the notion of mental imagery resembles Weick's (1979) concept of "future perfect thinking." Briefly, Weick (1979) suggested that if a future event were viewed as having already occurred, then the event could be more easily analyzed in the present.

Thought self-leadership proposes that an individual's beliefs, self-talk, and mental imagery combine to impact the individual's *thought patterns*. Thought patterns have been described as habitual ways of thinking (Manz & Neck, 1999; Neck & Manz, 1992). Individuals often adopt one of two opposing thought patterns: opportunity thinking or obstacle thinking (Manz & Neck, 1999; Neck & Manz, 1992). Opportunity thinking involves habitually thinking in terms of worthwhile challenges, opportunities, and constructive approaches to difficult or unpleasant situations. Obstacle thinking, in contrast, focuses on reasons to give up and retreat from problems and difficulties. Opportunity thinkers tend to be more active in dealing with challenges and difficulties, exerting greater effort and persistence toward overcoming the

problem at hand. Obstacle thinkers, conversely, tend to become discouraged when challenged, focusing on the negative aspects of the situation (Manz, 1986; Seligman, 1991).

Thought self-leadership's conceptualization of opportunity and obstacle thinking patterns is based on a considerable amount of empirical research on the related concepts of optimism/pessimism and learned helplessness (for a historical overview, see Seligman 1991). More specifically, research has shown that optimism is positively related to physical health, mental health, and the ability to cope with stressful situations (e.g., Scheier & Carver, 1985,1992; Scheier, Carver, & Bridges, 1994; Scheier, Weintraub, & Carver, 1986; Segerstrom, Taylor, Kemeny, & Fahey, 1998). Indeed, Scheier and Carver (1992) assert that beyond simply making people feel good, an optimistic perspective "also confers benefits on what people do and what people are able to achieve in times of adversity" (p.202). In short, based on empirical evidence such as this, thought self-leadership suggests that if an individual's thought patterns are optimistic, constructive, and opportunity-focused rather than pessimistic, dysfunctional, and obstacle-focused, then subsequent performance levels may be improved.

Finally, according to thought self-leadership theory, psychological scripts moderate the relationship between thought patterns and performance. Psychological scripts dictate certain stereotyped sequences of behavior for specific situations (Gioia & Manz, 1985; Neck & Manz, 1992). Thinking alone may not be enough to change deep-rooted behaviors that affect performance outcomes. Entire sequences of stereotyped behaviors, as dictated by firmly entrenched scripts, may need to be assessed and changed in order to effectively change performance (Neck & Manz, 1992). In summary, thought self-leadership suggests a model of self-influence in which beliefs and assumptions, self-talk, and mental imagery influence one another in determining an individual's thinking patterns. Thinking patterns, as moderated by psychological scripts, have a direct impact on performance.

Generally, the utility of thought self-leadership strategies has been supported in literature spanning multiple disciplines. Specifically, the effects of self-talk and mental imagery on performance have been empirically supported in sports psychology (e.g., Andre & Means, 1986; Clark, 1960; Feltz & Landers, 1983; Kendall, Hrycaiko, Martin, & Kendall, 1990; Lee, 1990; Mahoney & Avener, 1977; Meyers, Cooke, Cullen, & Liles, 1979; Ryan & Simons, 1981; Wrisberg & Anshel, 1989; Zecker, 1982; Ziegler, 1987), clinical psychology (Bonadies & Bass, 1984; Crowder, 1989; Harrell, Chambless, & Calhoun, 1981; Meichenbaum & Goodman, 1971; Rosin & Nelson, 1983; Schill, Monroes, Evans, & Ramanaiah, 1978; Steffy, Meichenbaum, & Best, 1970; Turner, Kohl, & Morris, 1982; Velten, 1968), counseling psychology (Baker, Johnson, Kopala, & Strout, 1985), and communication (Boice, 1985). In addition, clinical psychologists have described processes through which an individual's beliefs and assumptions can result in a variety of cognitive distortions often leading to depression (Beck, Rush, Shaw, & Emery, 1979; Burns, 1980, Ellis, 1975).

To summarize, self-leadership theory posits that the use of the behavioral and cognitive strategies described above will have a positive influence on performance outcomes. Many of the self-leadership strategies are rooted in other existing theories of motivation and self-influence. In the following section, the theoretical underpinnings of self-leadership theory will be

examined. In short, self-leadership theory will be compared, contrasted, and distinguished from the concepts and theories that provide its theoretical basis.

Self-Leadership: Theoretical Foundations

As outlined above, self-leadership theory is comprised of a broad set of strategies that may be useful in leading oneself to greater personal effectiveness. Many of these self-leadership strategies are founded upon established theories of motivation and self-influence. In this section, the similarities and distinctions between self-leadership theory and the underlying theories of motivation and self-influence will be discussed. Specifically, self-leadership will be distinguished from theories of self-regulation, self-control, and self-management and contrasted with social cognitive theory and intrinsic motivation.

Self-leadership theory is deeply rooted in the related theories of self-regulation, self-control, and self-management. Self-regulation (e.g., Kanfer, 1970) can be viewed as a process of reducing variation from a set standard (Neck & Manz, 1996a). The self-regulation process is comparable to the operation of a mechanical thermostat. The thermostat senses temperature variations relative to a given standard and signals appropriate action to reduce the discrepancy. According to self-regulation theory, discrepancy reduction is facilitated by three basic activities: self-observation, self-evaluation, and self-reaction (Kanfer & Ackerman, 1989). Self-observation involves an allocation of attention to the examination of one's own behaviors. Self-evaluation involves comparing one's behaviors to a set standard or desired state. Finally, if discrepancy is present, then self-reaction is likely to take the form of a drive toward discrepancy reduction.

The basic concepts of self-regulation are most clearly specified by control theory (e.g., Carver & Scheier, 1981). Drawing from literature in the field of cybernetics and based on linkages suggested by Powers (1973), Carver & Scheier (1981) have presented a comprehensive control system model of the self-regulatory process. According to this model, a sensor monitoring performance in the environment yields a signal that is compared to a set standard or desired state. If discrepancy or error exists, then a decision is made concerning whether the discrepancy will be reduced via a cognitive change or via a behavioral change. A cognitive change involves a downward adjustment of the standard to meet the level of performance. A behavioral change involves an adjustment of effort through some effector (i.e., response mechanism). In either case, the objective is the reduction of the discrepancy between the actual performance level and the standard or goal. In summation, control theory suggests that through a process of self-evaluation, performance levels are compared to a set standard or goal. Discrepancy is subsequently reduced through behavioral or cognitive responses.

In self-regulation theory, standards are simply assumed to exist and little attention is paid to how standards are determined. In an organizational setting, self-regulatory standards are based primarily on existing organizational standards and objectives. As long as organizational policies, rules, and procedures are followed, deviation reduction will occur. Thus, in the short run, the process of deviation reduction becomes relatively automatic and self-perpetuating (Neck & Manz, 1996a). Given a continuum ranging from complete external influence to complete

internal influence (cf., Manz, 1990b; Neck & Manz, 1996a), self-regulation falls closer to the complete external influence end of the spectrum (See Figure 1). In other words, due to its largely automatic and unconscious responses to external demands, self-regulation can be viewed as a weaker form of self-influence than either self-management or self-leadership.

Complete	Self-Regulation	Self-Management	Self-Leadership	Complete
External Influence				Internal Influence
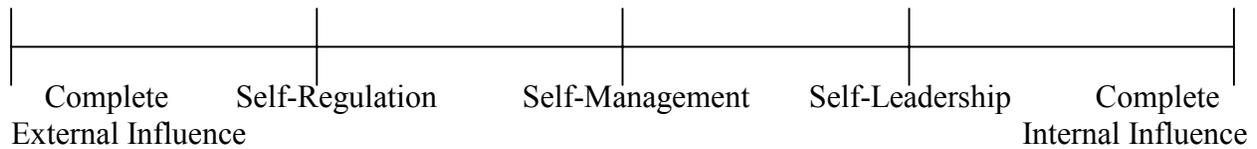
Figure 1. **A continuum of self-influence.**

Self-management theory (e.g., Andrasik & Heimberg, 1982; Luthans & Davis, 1979; Manz & Sims, 1980) moves beyond theories of self-regulation by providing specific strategies for managing one's own behaviors in an effort to regulate discrepancy from set standards (Manz, 1986). Self-regulation provides no such prescriptions concerning *how* discrepancy should be reduced. Self-management is founded upon concepts of self-control originally developed in clinical psychology (e.g., Cautela, 1969; Mahoney & Arnkoff, 1978, 1979; Mahoney & Thoresen, 1974; Thoresen & Mahoney, 1974). Self-management has been described as a process through which an individual chooses an unattractive or low probability behavior from among a variety of short run behavioral alternatives (Mills, 1983; Manz, 1986; Manz & Sims, 1980; Thoresen & Mahoney, 1974). In other words, the individual chooses an immediately undesirable behavior that may be instrumental in gaining valued long-term outcomes. Thus, according to self-management, undesirable short-run behaviors are energized by a focus on desirable long-term consequences (Manz & Sims, 1980).

Several specific strategies of self-control have been presented in the clinical literature including self-observation, self-goal setting, cueing strategies, self-reinforcement, self-punishment, and rehearsal (Mahoney & Arnkoff, 1978, 1979). These strategies have been adapted to organizational settings and labeled self-management (Andrasik & Heimberg, 1982; Luthans & Davis, 1979; Manz & Sims, 1980). In addition, these same strategies of self-control and self-management form the basis for the behavior-focused self-leadership strategies discussed above (Manz, 1986; Manz & Neck, 1999).

To review, self-management consists of a set of strategies designed to help a person manage his or her own behaviors with respect to reducing discrepancies from immediate externally set standards. Self-management strategies do not, however, allow for assessment of the standards themselves. Thus, while self-management provides ample self-influence in terms of *how* discrepancy reduction should be approached, it provides no self-influence in terms of *what* should be done and *why* (Manz, 1986; Neck & Manz, 1996a). In other words, the purposes and importance of the given standards are not addressed by self-management. Thus, in terms of the continuum of self-influence shown in Figure 1, self-management is higher in self-influence than self-regulation, but still only moderate in terms of overall self-influence.

In contrast, self-leadership is a more encompassing theory of self-influence than either self-regulation or self-management (Manz, 1986). Self-leadership merges the behavioral strategies suggested by self-management and self-control with cognitive strategies based on the concepts of intrinsic motivation and constructive thinking patterns. Self-leadership addresses not only the reduction of discrepancy from performance standards, but also the purposes and appropriateness of the standards themselves (Manz, 1986). Thus, according to self-leadership theory, the discrepancy reduction process is based on internalized, superordinate standards of behavior rather than on immediate, short-run operating standards (Manz, 1986). Superordinate or higher level standards for self-influence provide specific reasons for self-managed behaviors. For example, rather than merely focusing on attaining a certain goal, one might evaluate the validity and appropriateness of the goal within a greater context beyond the immediate situation. By focusing on the reasons for behavior and by incorporating both cognitive and behavioral strategies, self-leadership theory represents a substantially higher level of self-influence than either self-regulation or self-management as depicted in Figure 1.

To summarize to this point, self-leadership is generally portrayed as a broader concept of self-influence than both self-regulation and self-management. Self-management theory subsumes self-regulation theory and adds a set of specific behavioral strategies for discrepancy reduction. Self-leadership theory subsumes both self-regulation and self-management and specifies additional sets of cognitive-oriented strategies designed to influence behavioral outcomes. Self-leadership also goes beyond self-management and self-regulation by addressing the superordinate standards (i.e., the reasons) for behavior.

In addition to the theoretical foundations provided by self-regulation and self-management, intrinsic motivation and social cognitive theories have also heavily influenced self-leadership theory. While self-management emphasizes extrinsic rewards (i.e., outcomes such as praise, recognition, and self-reinforcement using external reward contingencies), self-leadership goes beyond this perspective to focus on the natural rewards that result from the performance of the task or activity itself (Manz, 1986, 1992a; Manz & Neck, 1999). Self-leadership's conceptualization of natural rewards is based primarily on the intrinsic motivation literature (e.g., Deci, 1975), particularly Deci and Ryan's (1985) cognitive evaluation theory. Building on the work of White (1959) and deCharms (1968), cognitive evaluation theory suggests that the need for competence and the need for self-determination are the primary mechanisms that drive intrinsic motivation. The need for competence involves the need to exercise and extend one's capabilities, while the need for self-determination involves the need to feel free from pressures such as contingent rewards (Deci & Ryan, 1985). Cognitive evaluation theory contends that individuals will seek to find and overcome challenges in an effort to increase feelings of competence and self-determination. Support for the efficacy of intrinsic motivation has been demonstrated in numerous empirical studies (e.g., Deci, Connell, & Ryan, 1989; Harackiewicz, 1979; Zhou, 1998). For instance, Oldham and Cummings (1996) showed that work conditions expected to foster intrinsic motivation led to greater employee creativity.

Feelings of competence and self-control (i.e., self-determination) are a central part of self-leadership's conceptualization of natural rewards (Manz & Neck, 1999). According to self-leadership, to the extent that activities and tasks can be chosen, structured, or perceived in ways

that lead to increased feelings of competence and self-determination, task performance will be enhanced. Finally, although natural reward strategies are generally effective, self-reward strategies utilizing *external* reward contingencies (as suggested by self-management theory) may be helpful in situations lacking natural or intrinsic rewards (Manz & Neck, 1999). That is to say, given a task that is inherently unpleasant or tedious (i.e., a task lacking in intrinsically motivating aspects), external self-reward contingencies become particularly appropriate and effective.

Self-leadership theory has also drawn substantially from Bandura's (1977, 1986) social cognitive theory. Social cognitive theory suggests that human behavior may be best explained by a triadic reciprocal relationship among internal influences (cognitive processes and personal factors), external influences (environmental reinforcement), and behavior. In contrast, reinforcement theory contends that behavior is a function of environmental factors alone (e.g., Skinner, 1953). Self-leadership theory is deeply rooted in social cognitive theory's reciprocal determinism view of human behavior, which suggests that both environmental contingencies and cognitive processes influence behavior (Manz & Neck, 1999; Neck & Manz, 1992; 1996a). As outlined above, self-leadership's behavior focused strategies seek to shape behavioral outcomes through the appropriate management of environmental factors (e.g., creating an external self-reward contingency), while self-leadership's constructive thought strategies influence behavior through the appropriate management of internal cognitive processes (e.g., positive mental imagery). Natural rewards strategies can be focused either externally (e.g., build more inherently enjoyable aspects into a given task) or internally (e.g., cognitively shift focus toward the intrinsically enjoyable aspects of a given task).

Self-efficacy is a key concept within social cognitive theory. Self-efficacy refers to a person's beliefs regarding his/her capabilities to perform a specific task (Bandura, 1986, 1991). The self-efficacy concept is complimentary with Deci and Ryan's (1985) cognitive evaluation theory. Needs for competence and self-determination drive individuals to select and pursue more difficult goals (Deci & Ryan, 1985). The achievement of difficult goals leads to increased perceptions of self-efficacy (Bandura, 1991). Higher levels of self-efficacy, in turn, lead to even higher future performance standards (Bandura, 1991). Finally, high self-efficacy leads to greater effort and persistence in the pursuit of one's goals and objectives (e.g., Bandura & Cervone, 1983, 1986).

Self-leadership theory seeks to integrate these basic components of cognitive evaluation theory and social cognitive theory. A primary objective of all three categories of self-leadership strategies is the enhancement of self-efficacy perceptions, which should in turn lead to higher levels of performance (e.g., Manz, 1986; Manz & Neck, 1999; Neck & Manz, 1992; 1996b; Prussia et al, 1998). Empirical evidence supports the effectiveness of self-leadership strategies in increasing self-efficacy perceptions. For instance, Frayne and Latham (1987; Latham & Frayne, 1989) showed a positive relationship between self-management training and self-efficacy for reducing absenteeism. In addition, Neck and Manz (1996b) demonstrated a significant difference in self-efficacy levels between a group that had received thought self-leadership training and non-training control group. Further, a second post-training measurement (completed after the subsequent training of the control group) indicated no deterioration in self-efficacy perceptions a full ten weeks after conclusion of the training. More recently, Prussia and his colleagues (Prussia et al., 1998) examined the hypothesized role of self-efficacy as a mediator

of the relationship between self-leadership strategies and performance. An analysis utilizing structural equations modeling techniques indicated significant relationships between self-leadership strategies, self-efficacy perceptions, and task performance. Furthermore, the effects of self-leadership strategies on performance were fully mediated through self-efficacy perceptions. These findings suggest that self-efficacy may serve as the primary mechanism through which self-leadership strategies affect performance. Taken together, these empirical results emphasize the key role of self-efficacy perceptions in self-leadership theory.

In summary, self-leadership can be viewed as an overarching theory of self-influence that subsumes both self-regulation and self-management while incorporating important aspects of both cognitive evaluation theory and social cognitive theory. Specifically, self-leadership goes beyond the basic notion of discrepancy reduction to embrace the specific behavioral strategies prescribed by self-management. Self-leadership supersedes self-management by suggesting additional cognitive strategies based on intrinsic motivation and thought management. In addition, self-leadership incorporates notions from cognitive evaluation theory and social cognitive theory, especially self-efficacy, that serve as the framework upon which self-leadership strategies are based and as the mechanism through which self-leadership strategies affect performance. In short, self-leadership enjoys a strong theoretical foundation. Nevertheless, although self-leadership incorporates and synthesizes key aspects from several well-known theories of motivation, it is generally conceptualized a unique and distinctly valuable constellation of behavior shaping strategies. The following section contains a short review of research pertaining to self-leadership measurement and scale development

Self-Leadership: Measurement Issues

Despite the potential of self-leadership strategies, no psychometrically sound self-leadership measurement scale has previously been developed. However, two noteworthy preliminary attempts have been made to develop a Self-Leadership Questionnaire (SLQ). Both of these efforts utilized a prototype created by Manz and Sims and rooted in the self-leadership literature (Manz, 1986, 1992a, Manz & Sims, 1987, 1991) as a basis for the development a more advanced instrument. First, Cox (1993) developed and assessed a 34-item SLQ. Unrestricted factor analysis led to an eight-factor solution with factors labeled as: self-problem solving initiative, efficacy, teamwork, self-reward, self-goal setting, natural rewards, opportunity thought, and self-observation/evaluation (Cox, 1993). Alpha coefficients (Cronbach, 1951) for the Cox (1993) SLQ sub-scales ranged from .69 to .93. Mean James coefficients (assessing interrater consensus; James, Demaree, & Wolf, 1984) of .82 or better were obtained for all eight SLQ behavior dimensions (Cox, 1993). Based on these assessments, Cox's (1993) SLQ has shown preliminary potential as a self-leadership assessment scale. The Cox scale was recently employed as a measure of self-leadership in a field study (Roberts & Foti, 1998). Roberts and Foti (1998) reported a coefficient alpha of .91 for the Cox SLQ, providing additional preliminary evidence of the scale's psychometric properties.

More recently, Anderson and Prussia (1997) have presented an alternative preliminary effort toward the development of a self-leadership scale. In this study, a 90-item SLQ prototype, based on earlier work by Manz (1992a) and Manz and Sims (1991), was reduced to 50 items

through a sorting process that assessed the agreement of 18 category judges. The 50 item SLQ was then administered to a sample of 194 students (Anderson & Prussia, 1997). Factor analysis of the resulting data yielded ten unique factors. Six factors (self-goal setting, self-reward, self-punishment, self-observation, self-cueing, and self-withholding) assess self-leadership's behavior focused strategies, one factor (focusing thoughts on natural rewards) represents self-leadership's natural reward strategies, and three factors (visualizing successful performance, self-talk, and evaluating beliefs and assumption) evaluate self-leadership's constructive thought pattern strategies (Anderson & Prussia, 1993). Alpha coefficients (Cronbach, 1951) ranged from .69 to .91 for each of the ten scale sub-dimensions (Anderson & Prussia, 1993). However, several items loaded on the wrong factor and demonstrated acceptable factor loadings (greater than .30) on more than one factor. The Anderson and Prussia SLQ was then administered to a second sample to further assess the construct validity of the scale (Anderson & Prussia, 1993). In the second administration, one sub-scale (i.e., focusing thoughts on natural rewards) dropped below Nunnally's (1978) recommended scale reliability threshold of .70 to an alpha of .62, thus indicating significant instability across samples for this dimension of the SLQ factor structure (Anderson & Prussia, 1997). Another sub-scale (i.e., self-observation) was marginal with an alpha of .70. While the efforts of Cox (1993) and Anderson and Prussia (1997) represent significant and valuable progress in the development of a valid self-leadership scale, these efforts are clearly preliminary. Further development of a psychometrically acceptable SLQ is a pressing concern in the advancement of self-leadership research.

This overall section of the paper has presented an in-depth review and analysis of self-leadership theory. After a general definition and overview of self-leadership theory, a discussion of the theoretical foundations of self-leadership was presented that differentiated and contrasted self-leadership with underlying theories of self-influence and motivation. Finally, issues involving self-leadership measurement and scale development were examined. The following section will consist of overviews of personality theory in general and of the "Big Five" model of personality in particular.

THE BIG FIVE MODEL OF PERSONALITY

Personality Theory: A Brief Overview

Attempts to categorize and label individual differences have persisted for many centuries. Ancient Greek and Roman writers such as Hippocrates and Galen wrote of differing individual "temperaments." In the 18th century, Kant (1798/1912) further elaborated on the four basic temperaments: the sanguine, the melancholic, the choleric, and the phlegmatic, in an attempt to categorize and understand differences in individual personality. Modern personality theorists still struggle with the categorization of individual personality differences and in the 20th century many competing theories of human personality were proposed. These include cognitive theories of personality (e.g., Bandura, 1977; 1986; Kelly, 1955; Mischel, 1968, 1990; Rotter, 1954), motivational theories of personality (e.g., Freud, 1924; Hull, 1943; Murray, 1938), and trait theories of personality (e.g., Allport, 1937; Cattell, 1943; Eysenck, 1947, 1970).

Trait-based personality theory has experienced a resurgence of interest in recent years, after falling into disrepute in the late 1960's due in part to the influential writings of Guion (1965) and Mischel (1968) that argued for the importance of situational factors above trait factors. In addition, many psychologists expressed concern regarding invasion of privacy issues and the appropriateness of personality scales in light of the Civil Rights Act of 1964 (Hough & Schneider, 1996). Although many practitioners continued to use trait personality variables, it was not until the late 1980's that trait theories of personality began to reemerge in mainstream psychological practice and research. Today, trait theories largely dominate the study of personality and the "Big Five" model of personality is currently one of the more influential and well-respected trait theories.

The Development of the Big Five Model of Personality

The "Big Five" model of personality or the "five-factor model (FFM)" (e.g., Mount & Barrick, 1995) has gained tremendous popularity and academic credibility in recent years after a seemingly sudden appearance in the mid-1980's. In reality, the Big Five has a long, rich, and interesting history that originates with Sir Francis Galton's (1884) espousal of the "lexical hypothesis," which suggests that all human personality traits are reflected and encoded in descriptive words. Allport and Odbert (1936), expanding on Galton's work through an analysis of Webster's Unabridged Dictionary, identified 17,953 such descriptive terms. Around the same time, Thurstone (1934), commenting on his factor analysis of sixty personality descriptors, asserted, "it is of considerable psychological interest to know that the whole list of sixty adjectives can be accounted for by postulating only five independent common factors" (p.13). Cattell (1943, 1945) further reduced Allport and Odbert's (1936) extensive list to thirty-five basic descriptors. Using twenty-two of Cattell's thirty-five descriptors, Fiske (1949) found a five-factor solution that was constant across self, peer, and observer ratings.

The Big Five, as it exists in its present form, was first demonstrated in studies conducted by U.S. Air Force researchers Tupes and Christal (1961). Replication and extension of the works of Cattell (1943, 1945) and Fiske (1949) led to a robust five-factor solution. Tupes and Christal (1961) labeled the five factors Surgency, Agreeableness, Dependability, Emotional Stability, and Culture. Unfortunately, the results of these studies were published in obscure Air Force technical reports and were thus generally inaccessible prior to a recent reprint (i.e., Tupes & Christal, 1992). Subsequent researchers including Norman (1963), Borgatta (1964), and Smith (1967) successfully replicated the results reported by Tupes and Christal (1961). Goldberg (1990) further solidified the case for the Big Five when he rediscovered the five basic factors from a list of independently derived traits not based on the original Cattell thirty-five. While a variety of terms have been used to represent the five factors, the terms Extraversion, Agreeableness, Conscientiousness, Neuroticism (or Emotional Stability), and Openness to Experience seem to be emerging as the most commonly used terms. For more in-depth overviews of the development of the Big Five model refer to Digman (1990, 1996), Hough and Schneider (1996), Schneider and Hough (1995), and Goldberg (1993).

In recent years, a consensus appears to be developing among trait personality theorists in support of the Big Five model. Indeed, McCrae and John (1992) have suggested "that it is more

fruitful to adopt the working hypothesis that the five-factor model of personality is essentially correct in its representation of the structure of traits" (p.177). Certainly, the Big Five model has sparked a significant amount of applied research in recent years (see Mount & Barrick, 1998, for a review). Much of this research has utilized instruments designed to assess the five factors. One such instrument, the NEO-Personality Inventory (NEO-PI) (Costa & McCrae, 1985, 1992b), has become the most commonly used and extensively validated five-factor assessment scale. The NEO-PI is comprised of 240 items with six subscales or facets within each of the five basic domains. Respondents are asked the extent to which they agree or disagree with each statement on the basis of a five-point Likert-type scale ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree."

Unlike the behavior-based NEO-PI, the Goldberg (1992) 100-adjective unipolar five-factor instrument, another widely used Big Five assessment tool, was developed in closer accord with the lexical hypothesis (i.e., important individual difference variables are encoded in single-word descriptors). In contrast to questionnaire-type instruments such as the NEO-PI, the 100-adjective scale asks respondents to rate the extent to which single adjectives accurately describe them.

In summation, the Big Five model has become the dominant trait theory of personality guiding research today. While the model has been subject to a certain amount of criticism (e.g., Block, 1995; Eysenck, 1991, 1992), the weight of evidence suggests that the five-factor structure remains remarkably stable over time (Costa & McCrae, 1988, 1992a), generalizes across cultures and languages (Goldberg, 1993; McCrae & Costa, 1997; Pulver, Allik, Pulkkinen, & Hamalainen, 1995; Salgado, 1997), and shows substantial agreement across self and other rating sources (McCrae & Costa, 1990). This growing body of validating evidence further solidifies the Big Five model's status as the most widely accepted and influential modern trait theory of personality. The following section will examine the relationships between personality and self-leadership.

SELF-LEADERSHIP AND PERSONALITY

Few attempts have been made to investigate the relationship between personality and self-leadership. Indeed, self-leadership theorists have generally ignored personality and individual difference factors. Some theorists (e.g., Neck & Manz, 1992; Neck, Stewart, & Manz, 1995) have even implied that personality traits may be unrelated to self-leadership effectiveness, citing a study (Turner et al., 1982) that found no relationship between extraversion and performance for individuals using mental imagery (a self-leadership strategy). In contrast, Williams (1997) has suggested that a variety of personality traits are likely to be associated with self-leadership skills in meaningful ways. In particular, Williams (1997) proposed positive associations between self-leadership skills and extraversion, emotional stability, conscientiousness, general self-efficacy, internal locus of control, and self-monitoring. Finally, others have gone so far as to suggest that self-leadership concepts are indistinguishable from personality traits and other related concepts (e.g., Guzzo, 1998; Markham & Markham, 1995, 1998).

This section will review the existing literature concerning the relationship between self-leadership and personality. Specifically, empirical evidence will be provided to show linkages between personality and self-regulation, self-management, and self-leadership. In addition, temperament and personality development theory will be presented as a theoretical foundation for a relationship between personality and self-leadership.

Personality and Self-Regulation

Empirical evidence has suggested a relationship between personality and self-regulation (e.g., Bassan-Diamond, Teglasi, & Schmitt, 1995; Koestner, Bernieri, & Zuckerman, 1992; Sansore, Wiebe, & Morgan, 1999; Shiomi, Nakata, & Joireman, 1999). Specifically, studies have shown significant relationships between self-regulation and conscientiousness (Koestner et al., 1992; Sansone et al., 1999), self-regulation and neuroticism (Bassan-Diamond et al., 1995; Shiomi et al., 1999), and self-regulation and extraversion (Shiomi et al., 1999). For example, Sansone et al. (1999) found that individuals high in conscientiousness persisted longer on a self-regulatory task. Further, these individuals appeared to have a lesser need for utilizing available strategies designed to help them maintain motivation toward task achievement. Additionally, Bassan-Diamond et al. (1995) found that subjects higher in negative emotionality, a concept closely related to neuroticism, scored lower on a self-regulatory task. Evidence such as this suggests that various personality traits are related to self-regulation. Insomuch as self-leadership represents an expanded theory of self-regulation, it seems likely that personality is also related to self-leadership. The following section will review empirical evidence linking self-management and self-leadership to personality.

Personality, Self-Management, and Self-Leadership

Empirical evidence also supports relationships between personality and both self-management and self-leadership. For example, studies (Verble, 1994; Williams et al., 1995) have shown significant relationships between self-management and the Myers-Briggs Type Indicator (Myers & McCaulley, 1985) dimensions of extraversion, judging, and sensing. In addition, Stewart et al. (1996) demonstrated significant correlations ($p<.01$) between conscientiousness, neuroticism, and supervisor evaluations of self-leadership behaviors. Direct empirical evidence such as this further supports the likelihood of significant relationships between self-leadership and personality concepts. In the following section, temperament theory of personality development will be used to provide a theoretical basis for a relationship between personality and self-leadership.

Temperament, Personality Development, and Self-Leadership

Temperament theory (e.g., Rothbart, 1989a, 1989b) has often been utilized to explain the development of adult personality traits (Ahadi & Rothbart, 1994; Rothbart & Ahadi, 1994). Temperament theory suggests that three primary temperament systems develop in infants. First, the *Approach System* involves sensitivity to reward signals in the environment and an active

engagement of the environment by the infant. Behavioral manifestations of the approach system include sociability, impulsivity, sensation seeking, and activity level (Ahadi & Rothbart, 1994). This temperament system is conceptually related to Gray's (1981, 1987) Behavioral Activation System. Second, the *Anxiety System* involves threat sensitivity accompanied by negative affect including discomfort, fear, anger, sadness, and unresponsiveness to soothing (Ahadi & Rothbart, 1994). The anxiety system is very similar to Gray's (1981, 1987) conceptualization of a Behavioral Inhibition System that, when activated, can generate fear, inhibit ongoing behavior, and increase attention to environmental stimuli. Third, the *Effortful Control System* is conceptualized as a superordinate self-regulatory system that can assert control over the other two systems (Ahadi & Rothbart, 1994). Effortful Control (e.g., Rothbart & Posner, 1985) involves the ability to voluntarily sustain focus on a task, to voluntarily shift focus from task to task, and to voluntarily initiate or inhibit action.

According to Ahadi and Rothbart (1994; Rothbart and Ahadi, 1994), temperament systems in infants serve as the building blocks for adult personality traits. In short, the approach system is the basis for the adult trait of extraversion, the anxiety system serves as the basis for the adult trait of emotional stability/neuroticism, and the effortful control system translates into the adult trait of conscientiousness. It is the effortful control system, however, being conceptualized as a superordinate self-regulatory system, which has perhaps the greatest influence over the development of adult personality. Infants with more highly developed effortful control systems will likely develop higher levels of adult conscientiousness. The ability to focus and control attention will likely lead to the development of traits such as persistence, organized, self-discipline, logical, etc., which define the conscientiousness factor. In addition, infants with more highly developed effortful control systems will likely be better able moderate the anxiety system (e.g., direct attention away from threatening signals or evaluate the nature of the threat and implement appropriate coping strategies) thus developing higher levels of adult emotional stability. Finally, infants with more highly developed effortful control systems will likely be better able to moderate the approach system so that they will not appear too inhibited, unsociable, or inactive thus developing relatively higher levels of adult extraversion.

It also seems reasonable to expect that individuals with more highly developed effortful control systems as infants would likely still possess more highly developed self-regulatory tendencies as adults. Empirical evidence supports such a proposition. Shoda, Mischel, and Peake (1990) conducted a follow-up study on children that had participated in various studies (e.g., Mischel, 1974) concerning the delay of gratification from an immediate reward (i.e., candy or a toy) to a preferred future reward (i.e., more candy or a better toy). Shoda et al. (1990) found that children who were able to self-impose delay of gratification were rated by their parents ten years later as being better able to control themselves in frustrating situations, to concentrate, to resist temptation, to maintain composure under stress, and to delay gratification. These results demonstrate longitudinal stability for self-regulatory tendencies.

Therefore, on the basis of temperament theory, individuals high in conscientiousness, emotional stability, and extraversion in adulthood are also likely to be better self-regulators. Furthermore, self-leadership, a more highly developed form of self-regulation, should thus be positively related to conscientiousness, emotional stability, and extraversion. Indeed, Ahadi and Rothbart (1994) suggest that "interaction between cognition and self-regulation in the adult

personality allows for coping strategies that may serve to inhibit or facilitate underlying temperamental tendencies" (p. 190). Self-leadership is generally conceptualized as an interaction between cognition and self-regulation resulting in cognitive and behavior-focused strategies.

Based on this empirical and theoretical evidence, a relationship between self-leadership and personality appears quite likely. The question that remains concerns the nature and extent of this relationship. As mentioned above, some theorists have recently questioned whether self-leadership is a unique and distinguishable concept with respect to certain personality traits (e.g., Guzzo, 1998; Markham & Markham, 1995, 1998). For instance, Markham and Markham (1998) suggest that "one of the major stumbling blocks of self-leadership theory is its uniqueness when compared to more traditional views of similar psychological processes" (p. 197). Likewise, Guzzo (1998) has expressed concern as to whether "self-leadership is distinguishable from other, existing psychological constructs such as the personality dimension of conscientiousness…" (p. 214). Markham and Markham further state that "it is possible that various aspects of self-leadership simply recast previous personality traits…" (p. 198). While efforts to conceptually distinguish the self-leadership dimensions from related psychological concepts have been made elsewhere (e.g., Manz, 1990b; Neck & Manz, 1996; Neck, 1998; Williams, 1997), the uniqueness of self-leadership and its dimensions is a question that should be addressed by additional empirical research.

Happily, such efforts are already underway. Recently, Cohen, Chang, and Ledford (1997) reported the results of a field study providing validation for "self-management leadership" (e.g., Manz & Sims, 1987), a concept closely related to and based on general self-leadership theory. In short, self-management leadership concerns the outside leadership of self-managing teams. The object of self-management leadership is to lead others to effectively lead themselves, that is, to make self-leaders of subordinates and team members. This concept has been more commonly discussed in the literature as "Superleadership" (e.g., Manz & Sims, 1989). Responding to a call from Markham and Markham (1995) for a replication of Manz and Sim's (1987) field study, Cohen and her colleagues (Cohen et al., 1997) successfully replicated the Manz and Sims (1987) study in a different organization. Cohen et al. (1997) concluded that their "study provides evidence that self-managing leadership is a valid theoretical construct…" (p. 306). Efforts such as this are sorely needed to further demonstrate the extent to which self-leadership theory is unique and valid.

STUDY PURPOSES AND RESEARCH HYPOTHESES

In this section, the purposes of this study and the resulting research hypotheses will be developed and presented. In general terms, the study will advance self-leadership theory by examining the relationship between self-leadership skills and personality traits. As outlined in the previous section, evidence suggests that self-leadership dimensions and personality traits are related and perhaps even redundant or conceptually indistinct. Thus, the primary research question to be addressed in this study is as follows: Are self-leadership factors (i.e., behavior focused strategies, natural reward strategies, and constructive thought strategies) distinct from certain Big Five personality factors (i.e., extraversion, conscientiousness, and

neuroticism/emotional stability) and what is the nature of the relationship among these factors? The position taken here is that self-leadership strategies, though separate and distinct from certain personality traits, are related to those traits in significant and important ways. Individuals high in certain personality traits may be much more likely to naturally engage in various self-leadership strategies and self-leadership behaviors. In short, the current study seeks to clarify the nature of the relationships between certain personality traits and self-leadership strategies. This research has the potential to make an important contribution to the current self-leadership literature in that few previous efforts have been made to empirically examine the relationship between personality and self-leadership.

The central question of this study concerns whether personality traits are distinct from self-leadership and its various sub-dimensions. Although virtually no prior research has directly examined this issue, the findings of Stewart and his colleagues (Stewart et al., 1996) provide preliminary support for the hypothesis that self-leadership is distinct from personality. This study reported an interaction effect between conscientiousness and self-leadership training such that those scoring lowest in conscientiousness subsequently showed the greatest increase in self-directed behaviors as a result of training. This lends support to the general contention that self-leadership behaviors are amenable to change (e.g., Manz, 1986, 1992a). In contrast, personality characteristics are generally viewed as relatively stable across both time and situation (e.g., Block, 1981; Conley, 1985; Costa & McCrae, 1994; McCrae & Costa, 1990). Thus, it seems likely that self-leadership skills and behaviors, in direct contrast with personality characteristics, are relatively malleable. If self-leadership is amenable to change while personality is not, then these concepts must not be synonymous with one another.

In support of this argument, consider the following evidence. Mischel (1974) demonstrated in his classic "delay of gratification" studies that young children could learn or be taught strategies that significantly aided in the self-imposed delay of gratification. These strategies (e.g., cognitively focusing attention away from the immediate reward toward the preferred reward) were conceptualized as distinct from more stable individual characteristics (e.g., achievement motivation, level of aspiration, and impulsivity) that were also correlated with successful gratification delay behaviors (Mischel, 1990). Self-leadership strategies, like the gratification delay strategies employed by the children in these studies, are designed to increase self-regulatory effectiveness without necessarily changing underlying and relatively more stable personality characteristics.

The argument may also be advanced logically by way of an analogy. Extraverts (i.e., individuals who are outgoing, talkative, and sociable), are more likely to be comfortable in making a public presentation than are introverts. Nevertheless, given practice and effort, introverts can become quite comfortable with public speaking. Furthermore, certain sets of strategies (e.g., Toastmasters International) could be used to facilitate this type of performance. Yet, even after becoming a good public speaker, the introvert has likely not transformed into an extravert. Rather, behavior has been shaped by a set of strategies. Finally, few would confuse the personality trait (i.e., extraversion-introversion) with the set of strategies designed to facilitate behavioral performance (i.e., Toastmasters). This logic, coupled with the research evidence presented above, suggests that personality characteristics are distinguishable from self-leadership and its components. Specifically,

Hypothesis 1: The self-leadership factors of behavior focused strategies, natural reward strategies, and constructive thought strategies are distinct from the Big Five personality factors of extraversion, conscientiousness, and neuroticism/emotional stability.

While the assertion made here is that self-leadership is distinct from specified personality traits, this is not to say that personality and self-leadership are not related in any meaningful way. Indeed, as suggested above, it seems quite likely that those high in certain personality characteristics would be predisposed to naturally engage in self-leading behaviors prior to any formal exposure to self-leadership strategies. Accordingly, hypotheses will now be advanced to specify the nature of the relationships between self-leadership and specific personality traits.

Extraversion is most often described as the degree to which an individual is sociable, gregarious, talkative, assertive, adventurous, active, energetic, and ambitious (Mount & Barrick, 1995). Extraverts also tend to be high in positive affectivity (i.e., enthusiasm and positive emotions), self-efficacy, and optimism (George, 1996; Williams, 1997). Because thought self-leadership skills training has been shown to increase positive affect, optimism, and self-efficacy (Neck & Manz, 1996b), it seems reasonable to suggest that extraverts, who are naturally high in these characteristics, would be more likely to demonstrate self-leadership behaviors than introverts. Furthermore, prior research has often attempted to link extraversion and various related concepts with specific theories of self-influence. Recently for example, Shiomi et al. (1999) demonstrated a positive relationship between immodithymic and syntonic traits (extraversion correlates) and self-regulation. In addition, several studies have suggested that optimism may be positively related to self-regulation (Cantor & Zirkel, 1990; Kirschenbaum, 1987; Scheier & Carver, 1985). Similarly, Williams and his colleagues (Williams et al., 1995) have demonstrated a positive relationship between extraversion scores and self-management prior to any training interventions. Given the fact that self-leadership is closely related to both self-regulation and self-management, it seeks likely that self-leadership skill levels are also positively related to extraversion. Accordingly,

Hypothesis 2: Extraversion is positively related to behavior focused, natural reward, and constructive thought self-leadership skills.

The Big Five's neuroticism factor consists of the specific traits of anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability (Costa & McCrae, 1992b). This factor has often been labeled "emotional stability" (reverse scaled) by other researchers and can be further conceptualized as the extent to which a person is emotional, insecure, nervous, fearful, and apprehensive (Mount & Barrick, 1995). Individuals high in negative affectivity, a concept related to neuroticism, are likely to be more pessimistic, taking a negative view of themselves and the world around them (George, 1996; Williams, 1997). In addition, those high in neuroticism are likely to experience depressive cognitions leading to irrational belief patterns, which in turn cause neurotics to be less effective self-regulators (Cantor & Zirkel, 1990; Kirschenbaum, 1987; Pyszczynski & Greenberg, 1987). As a result of these irrational belief patterns, neurotics tend to overreact to unfortunate events, thereby experiencing higher levels of negative affect and pessimism (Ellis, 1977; Seligman, 1991; Williams, 1997). The cognitive

strategies of thought self-leadership (i.e., self-talk and mental imagery) have been recommended as a means for confronting the irrational beliefs and thought patterns experienced by neurotics (e.g., Manz, 1992a; Neck & Manz, 1992). Finally, recent research has demonstrated significant linkages between self-regulation and schizothymic, nervous, or self-uncertain traits (Shiomi et al., 1999), and between self-regulation and negative emotionality (Bassan-Diamond et al., 1995). Based on this stream of evidence, it seems likely that neuroticism would be negatively associated with self-leadership skill levels. By the same logic, emotional stability, the polar opposite of neuroticism, is likely to be positively related to self-leadership skills. Hence,

>   **<u>Hypothesis 3</u>: Emotional stability is positively related to behavior focused, natural reward, and constructive thought self-leadership skills.**

The Big Five's conscientiousness factor consists of the specific traits of competence, order, dutifulness, achievement striving, self-discipline, and deliberation (Costa & McCrae, 1992b). Individuals high in conscientiousness are characterized as being responsible, careful, persevering, orderly, cautious, planful, hard working, and achievement-oriented (Mount & Barrick, 1995). Although previous research has demonstrated a relationship between self-regulation and conscientiousness (e.g., Koestner et al., 1992; Sansone et al., 1999), only one prior study directly examined the relationship between self-leadership and conscientiousness. In a field study involving employees at a hotel/resort, Stewart and his colleagues (Stewart et al., 1996) demonstrated a positive relationship between conscientiousness and employee self-directed behaviors. Additionally, this study provided evidence supporting the notion of conscientiousness as a moderator of self-leadership training effectiveness. Specifically, those study participants who scored low in conscientiousness showed much greater improvement in self-directed behaviors following a self-leadership training intervention than those who had scored high in conscientiousness. Given this evidence, it seems likely that conscientiousness is positively related to self-leadership. Thus,

>   **<u>Hypothesis 4</u>: Conscientiousness is positively related to behavior focused, natural reward, and constructive thought self-leadership skills.**

No strong logical or theoretical bases are readily apparent upon which to advance hypotheses concerning the relationships between self-leadership behaviors and the remaining Big Five personality factors (i.e., agreeableness and openness to experience). Thus, no hypothesized relationships will be advanced for these factors. Finally, relationships between self-leadership skill levels and other personality concepts including general self-efficacy, self-esteem, locus of control, and self-monitoring have been proposed elsewhere (Williams, 1997). While an investigation of these proposed relationships might prove to be a worthwhile endeavor, such an investigation is beyond the scope of the current research. In this section, the purposes of the proposed study were presented along with research hypotheses.

SUMMARY

This chapter has thoroughly reviewed relevant self-leadership and personality literature. Building upon the foundation provided by this review, the rationale for the current study was

developed and presented along with specific research hypotheses reflecting the expected relationships between the three self-leadership dimensions and three Big Five personality factors. In the following chapter, methods and procedures for the testing of the hypotheses will be explained.

Chapter 3: Method

SUBJECTS

The sample was composed of 381 undergraduate students enrolled in an introductory level management course (60% male, 40% female, mean age = 21.12). Listwise deletion for missing data resulted in final sample size of 357. Because the primary focus of the present study is the examination of the relationships between psychological concepts, this sample of undergraduates, though convenient, seems as appropriate as any other large sample at this preliminary stage. Future research should determine whether the results found here generalize to other samples of interest.

MEASURES

Self-leadership was measured using the Revised Self-Leadership Questionnaire (RSLQ). The RSLQ consists of 35 items in nine distinct sub-scales within the three primary self-leadership dimensions. The behavior focused dimension is represented by five sub-scales labeled: self-goal setting (five items, α=.84), self-reward (three items, α=.93), self-punishment (four items, α=.86), self-observation (four items, α=.82), and self-cueing (two items, α=.91). A single sub-scale consisting of five items (α=.74) represents the natural rewards dimension. The constructive thought dimension is represented by three sub-scales labeled: visualizing successful performance (five items, α=.85), self-talk (three items, α=.92), and evaluating beliefs and assumptions (four items, α=.78). The RSLQ was developed in a pilot study building upon the previous versions of self-leadership questionnaires (e.g., Anderson & Prussia, 1997; Cox, 1993) described earlier. Anderson and Prussia's (1997) 50-item SLQ served as the primary basis for the RSLQ. To create the RSLQ, seventeen ambiguous items were deleted from the Anderson and Prussia (1997) scale and two items were added from the Cox (1993) instrument. In addition, five items from the Anderson and Prussia (1997) scale were reworded to better reflect self-leadership theory.

The RSLQ was then administered to a sample of 470 undergraduate students in an introductory business class. In this sample, the RSLQ demonstrated significantly better reliability and factor stability relative to the Anderson and Prussia (1997) instrument. Reliability estimates remained the same or improved significantly for each sub-scale. An exploratory factor analysis of the RSLQ items utilizing the principal component extraction method with varimax rotation indicated an impressively stable factor structure. As expected, the "eigenvalues greater than one" test (Gorsuch, 1974) indicated nine interpretable factors. Furthermore, all items loaded unambiguously on the correct factors with unusually high factor loadings, many in excess of .70. All factor loadings exceeded .30, a widely accepted cut-off level.

Additionally, a higher order factor analysis was conducted using LISREL 8 (Jöreskog & Sörbom, 1993) to examine the efficacy of the RSLQ in measuring the three self-leadership

dimensions. The model tested is shown in Figure 2. Established item-parceling procedures (e.g., Barry & Stewart, 1997; Collins & Gleaves, 1998; Schmit & Ryan, 1993) were utilized to create composite indicators. Items in each of the sub-scales were summed and averaged to create five composite indicators for the behavior focused dimension and three composite indicators for the constructive thought dimension. Three single items served as indicators for the natural reward dimension.
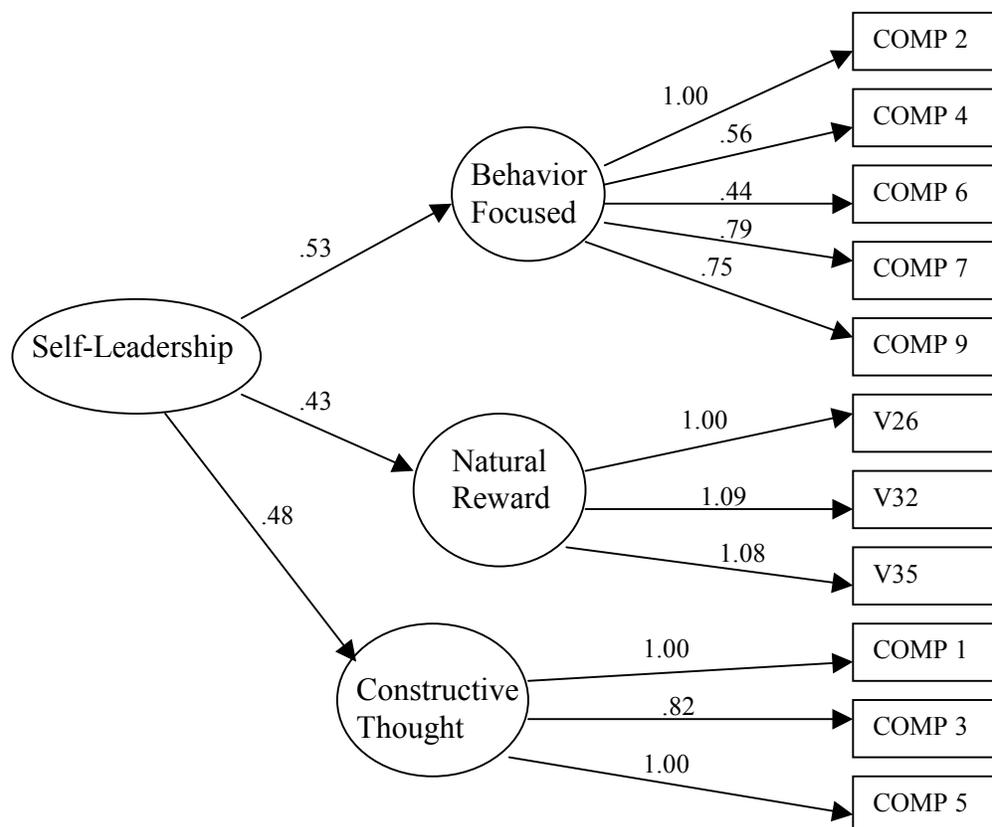
Figure 2. **Pilot study higher order factor model of self-leadership and its primary dimensions with standardized parameter estimates. All linkages were significant at the α = .05 level.**

Note. *N* = 470. COMP 1 = Visualizing Successful Performance Item Composite, COMP 2 = Self-Goal Setting Item Composite, COMP 3 = Self-Talk Item Composite, COMP 4 = Self-Reward Item Composite, COMP 5 = Evaluating Beliefs and Assumptions Item Composite, COMP 6 = Self-Punishment Item Composite, COMP 7 = Self-Observation Item Composite, COMP 8 = Natural Rewards Item Composite, COMP 9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ.

In accordance with the recommendations of Hoyle and Panter (1995), the following fit indexes were used to assess the fit of the hypothesized model: chi-square (χ^2, e.g., Bollen, 1989a), the goodness-of-fit-index (GFI, Jöreskog & Sörbom, 1981), the nonnormed fit index (NNFI, Bentler & Bonnett, 1980), the incremental fit index (IFI, Bollen, 1989b), and the comparative fit index (CFI, Bentler, 1990). The use of multiple fit indexes is generally advisable in order to provide convergent evidence of model fit. The values of GFI, NNFI, IFI, and CFI range from 0 to 1.0, with values above .90 commonly indicating acceptable model fit (Bentler & Bonnet, 1980; Hoyle & Panter, 1995). The second order factor model shown in Figure 2 demonstrated fairly good fit (χ^2 [41, N = 470] = 112.40, GFI = .96, NNFI = .93, IFI = .95, CFI = .95). The standardized solution for the model tested is shown in Figure 2 with measurement error effects omitted for clarity. A competing model with three uncorrelated factors was tested for comparison. The uncorrelated factors model demonstrated substantially worse fit (χ^2 [44, N = 470] = 482.06, GFI = .84, NNFI = .60, IFI = .68, CFI = .68). The χ^2 difference test (Anderson & Gerbing, 1988; Bollen, 1989a) indicated a statistically significant difference of 396.55. Accordingly, the second order factor model was retained as the best fitting model. In harmony with self-leadership theory, this model suggests that the behavior focused, natural rewards, and constructive thought factors have a higher order factor, namely self-leadership. This analysis also suggests that the RSLQ provides acceptable measurement of self-leadership and its three primary components. Because this is the model of self-leadership employed in the current study, the RSLQ appears well suited for measuring the self-leadership factors under consideration.

Personality was measured using the Saucier (1994) 40-Adjective Unipolar Mini-Markers Big Five Instrument. This instrument is an abbreviated version of the Goldberg (1992) 100-Adjective Unipolar Big Five Instrument. Respondents indicate how accurately each adjective describes them on a scale ranging from 1 = "extremely inaccurate" to 9 = "extremely accurate." In the present study, subjects rated each of the 40 adjective (8 each for extraversion, conscientiousness, emotional stability, agreeableness, and openness to experience) on a scale ranging from 1 = "extremely inaccurate" to 5 = "extremely accurate." The conversion from a 9-point scale to a 5-point scale allows for all items from both measurement instruments to be assessed on the same metric, which in turn facilitates the testing of a single model employing items from both instruments.

The primary advantage of the Saucier (1994) scale is its brevity. Indeed, the scale demonstrates "unusually impressive features for an abbreviated inventory" (Saucier, 1994; p.506). In comparison to the Goldberg (1992) instrument from which it is derived, the Saucier (1994) scale boasts fewer difficult adjectives and lower interscale correlations, although mean inter-item correlations are somewhat higher. Finally, while alpha coefficents are generally lower by .05 to .10, they are still well above the minimally acceptable level of .70 (Saucier, 1994).

Another advantage of both the Saucier (1994) and Goldberg (1992) instruments is their adjective-type format. Based upon the lexical hypothesis, many theorists have argued that personality scales should be comprised of single-word descriptors representing categories of words used to describe individual differences (e.g., Peabody, 1987; Peabody & Goldberg, 1989). Furthermore, adjective-type scales are generally more "transparent" than questionnaire-based instruments, which gives the respondent a better understanding of the trait being measured and its relationship to other assessed traits (Goldberg, 1992). This leads to higher and more

consistent factor loadings on the appropriate factors, as compared to less transparent, questionnaire-based instruments such as the NEO-PI (e.g., Cellar, Miller, Doverspike, & Klawsky, 1996). Nevertheless, the evidence suggests that the adjective-type scales are predictably correlated with the NEO-PI and that they are generally measuring the same factors (Cellar et al., 1996; Goldberg, 1992).

PROCEDURES

As part of a class lecture on personality and individual differences, students completed an instrument consisting of the 35-item RSLQ and the 40-item Saucier (1994) 40-Adjective Unipolar Mini-Markers Big Five Instrument as a self-assessment exercise (See Appendix A). The questionnaires were completed anonymously and participation was voluntary. However, in order to encourage participation, two students were randomly selected to receive a $15 movie theater gift certificate from among those participating.

ANALYSIS

Confirmatory factor analysis (CFA) was used to examine the relationships between self-leadership dimensions and personality traits. Specifically, two separate hierarchical factor models of self-leadership and personality respectively were first developed and then compared. In the preliminary stage of analysis, higher order factor models for both self-leadership and personality were developed. In the primary stage of analysis, the two higher order factor models were compared and the hypotheses were tested.

In order to further demonstrate the stability of the hierarchical factor structure of self-leadership as shown in Figure 3 and tested in the pilot study (see Figure 2), three models were tested. More precisely, a single factor model (i.e., all indicators loading on a single factor), a three uncorrelated factors (behavior focused, natural reward, and constructive thought) model, and a higher order factor model (Figure 3) were compared in terms of the degree of fit. Superior fit for the higher order factor model relative to the other two models would provide additional evidence in support of a hierarchical factor structure of self-leadership.
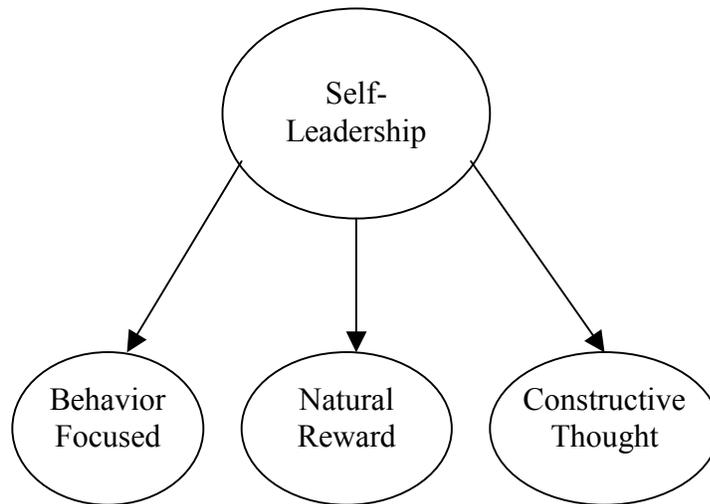
Figure 3. **A hierarchical structure model of self-leadership.**

Likewise, a higher order factor model of personality was tested relative to a single factor model and a three uncorrelated factors model. Once again, superior fit for the higher order factor model relative to the other two models would provide evidence in support of a hierarchical factor structure of personality. Although the Big Five model of personality specifies five distinct personality dimensions, the current study examined a three factor hierarchical model as shown in Figure 4. Such a model of personality, though clearly not comprehensive, more effectively represents those aspects of the Big Five model that are most likely to be related to self-leadership. As mentioned above, there is little or no theoretical basis upon which to hypothesize any relationship between self-leadership and the two remaining Big Five dimensions of agreeableness and openness to experience. The inclusion of these personality dimensions would likely reduce the correlation between the higher order factors of self-leadership and personality. Thus, by excluding these likely unrelated personality dimensions, the model of personality employed in the current study provides a much stronger test of the distinctiveness of self-leadership with respect to personality.
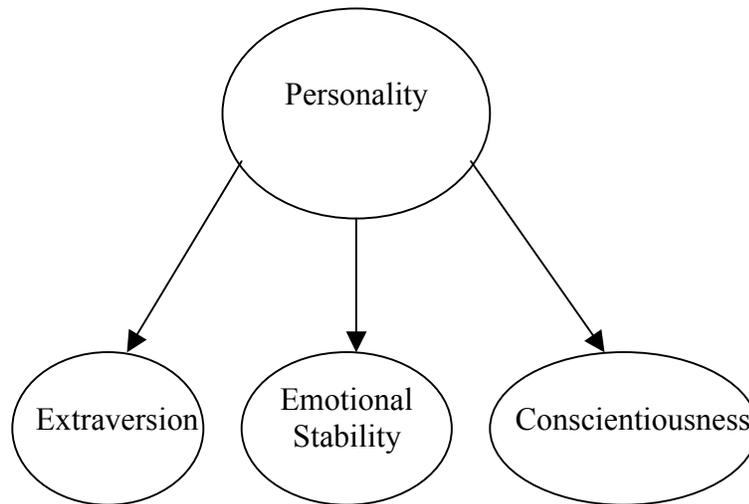
Figure 4. **A hierarchical structure model of personality.**

In the primary stage of analysis, four models examining self-leadership and personality dimensions simultaneously were tested. More specifically, a one factor model (Model 1, all self-leadership and personality indicators loading on a single factor), a two uncorrelated factors model (Model 2, all self-leadership items loading on one factor and all personality items loading on another), a six uncorrelated factors model (Model 3, three self-leadership factors and three personality factors), and a two higher order factors model (Model 4, as shown in Figure 5) were compared according the degree of fit. Incrementally better fit for each subsequent model (from Model 1 to Model 4) would demonstrate discrimination between the self-leadership dimensions and the personality dimensions, thus providing support for Hypothesis 1.
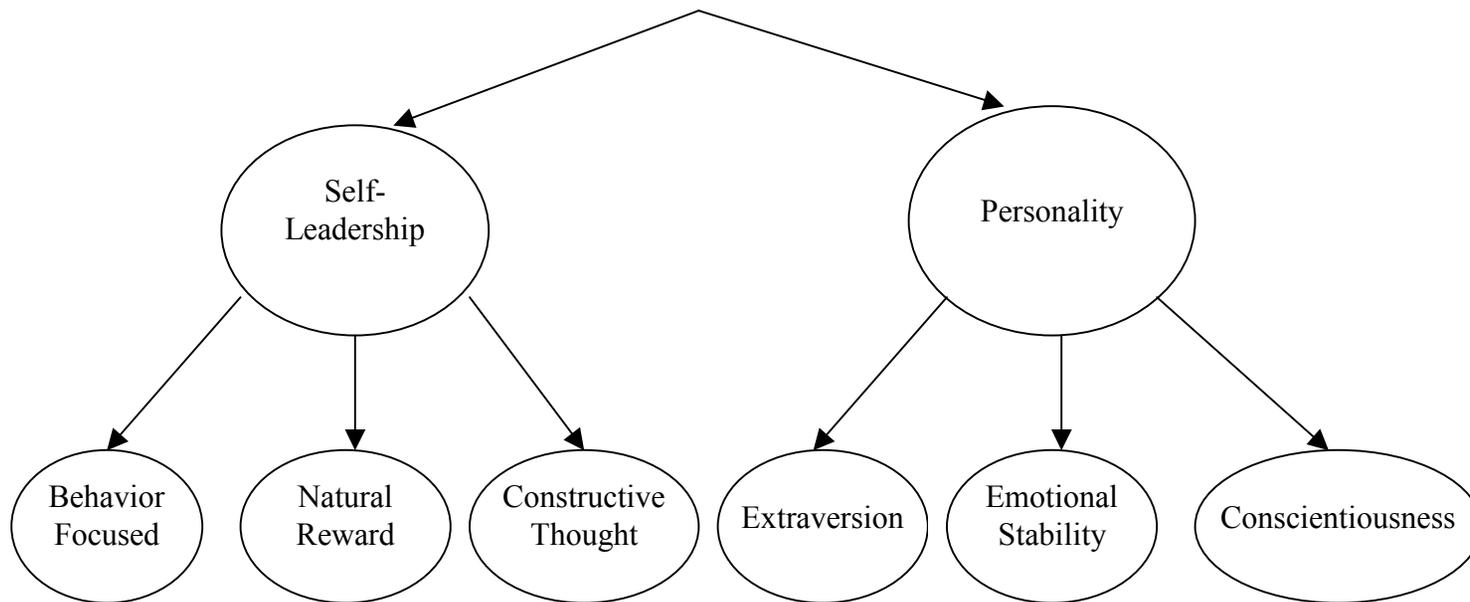
Figure 5. A higher order factor model of self-leadership and personality.

In addition, the correlation between the two higher order latent exogenous factors (self-leadership and personality) in Model 4 were examined for degree of convergence. A relatively modest correlation would provide further indication of discrimination between the self-leadership and personality factors. To further examine the relationship between the two higher order factors, Model 4 was altered by fixing the correlation between self-leadership and personality at one (call this Model 4′). A statistically significant difference in χ^2 for the two models (Model 4 and Model 4′) would provide evidence of discrimination between the two higher order factors (e.g., Pedhazur & Schmelkin, 1991; Widaman, 1985) thereby lending additional indirect support for Hypothesis 1.

Next, a six correlated factors model (Model 5) was tested for the purpose of examining intercorrelations between the six latent factors. Higher correlations within the three self-leadership factors and within the three personality factors than between the self-leadership and personality factors would provide still more evidence of discrimination and additional support for Hypothesis 1. Hypotheses 2-4 were tested by examining correlations between the personality factors and the self-leadership factors in Model 5. Significant correlations ($p<.05$) between the given personality factor and the self-leadership factors would provide evidence of a meaningful relationship and thus providing support for the corresponding hypothesis. Finally, a significant (though expectedly modest) correlation ($p<.05$) between the two higher order factors of self-leadership and personality in Model 4 would provide additional indirect support for Hypotheses 2-4. A summary of the five models to be tested in examining the relationships between self-leadership and personality is provided in Table 1.

MODEL	DESCRIPTION
Model 1 – One Factor Model	All self-leadership and personality indicators loading on a single factor
Model 2 – Two Factor Model	All self-leadership items loading on one factor and all personality items loading on another
Model 3 – Six Uncorrelated Factors Model	Three self-leadership factors and three personality factors
Model 4 – Higher Order Factor Model	Two second order factors: self-leadership and personality
Model 4′ - Higher Order Factor Unity Model	Two second order factors with the correlation between them fixed at one
Model 5 – Six Correlated Factors Model	Three self-leadership factors and three personality factors

Table 1. **Summary of factor models comparing self-leadership and personality.**

The fit of all hypothesized models was assessed by using the maximum likelihood estimation technique in LISREL 8 (Jöreskog & Sörbom, 1993). Based on the recommendations of Hoyle and Panter (1995), the following fit indexes were used to assess the fit of the hypothesized model: chi-square (χ^2, e.g., Bollen, 1989a), the goodness-of-fit-index (GFI,

Jöreskog & Sörbom, 1981), the nonnormed fit index (NNFI, Bentler & Bonnett, 1980), the incremental fit index (IFI, Bollen, 1989b), and the comparative fit index (CFI, Bentler, 1990). The values of GFI, NNFI, IFI, and CFI range from 0 to 1.0, with values closer to 1.0 commonly indicating better fitting models (Bentler & Bonnet, 1980; Hoyle & Panter, 1995).

Established item-parceling procedures (e.g., Barry & Stewart, 1997; Collins & Gleaves, 1998; Schmit & Ryan, 1993) were utilized in the current study. Following procedures established in the pilot study, items in each of the sub-scales were summed and averaged to create five composite indicators for the behavior focused factor and three composite indicators for the constructive thought factor. The three natural reward items served as indicators for that factor. For the personality dimensions, items were randomly divided, summed, and averaged to form three representative item composites for each factor. Forming composites allows for fewer parameter estimations and greater stability of estimates (e.g., Marsh, Antill, & Cunningham, 1989). The measurement model employed in the current study is shown in Figure 6.

SUMMARY

This chapter has described the methodology used in the current study. In particular, the sample of interest and procedures to be followed were reviewed. In addition, the measures employed in the study were presented and discussed. Finally, the analytical techniques applied to the data were explained in some detail.
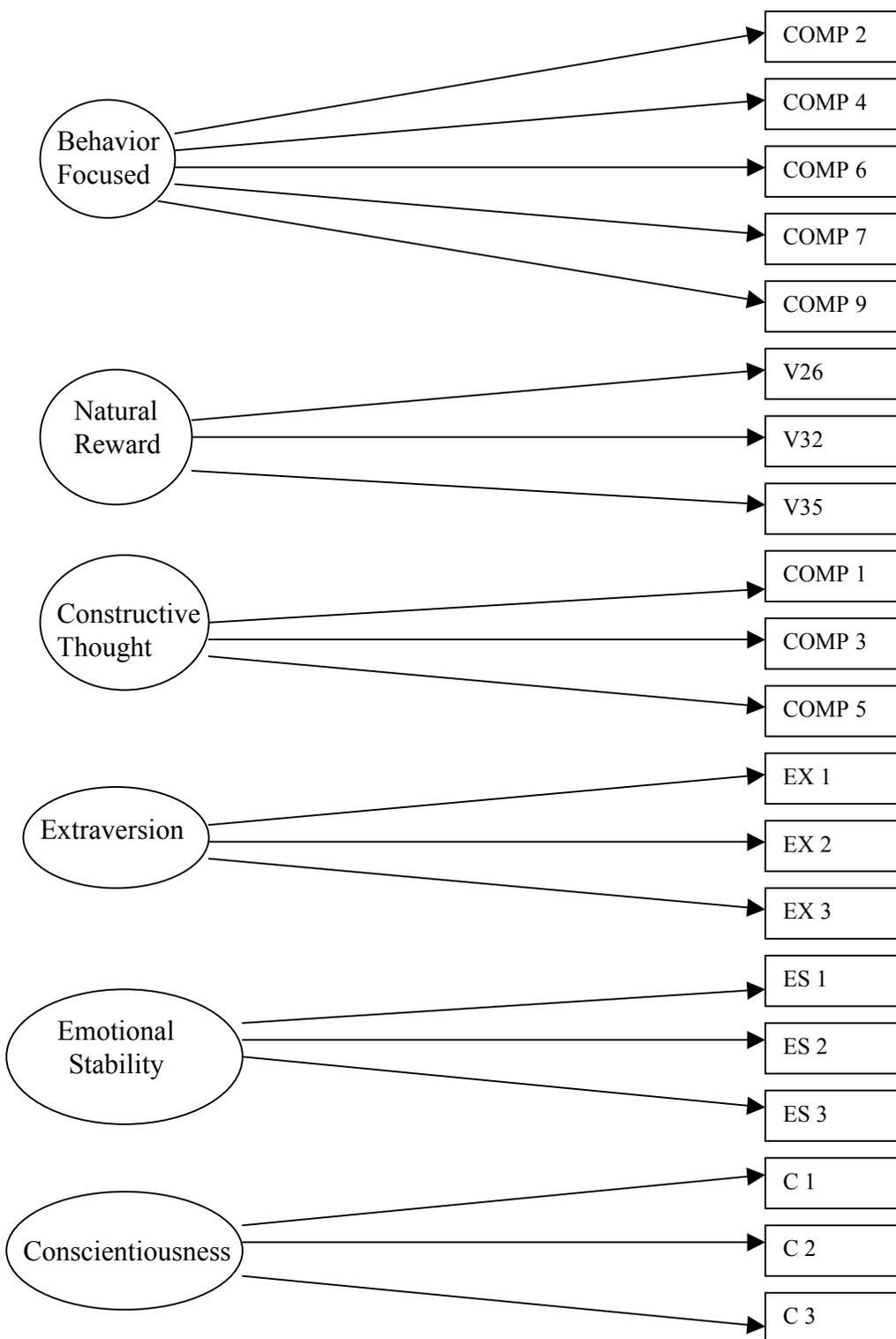
Figure 6. **Measurement model.**

Note. COMP 1 = Visualizing Successful Performance Item Composite, COMP 2 = Self-Goal Setting Item Composite, COMP 3 = Self-Talk Item Composite, COMP 4 = Self-Reward Item Composite, COMP 5 =

Evaluating Beliefs and Assumptions Item Composite, COMP 6 = Self-Punishment Item Composite, COMP 7 = Self-Observation Item Composite, COMP 8 = Natural Rewards Item Composite, COMP 9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ, EX 1-3 = Random Composites of Extraversion Items, ES 1-3 = Random Composites of Emotional Stability Items, C 1-3 = Random Composites of Conscientiousness Items.

Chapter 4: Results

The results of the analyses will be presented in this chapter. The results of the preliminary stage of analysis will be presented first in order to provide evidence of higher order factor structures for both self-leadership and personality. Next, the results of the primary stage of analysis comparing the hierarchical factor structures of self-leadership and personality will be presented.

THE HIERARCHICAL FACTOR STRUCTURE OF SELF-LEADERSHIP

Fit indexes for the three self-leadership covariance structure models tested are shown in Table 2. As anticipated, the higher order factor model fit the data fairly well (χ^2 [41, N = 357] = 128.49, GFI = .94, NNFI = .88, IFI = .91, CFI = .91), demonstrating the best fit of the three models tested. By way of comparison, the one-factor model demonstrated significantly worse fit (χ^2 [44, N = 357] = 191.67, GFI = .91, NNFI = .81, IFI = .85, CFI = .85) than the hierarchical model, while the three uncorrelated factors model proved to be the worst fitting of the three models tested (χ^2 [44, N = 357] = 427.68, GFI = .82, NNFI = .50, IFI = .61, CFI = .60). In addition, χ^2 difference tests (Anderson & Gerbing, 1988; Bollen, 1989a) indicated statistically significant χ^2 differences between each of the three models. Accordingly, the higher order factor model was retained as the best fitting self-leadership model. The standardized solution for the higher order factor model of self-leadership is shown in Figure 7 with measurement error effects omitted for clarity.

Model	χ^2	Df	GFI	NNFI	IFI	CFI	χ^2 difference	df
1. Higher Order Factor	128.49	41	.94	.88	.91	.91		
2. One-Factor	191.67	44	.91	.81	.85	.85		
Model 1-2 difference							63.18	3
3. Three-Factors	427.68	44	.82	.50	.60	.61		
Model 1-3 difference							299.19	3
4. Null	1019.9	55						

Table 2. **Fit Indexes for Self-Leadership Covariance Structure Models.**
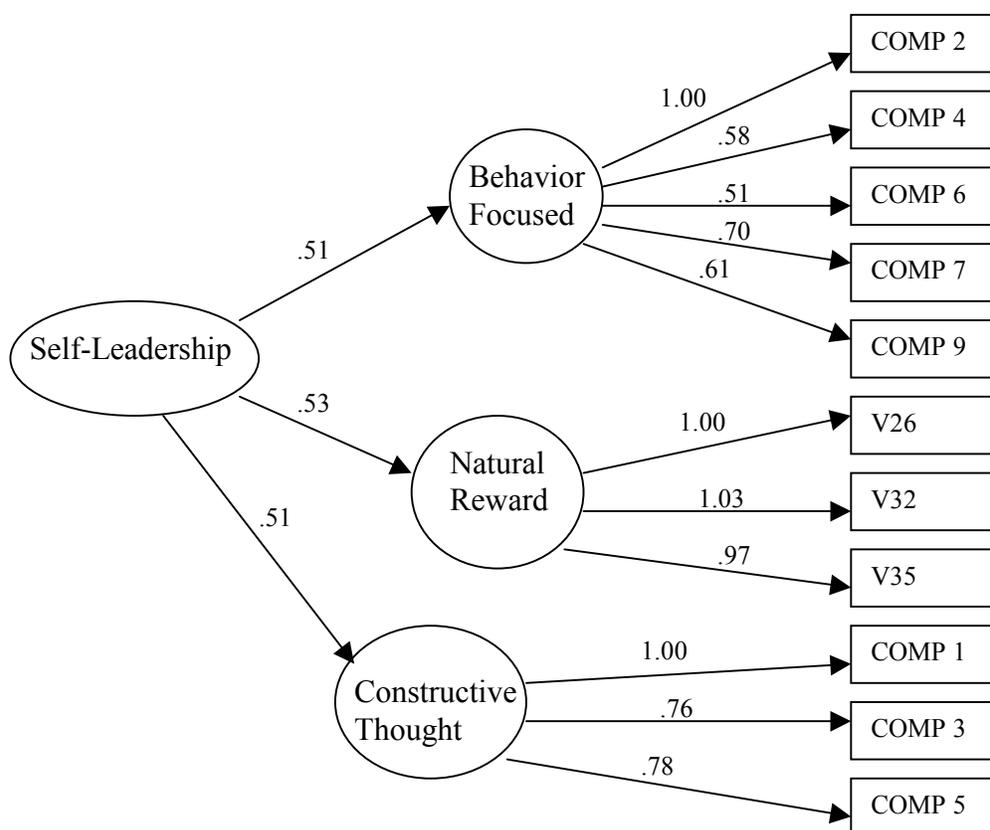
Figure 7. **Higher order factor model of self-leadership and its primary dimensions with standardized parameter estimates. All parameter loadings were significant at the $\alpha = .05$ level.**

Note. $N = 357$. COMP 1 = Visualizing Successful Performance Item Composite, COMP 2 = Self-Goal Setting Item Composite, COMP 3 = Self-Talk Item Composite, COMP 4 = Self-Reward Item Composite, COMP 5 = Evaluating Beliefs and Assumptions Item Composite, COMP 6 = Self-Punishment Item Composite, COMP 7 = Self-Observation Item Composite, COMP 8 = Natural Rewards Item Composite, COMP 9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ.

THE HIERARCHICAL FACTOR STRUCTURE OF PERSONALITY

Fit indexes for the three personality covariance structure models tested are shown in Table 3. Once again, as expected, the second order factor model fit the data quite well (χ^2 [24, N = 357] = 37.00, GFI = .98, NNFI = .98, IFI = .98, CFI = .98), demonstrating the best fit of the three models tested. In comparison, the three uncorrelated factors model demonstrated significantly worse fit (χ^2 [27, N = 357] = 61.26, GFI = .96, NNFI = .94, IFI = .96, CFI = .96) than the hierarchical model, while the one-factor model proved to be the worst fitting personality model tested (χ^2 [27, N = 357] = 389.12, GFI = .78, NNFI = .41, IFI = .56, CFI = .56). In addition, χ^2 difference tests (Anderson & Gerbing, 1988; Bollen, 1989a) indicated statistically significant χ^2 differences between each of the three models. Accordingly, the higher order factor model was retained as the best fitting personality model. The standardized solution for the higher order factor model of personality is shown in Figure 8 with measurement error effects omitted for clarity.

Model	χ^2	*Df*	GFI	NNFI	IFI	CFI	χ^2 difference	*df*
1. Higher Order Factor	37.00	24	.98	.98	.98	.98		
2. One-Factor	389.12	27	.78	.41	.56	.56		
Model 1-2 difference							352.12	3
3. Three-Factors	61.26	27	.96	.94	.96	.96		
Model 1-3 difference							24.26	3
4. Null	853.67	36						

Table 3. Fit Indexes for Personality Covariance Structure Models.
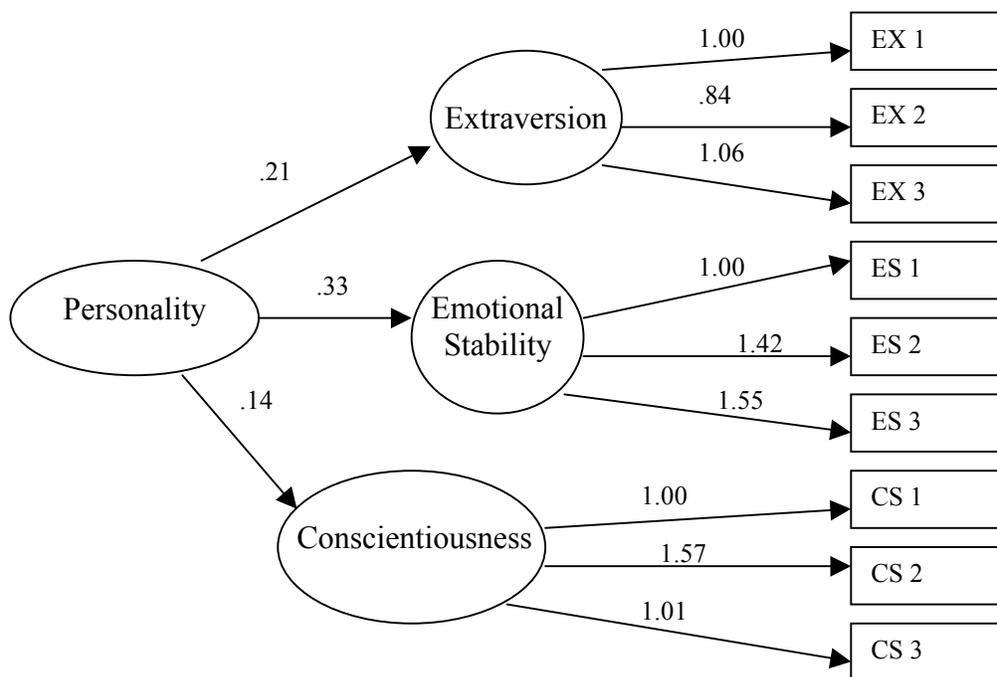
**Figure 8.** **Higher order factor model of personality with three first order factors. All parameter loadings were significant at the α = .05 level.**

Note. *N* = 357. EX 1-3 = Random Composites of Extraversion Items, ES 1-3 = Random Composites of Emotional Stability Items, C 1-3 = Random Composites of Conscientiousness Items.

COMPARISON OF THE HIERARCHICAL FACTOR STRUCTURES OF SELF-LEADERSHIP AND PERSONALITY

Given the evidence for a higher order factor structure for both self-leadership and personality, as demonstrated in the preliminary stage of analysis, the results of a comparison of these hierarchical structures will now be presented. The comparison was facilitated through an analysis of the covariance structures of the combined models summarized in Table 1. Descriptive statistics and intercorrelations among indicator variables are presented in Table 4. Fit indexes for the combined covariance structure models tested are shown in Table 5. As demonstrated in Table 5, fit for Models 1 through 4 improved significantly with each subsequent model. Fit for the one-factor model was relatively poor (χ^2 [170, N = 357] = 1168.74, GFI = .73, NNFI = .45, IFI = .51, CFI = .51). However, fit improved incrementally for both the two-factor model (χ^2 [170, N = 357] = 931.75, GFI = .77, NNFI = .41, IFI = .58, CFI = .63) and the six uncorrelated factors model (χ^2 [170, N = 357] = 839.89, GFI = .80, NNFI = .63, IFI = .67, CFI = .67). The higher order factor model, the best fitting of the four models, showed relatively good fit (χ^2 [163, N = 357] = 449.38, GFI = .89, NNFI = .84, IFI = .86, CFI = .86). Further, as shown in Table 5, χ^2 difference tests (Anderson & Gerbing, 1988; Bollen, 1989a) indicated that the differences between each of the four models were statistically significant. This improvement in fit from Model 1 to Model 4 shows discrimination between self-leadership factors and personality factors, thus providing support for Hypothesis 1 (i.e., self-leadership factors are distinct from Big Five personality factors). The standardized solution for the higher order factor model is shown in Figure 9 with measurement error effects omitted for clarity.

Indicator Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. C2	3.94	.675	----										
2. C4	3.99	.960	.252**	----									
3. C6	3.81	.862	.288**	.184**	----								
4. C7	4.04	.637	.577**	.219**	.360**	----							
5. C9	3.98	1.06	.319**	.137**	.151**	.124*	----						
6. V26	3.68	.976	.372**	.235**	.034	.225**	.139**	----					
7. V32	4.00	.895	.492**	.301**	.098	.400**	.241**	.461**	----				
8. V35	3.87	.917	.445**	.319**	.055	.225**	.152**	.454**	.418**	----			
9. C1	3.62	.816	.492**	.299**	.113*	.279**	.143**	.344**	.412**	.348**	----		
10. C3	4.04	.927	.296**	.129*	.145**	.189**	.191**	.190**	.183**	.256**	.385**	----	
11. C5	3.77	.698	.437**	.289**	.250**	.354**	.177**	.296**	.317**	.390**	.451**	.320**	----

Table 4. **Means, standard deviations, and intercorrleations between indicator variables.**

Note. *N* = 357. C1 = Visualizing Successful Performance Item Composite, C2 = Self-Goal Setting Item Composite, C3 = Self-Talk Item Composite, C4 = Self-Reward Item Composite, C5 = Evaluating Beliefs and Assumptions Item Composite, C6 = Self-Punishment Item Composite, C7 = Self-Observation Item Composite, C8 = Natural Rewards Item Composite, C9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ, EX 1-3 = Random Composites of Extraversion Items, ES 1-3 = Random Composites of Emotional Stability Items, C 1-3 = Random Composites of Conscientiousness Items; **p<.01 (two-tailed), *p<.05 (two-tailed).

Indicator Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
12. EX1	3.48	.843	.229**	.120*	-.126*	.108*	.090	.143**	.185**	.102	.165**	.086	.120*
13. EX2	3.56	.832	.328**	.292**	.067	.129*	.228**	.205**	.242**	.219**	.247**	.201**	.213**
14. EX3	3.69	.933	.229**	.160**	-.063	.081	.101	.135*	.119*	.101	.115*	.088	.082
15. ES1	3.32	.859	.040	-.093	-.209**	.064	-.054	.021	.055	.034	-.015	-.027	.055
16. ES2	3.39	.773	.106*	-.031	-.237**	.119*	-.088	.181**	.131*	.152**	.105*	-.014	.023
17. ES3	3.33	.959	.114*	-.012	-.182**	.041	-.024	.239**	.076	.093	.083	.029	.060
18. CS1	3.82	.641	.354**	.049	.137**	.361**	.182**	.097	.122*	.161**	.133*	.107*	.257**
19. CS2	3.84	.917	.302**	-.030	.076	.266**	.308**	.139**	.189**	.125*	.094	.058	.187**
20. CS3	3.89	.726	.301**	.044	.032	.315**	.141**	.143**	.221**	.122*	.023	.019	.199**

Table 4 (Continued). Means, standard deviations, and intercorrleations between indicator variables.

Note. N = 357. C1 = Visualizing Successful Performance Item Composite, C2 = Self-Goal Setting Item Composite, C3 = Self-Talk Item Composite, C4 = Self-Reward Item Composite, C5 = Evaluating Beliefs and Assumptions Item Composite, C6 = Self-Punishment Item Composite, C7 = Self-Observation Item Composite, C8 = Natural Rewards Item Composite, C9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ, EX 1-3 = Random Composites of Extraversion Items, ES 1-3 = Random Composites of Emotional Stability Items, C 1-3 = Random Composites of Conscientiousness Items; **p<.01 (two-tailed), *p<.05 (two-tailed).

Indicator Variable	M	SD	12	13	14	15	16	17	18	19	20
12. EX1	3.48	.843	----								
13. EX2	3.56	.832	.620**	----							
14. EX3	3.69	.933	.687**	.590**	----						
15. ES1	3.32	.859	.157**	.062	.156**	----					
16. ES2	3.39	.773	.165**	.074	.193**	.360**	----				
17. ES3	3.33	.959	.085	.030	.125*	.302**	.507**	----			
18. CS1	3.82	.641	.036	.009	.000	.098	.033	.088	----		
19. CS2	3.84	.917	.076	.038	.095	.121*	.075	.142**	.510**	----	
20. CS3	3.89	.726	.086	.051	.040	.145**	.221**	.245**	.395**	.429**	----

Table 4 (Continued). Means, standard deviations, and intercorrleations between indicator variables.

Note. $N = 357$. C1 = Visualizing Successful Performance Item Composite, C2 = Self-Goal Setting Item Composite, C3 = Self-Talk Item Composite, C4 = Self-Reward Item Composite, C5 = Evaluating Beliefs and Assumptions Item Composite, C6 = Self-Punishment Item Composite, C7 = Self-Observation Item Composite, C8 = Natural Rewards Item Composite, C9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ, EX 1-3 = Random Composites of Extraversion Items, ES 1-3 = Random Composites of Emotional Stability Items, C 1-3 = Random Composites of Conscientiousness Items; **$p<.01$ (two-tailed), *$p<.05$ (two-tailed).

Model	χ^2	Df	GFI	NNFI	IFI	CFI	χ^2 difference	df
1. One Factor Model	1168.74	170	.73	.45	.51	.51		
2. Two Factor Model	931.75	170	.77	.41	.58	.63		
Model 1-2 difference							236.99	0
3. Six Uncorrelated Factors Model	839.89	170	.80	.63	.67	.67		
Model 2-3 difference							91.86	0
4. Higher Order Factor Model	449.38	163	.89	.84	.86	.86		
Model 3-4 difference							390.51	7
4′. Higher Order Factor Model - Unity	449.74	164	.89	.84	.86	.86		
Model 4′-4 difference							.36	1
5. Six Correlated Factors Model	402.59	155	.90	.85	.88	.88		
6. Null Model	2224.50							

Table 5. **Fit indexes for combined self-leadership and personality covariance structure models.**
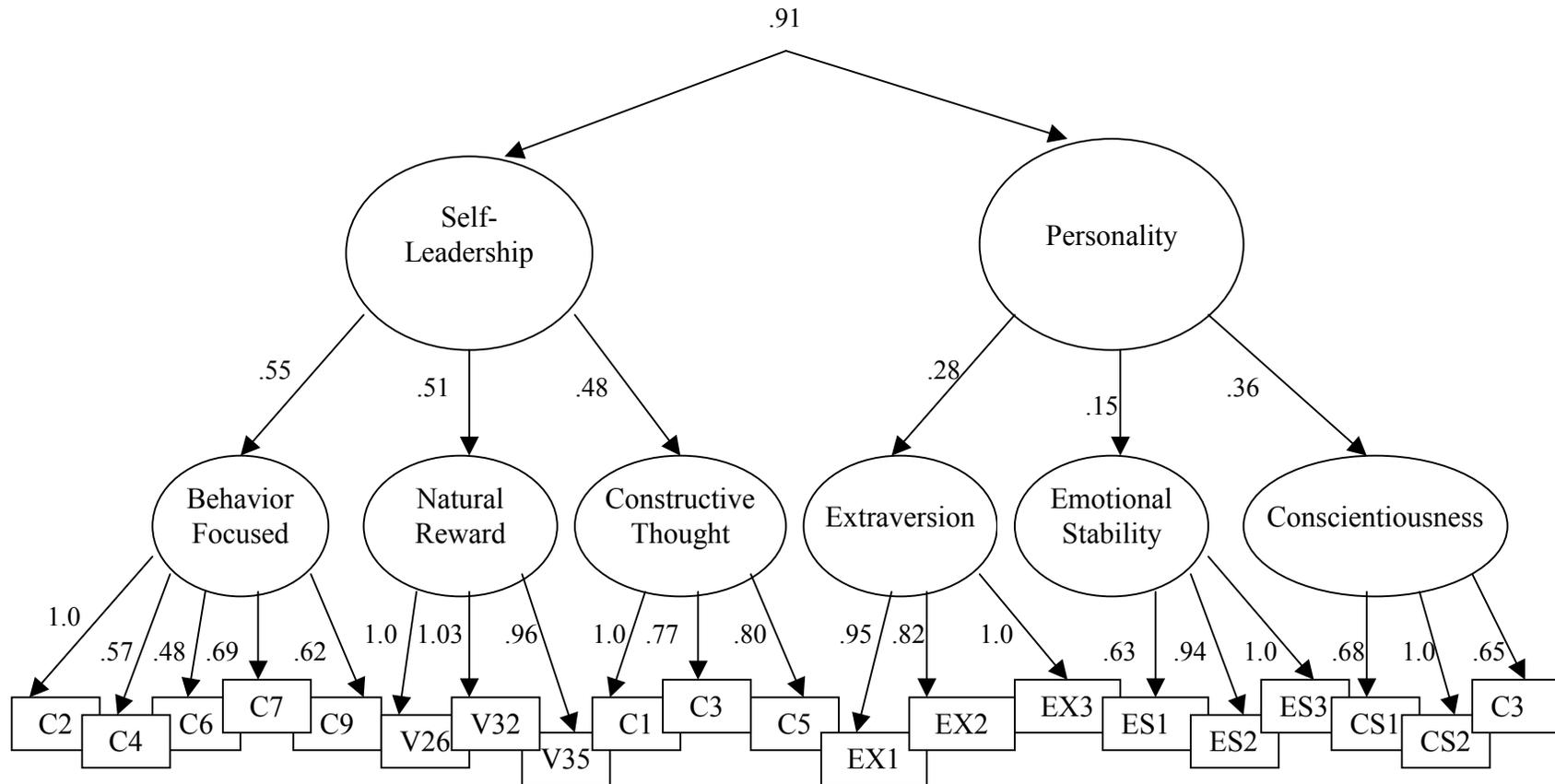
Figure 9. **Higher order factor model of self-leadership and personality with standardized parameter estimates. All parameter estimates were significant at the α = .05 level.**

Note. *N* = 357. COMP 1 = Visualizing Successful Performance Item Composite, COMP 2 = Self-Goal Setting Item Composite, COMP 3 = Self-Talk Item Composite, COMP 4 = Self-Reward Item Composite, COMP 5 = Evaluating Beliefs and Assumptions Item Composite, COMP 6 = Self-Punishment Item Composite, COMP 7 = Self-Observation Item Composite, COMP 8 = Natural Rewards Item Composite, COMP 9 = Self-Cueing Item Composite, V26 = Item 26 - RSLQ, V32 = Item 32 – RSLQ, V35 = Item 35 – RSLQ, EX 1-3 = Random Composites of Extraversion Items, ES 1-3 = Random Composites of Emotional Stability Items, C 1-3 = Random Composites of Conscientiousness Items.

A six correlated factors model (Model 5, Table 5) was also tested for the purpose of examining intercorrelations between the six latent factors. The intercorrelations between the latent factors (as calculated in the PHI matrix of the LISREL analysis) are presented in Table 6. As demonstrated in Table 6, intercorrelations were substantially higher within the self-leadership leadership factors (average correlation within self-leadership factors = .7533) than between the self-leadership and personality factors (average correlation between self-leadership and personality factors = .2867). This considerable difference in level of average correlation provides additional evidence of the distinctiveness of self-leadership and personality factors, thus providing support for Hypothesis 1.

Latent Factor	BF	NR	TP	EX	ES	C
BF	----					
NR	.75	----				
TP	.76	.75	----			
EX	.33	.29	.27	----		
ES	.11 *(ns)*	.28	.11 *(ns)*	.23	----	
C	.57	.33	.29	.09 *(ns)*	.26	----

Table 6. Intercorrleations between latent factors – six correlated factors model (PHI matrix).

Note. $N = 357$. BF = Behavior Focused Strategies Factor, NR = Natural Reward Strategies Factor, TP = Constructive Thought Processes Factor, EX = Extraversion Factor, ES = Emotional Stability Factor, C = Conscientiousness Factor; All intercorrelations were significant ($\alpha = .05$) except those labeled "*ns*."

The intercorrelations shown in Table 6 also provide support for Hypotheses 2 – 4. Specifically, the extraversion factor was significantly positively correlated with the behavior focused skills factor ($r = .33$), the natural reward skills factor ($r = .29$), and the constructive thought processes skills factor ($r = .27$). Thus, Hypothesis 2 (i.e., extraversion is positively related to behavior focused, natural reward, and constructive thought self-leadership skills) was fully supported across all three categories of self-leadership skills. The emotional stability factor was significantly positively correlated with the natural reward skills factor ($r = .28$), but was not significantly correlated with the behavior focused skills factor ($r = .11$) or the constructive thought processes skills factor ($r = .11$). Thus, Hypothesis 3 (i.e., emotional stability is positively related to behavior focused, natural reward, and constructive thought self-leadership skills) received only partial support. Finally, the conscientiousness factor was significantly positively correlated with the behavior focused skills factor ($r = .57$), the natural reward skills factor ($r = .33$), and the constructive thought processes skills factor ($r = .29$). Thus, Hypothesis 4 (i.e., conscientiousness is positively related to behavior focused, natural reward, and constructive thought self-leadership skills) was fully supported across all three categories of self-leadership skills.

Finally, the correlation between the two higher order latent exogenous factors (self-leadership and personality) in the higher order factor model (Model 4, Figure 9) was

unexpectedly high ($r = .91$). Indeed, the fit of a unity model (Model 4′) in which the correlation between self-leadership and personality was fixed at one, showed only slightly worse fit (χ^2 [164, N = 357] = 449.74, GFI = .89, NNFI = .84, IFI = .86, CFI = .86) than the higher order factor model (χ^2 [163, N = 357] = 449.38, GFI = .89, NNFI = .84, IFI = .86, CFI = .86). Further, as demonstrated in Table 5, the χ^2 difference (.36, $df = 1$) between the two models was not statistically significant. Thus, there is no evidence of discrimination between the two higher order factors (e.g., Pedhazur & Schmelkin, 1991; Widaman, 1985) and no additional indirect support is provided for Hypothesis 1. However, the highly significant correlation between the two second order factors does provide additional indirect support for Hypotheses 2-4.

SUMMARY

This chapter has presented the results of the current study's analyses. The chapter began by reviewing the results of the preliminary analyses examining the factor structures of both self-leadership and personality. As expected, a theoretically based higher order factor model of self-leadership showed significantly better fit than either a one-factor model or a three uncorrelated factors model. Likewise, a higher order factor model of personality also showed significantly better fit over competing one-factor and three uncorrelated factors models. Given this evidence supporting hierarchical factor models for both self-leadership and personality, the results of the primary stage of analysis comparing the hierarchical factor structures of self-leadership and personality were presented. The results showed that model fit significantly and incrementally improved in a progression from a one-factor model, to a two-factor, to a six uncorrelated factors model. As expected, a higher order factor model with six first order factors and two second order factors was the best fitting model. These results provide evidence of discrimination between self-leadership factors and dimensions thereby providing support for Hypothesis 1 (i.e., self-leadership factors are distinct from Big Five personality factors).

A six correlated factors model was also tested for the purposes of examining the intercorrelations among the factors. Results indicated significantly higher intercorrelations within the self-leadership factors than between the self-leadership factors and the personality factors, thus providing additional support for Hypothesis 1. The intercorrelations also provided full support for Hypothesis 2 (i.e., extraversion is positively related to the three self-leadership dimensions) and Hypothesis 4 (i.e., conscientiousness is positively related to the three self-leadership dimensions) but only partial support for Hypothesis 3 (i.e., emotional stability is positively related to the three self-leadership dimensions).

Finally, the correlation between the second order factors of self-leadership and personality was unexpectedly high. Indeed, no statistical distinction can be made between these higher order factors. This high correlation thus provides no additional indirect support of Hypothesis 1. However, the correlation does provide additional indirect support of Hypotheses 2 – 4.

Chapter 5: Discussion

After a brief summary of the findings presented in Chapter Four, this chapter will provide a detailed explanation and interpretation of these results. In addition, these findings will be integrated with previous self-leadership research in order to show the unique contribution of the present study to the general body of self-leadership literature. The implications of these findings for self-leadership theory, research, and practice will be reviewed, followed by a discussion of the limitations of the present study. Finally, directions for future self-leadership research will be suggested, both generally and in relationship to the findings of this study.

BRIEF SUMMARY OF FINDINGS

This study provided evidence that the self-leadership dimensions of behavior-focused strategies, natural reward strategies, and constructive thought strategies are distinct from, yet related to, the personality traits of extraversion, emotional stability, and conscientiousness. To be more specific, the hypothesis that self-leadership strategies are distinct from the selected personality traits was supported through an analysis of competing models combining self-leadership and personality. Model fit increased significantly through a progression of models that showed increasingly greater distinction between self-leadership dimensions and personality traits. The best fitting model in the progression, in harmony with both self-leadership and trait personality theory, consisted of a hierarchical factor structure with three first order self-leadership factors, three first order personality factors, and two correlated second order factors (i.e., self-leadership and personality). In addition, intercorrelations were greater within the self-leadership dimensions than between the self-leadership dimensions and the personality traits, thus providing additional evidence of differentiation. Although substantial evidence supports the distinctiveness of self-leadership factors and personality factors at the first level of the hierarchical model, the same does not hold true for the second order factors of self-leadership and personality. These factors were very highly correlated and statistically indistinct. Thus, while specific sets of self-leadership strategies, skills, and behaviors appear to be distinguishable from specific personality traits at lower levels of analysis, general self-leadership and personality factors appear indistinguishable at the higher level of abstraction.

Although the evidence indicates that self-leadership skill dimensions are unique with respect to personality traits, these results also suggest that self-leadership and personality factors are nevertheless significantly related. Specifically, both extraversion and conscientiousness were significantly related to all three self-leadership dimensions, while emotional stability was significantly related only to the natural rewards strategies dimension. In summation, the results of this study suggest that self-leadership represents a distinct constellation of strategies that are significantly related to certain key personality traits. In the following section, these results will be explained and interpreted in greater detail.

EXPLANATION AND INTERPRETATION OF FINDINGS

The results of this study suggest that self-leadership dimensions and personality traits are significantly related. As anticipated, the traits of extraversion and conscientiousness were significantly related to all three self-leadership strategy dimensions. However, the trait of emotional stability was significantly related only to the natural rewards strategies dimension. The significance of this relationship is not particularly surprising. It seems likely that those individuals who are high in emotional stability, that is, those who are well adjusted, content, satisfied, and happy, would be inclined to focus on the enjoyable or naturally rewarding aspects of a task or duty. It is surprising, however, that the correlation between emotional stability and constructive thought processes was not significant. It seems logical to suspect that those individuals low in emotional stability, that is, those characterized by anxiety, depression, vulnerability, insecurity, fear, and apprehension, would be rife with dysfunctional beliefs and assumptions, negative self-talk, and destructive mental images.

The results of this study also indicate that the three self-leadership strategy dimensions are distinct from the three personality traits at lower levels of abstraction, but that the general second order factors for self-leadership and personality are statistically indistinguishable. There are at least two possible explanations for these findings. The first explanation argues that a person's self-leadership tendencies and personality configuration cannot be separated and that so-called self-leadership dimensions are nothing more than behavioral manifestations of related personality traits. These behavioral manifestations and traits are distinct yet related indicators of a single second order factor of personality. Thus, according to this explanation, self-leadership is simply a repackaging of the behavioral manifestations of an individual's personality. In contrast, the second explanation suggests that these results would only be found for subjects who have never been exposed to self-leadership strategies. In the absence any formalized training or informal study of self-leadership strategies, the individual's self-leadership behaviors and level of self-leadership skills are shaped entirely by the individual's personality. However, after being exposed to self-leadership strategies, the individual's tendencies toward self-leading behaviors will become less dependent on the individual's personality configuration. Thus, according to this interpretation, self-leadership and personality could very likely be distinguished at the higher level of abstraction for a sample of individuals who have learned to apply self-leadership strategies beyond the influence of their personalities. Each of these explanations will be discussed critically and in greater detail in the following paragraphs.

The first possible interpretation of these results is that self-leadership's dimensions merely describe the behavioral manifestations of personality. According to this view, an individual's self-leadership tendencies and personality configuration are indistinct at the higher level of abstraction. Further, self-leading behaviors and related personality traits are distinct from one another at the lower level of analysis with the former being a behavioral reflection of the latter. Both function as indicators of the more abstract concept of personality. Thus, according to this explanation, behavioral manifestations of personality (indicated by behavioral self-ratings) and pure personality traits (indicated by single adjective self-ratings) serve as first level indicators of the single higher order factor of personality. Indeed, it could be argued that a hierarchical model with a single higher order factor, which is equivalent with the unity model (Model 4′, Table 1) discussed earlier, is superior to the two factor hierarchical model (i.e., Figure

5) due to greater parsimony. Given this explication, it would appear highly unlikely that exposure to the so-called self-leadership strategies would have any meaningful effect on either personality traits or related behaviors. Both traits and related behaviors should remain relatively stable across time and situation. While self-leadership training might have some minimal and insignificant effect on certain behaviors, self-leading behaviors are determined primarily by the individual's configuration of related personality traits. Thus, given this view of the results, self-leadership is at best an alternative and perhaps more "user friendly" way of explaining how individual personality manifests itself in behavior. At worst, self-leadership is a redundant and relatively useless concept.

While this interpretation is logical and harmonious with the findings of this study, it does not fit well with prior research evidence. The self-leadership literature generally describes self-leadership behaviors as being amenable to change (e.g., Manz, 1986, 1992a), while personality characteristics are generally viewed as relatively stable across both time and situation (e.g., Block, 1981; Conley, 1985; Costa & McCrae, 1994; McCrae & Costa, 1990). The efficacy of self-leadership strategies for shaping behaviors is clearly evidenced by the well-documented success of clinical psychology's behavioral and cognitive therapy for shaping various behaviors such as smoking cessation or the elimination of dysfunctional thought processes (e.g., Burns, 1980; Cautela, 1969; Ellis, 1962, 1977; Mahoney & Arnkoff, 1978, 1979; Mahoney & Thoresen, 1974; Thoresen & Mahoney, 1974). As outlined earlier, self-leadership strategies are deeply rooted in the theories of self-control, self-regulation, and social cognition, all of which have been shown effective in influencing and shaping behavior. More directly, self-leadership training has been shown to significantly impact both behaviors and thought processes (e.g., Neck & Manz, 1996b). In addition, Stewart et al. (1996) showed that individuals who scored low on the trait of conscientiousness improved their self-leadership behaviors more than their high conscientiousness peers. Clearly, the first explanation of the present study's results, as outlined above, is in conflict with a considerable amount of evidence showing that self-leadership strategies can and do influence behavior. Given this explanation's apparent incommensurability with existing research, a second plausible interpretation will now be considered in greater detail.

The second possible explanation is that a person's configuration of self-leadership tendencies is identical to that person's configuration of related personality traits before any exposure to self-leadership strategies, but potentially distinctive after exposure to self-leadership's principles. Within this interpretation, first order self-leadership factors represent behaviors, processes, and applied strategies and first order personality factors represent traits or characteristics (see Figure 5). These behaviors and traits are distinct by definition and are by no means considered as comparable or as existing at the same level of abstraction. Note that the combined hierarchical factor model (see Figure 5) is comprised of two *separate* and theoretically distinct hierarchical factor models. These first order factors simply serve as latent indicators of the two second order factors of personality and self-leadership in the two structures.

This interpretation further suggests that the second order latent factor of personality can be conceptualized as a configuration of specific traits, while the second order latent factor of self-leadership can be conceptualized as a configuration of tendencies to engage in various self-leadership behaviors or to apply certain self-leadership strategies. The behavior-focused, natural reward, and constructive thought strategies serve as indicators of a person's unique configuration

of self-leading tendencies (i.e., their "self-leadership") and the specific traits of extraversion, emotional stability, and conscientiousness serve as indicators of a person's unique configuration of traits (i.e., their "personality"). For individuals who have never been exposed to self-leadership concepts and strategies, the configuration of self-leading tendencies would be determined entirely by the individual's configuration of related personality traits. Thus, for individuals with no prior knowledge of self-leadership strategies, self-leadership behaviors will be shaped primarily by the related personality traits of extraversion, conscientiousness, and emotional stability operating through the two higher level configurations. Given a sample of subjects with no prior exposure to self-leadership, no statistically significant difference between self-leadership and personality would be expected at the higher level of abstraction.

However, once the sample participants have learned self-leadership skills and made application of self-leadership strategies, the correlation between the two second order factors is likely to decrease. Each individual's configuration of self-leading tendencies, now partially shaped by self-leadership training or self-study, will become less dependent on the configuration of related personality traits. Given a sample of subjects with significant exposure to self-leadership strategies, a statistically significant difference between self-leadership and personality at the higher level of abstraction is likely. Thus, this explication argues that the learning and application of self-leadership strategies can and does effect self-leadership behaviors over and above the effects of personality.

This interpretation is logical and consistent with the results of this study. The subjects in the present study had no prior exposure to self-leadership strategies. As would be expected, the current results showed no statistical distinction between self-leadership tendencies and personality at the higher level of abstraction. Furthermore, the lower level behaviors and traits were distinct, yet related, presumably through the higher level configurations of personality and self-leadership. This explanation also fits well with prior research findings. For instance, consistent with self-leadership theory and empirical research (e.g., Manz, 1986, 1992a; Neck & Manz, 1996b), this interpretation assumes that self-leading tendencies, processes, and behaviors can be shaped and changed. Most notably, this explanation fits very well with the findings of Stewart et al. (1996). It seems reasonable to speculate that those individuals in the Stewart et al. (1996) study who were low in conscientiousness also had weaker tendencies for engaging in self-leading behaviors prior to training. These individuals had the most to gain from the training and did in fact increase their self-leadership behaviors significantly more than those high in conscientiousness whose personalities predisposed them to naturally engage in self-leading behaviors prior to formal exposure to self-leadership concepts. Thus, this second explanation appears consistent with self-leadership theory, trait personality theory, prior empirical research, and the findings of the present study. Despite the apparent soundness of this interpretation, other plausible explanations for these findings may also exist. It is therefore impossible, based on these data alone, to unequivocally determine the veracity of this interpretation. Additional research is needed to further examine the validity of this conceptualization of the relationship between self-leadership and personality.

CONTRIBUTIONS AND IMPLICATIONS

The findings of this study make a valuable contribution to the self-leadership literature by helping to clarify the nature of the relationship between self-leadership and personality. The results of this study suggest that self-leadership and personality are indeed related, thus supporting the William's (1997) propositions that certain personality traits are associated with self-leadership skill dimensions. Furthermore, in contrast to the speculation of some theorists (e.g., Guzzo, 1998; Markham & Markham, 1995, 1998) that self-leadership is conceptually indistinct from certain personality dimensions, these results seem to indicate that self-leadership strategies and personality characteristics are discrete concepts. The evidence is particularly compelling at lower levels of abstractions in the comparison of self-leadership behaviors/applied strategies and specific personality traits. All analyses provided evidence of a clear distinction between these first level factors. It is important to note that most self-leadership and personality research takes place at this lower level of analysis. Thus, based on the results of this study, it seems advisable to view self-leadership behaviors and strategy application as separate entities from personality characteristics in behavioral research.

At the higher level of abstraction, the evidence of such a distinction between self-leadership and personality is less clear. Indeed, the results of this study indicated no statistical difference between the higher level factors of self-leadership and personality. Nevertheless, the interpretation outlined above, which suggests that the relationship of self-leadership and personality at this level of abstraction is dependent upon the individual's exposure to self-leadership strategies, seems more reasonable than simply assuming that self-leadership and personality are indistinct. Further, a reading of these results based on the premise that self-leadership and personality are distinct and that self-leading behaviors are malleable over and above the influence of personality is in much better agreement with previous research findings (e.g., Stewart et al., 1997). The question, however, is hardly resolved. Additional research is needed to further clarify the nature of these relationships.

This study also contributes to the self-leadership literature through the refinement and validation of a self-leadership measurement scale. Based on the results of both the pilot study and the present study, the Revised Self-Leadership Scale (RSLQ) appears to be a fairly reliable and valid measurement instrument that effectively reflects self-leadership theory in the assessment of self-leadership skills, behaviors, and cognition. By providing a psychometrically sound instrument for the measurement of self-leadership, the results of this study could be instrumental in the advancement of future empirical self-leadership research.

For example, the RSLQ could help researchers to better understand why and how self-leadership training impacts various outcome variables. Self-leadership training interventions currently found in the literature (e.g., Neck & Manz, 1996) show that self-leadership enhances various outcomes. However, these studies can at best only partially explain why and how the interventions impacted these dependent variables. Because no validated self-leadership instrument existed at the time of these interventions, researchers could only measure outcome-related proxy variables rather than the process variables themselves. By using the RSLQ as both a pre-test and post-test in future self-leadership training interventions, researchers will be able to ask key questions such as: "Was the impact of the training on performance accompanied by an

increase in the practice of self-leadership behaviors by the trainees?" As this example demonstrates, the RSLQ has significant potential to serve as a catalyst for future empirical research in the self-leadership domain.

The results reported here also have important implications for theorist, researchers, and practitioners. If self-leadership concepts are in fact distinct from personality concepts, as these findings seem to indicate, then self-leadership should be afforded a greater degree of attention and scrutiny among academic researchers and theorists. In other words, if self-leadership strategies have the ability to separately influence behavior and cognition apart from personality, then more empirical research should be focused toward better understanding the self-leadership process and its potential for application in various organizational settings. Further, to the extent that self-leadership concepts have efficacy above the influence of personality, then the value of self-leadership as a general organizational intervention is enhanced. To the contrary, if self-leading behaviors were nothing more than personality manifestations, then self-leadership training interventions would be of very little use to any organization. Thus, in providing evidence for the singularity of self-leadership relative to personality, the results of the current study imply that more attention should be given to self-leadership as the subject of academic research and as a potentially valuable organizational intervention.

While this study indicates that self-leadership is unique relative to personality, the findings also suggest that self-leadership and personality are nonetheless related in important ways. These relationships also have important implications. The positive relationship between the self-leadership strategy dimensions and select personality traits suggests that those high in certain personality traits are likely to have a natural inclination toward engaging in self-leading behaviors, while those low in certain traits are likely to be naturally ineffective self-leaders. This implies a tremendous potential for the targeting self-leadership training toward individuals with certain personality characteristics. For instance, a person with a configuration of traits consisting of low extraversion, low conscientiousness, and low emotional stability would also likely be low in self-leading behaviors. Such a person would very likely experience tremendous benefits from exposure to self-leadership strategies. Thus, using personality as a basis, organizations could target self-leadership training interventions toward those individuals who stand to gain the most. Because many companies gather Big Five personality data as part of the selection process, this information could be used as a cost effective and practical means of targeting employees who would gain the most from self-leadership training.

In contrast, employees already high in extraversion, conscientiousness, and emotional stability may already be naturally engaging in high levels of self-leading behaviors, despite their lack of formal exposure to self-leadership principles. For such individuals, self-leadership training might prove less effective. However, Stewart et al. (1997) found that even those high in conscientiousness increased their self-leading behaviors as the result of training, but significantly less than those low in conscientiousness. This suggests that people of all personality types may benefit from exposure to self-leadership strategies, though some types may benefit significantly more than others.

LIMITATIONS

Despite the important contributions and implications of these findings, this research is subject to certain limitations. These limitations include issues of internal validity, external validity, and measurement. The internal validity concern relates primarily to the question of causality. It is impossible to determine, based on these data and statistical techniques alone, the direction of causality for the observed relationships. For instance, it would be inappropriate based on these results alone, to conclude that conscientiousness causes more self-leadership behaviors. It is equally plausible, based on data alone, that engaging in more self-leadership behaviors causes a person to have higher levels of trait conscientiousness. Direction of causality must be inferred by underlying theory. In this case, both self-leadership and personality theory would suggest that higher levels of trait conscientiousness (relatively stable) could produce more self-leading behaviors (relatively malleable). Although arguments have thus been made supporting the possible direction of causality for the various relationships reported here, these arguments cannot be unequivocally substantiated on the sole basis of statistical test results.

Along the same lines, it is remotely possible that personality and self-leadership behaviors are not related at all. The relationships observed in these results could be spurious, with some unknown third variable affecting correlated levels of personality traits and self-leading behaviors. For example, childhood environmental contingencies could cause a person to both learn to engage in self-leadership behaviors and to develop related personality characteristics. The two may be related but the relationship may not be causal. Once again, beyond statistical correlation, underlying theory must be relied upon to provide evidence of causality.

Regarding the external validity of the present study, the sample of undergraduate students limits the generalizability of these results. This student sample was presumably relatively homogeneous in terms of age, race, ethnicity, and socio-economic background. However, as argued earlier, this sample of undergraduates seems as appropriate as any other large sample for the examination of the relationships between psychological and behavioral concepts. Nevertheless, future research should determine whether the results found here generalize across age, culture, language, occupation, organizations, and socio-economic status.

A final limitation of the present study concerns two measurement issues. First, the RSLQ is a relatively unproven scale with a limited amount of reliability and validity data. Although the RSLQ embodies the efforts of a long-term scale building process (cf. Anderson & Prussia, 1997), and although the results of both the pilot study and the present study indicate strong reliability and validity for the RSLQ, additional evidence must be accumulated to inspire full confidence in the RSLQ as an effective measure of self-leadership. If the RSLQ proves to be an ineffective measure of self-leadership, then the results of this study would be called into question.

Second, the results of this study are based entirely on self-report data. Both personality traits and self-leadership skills and behaviors were measured by self-report. Self-report data are subject to certain inherent weaknesses and limitations. Subjects' self-ratings can be adversely affected by unreliability, response set biases, social desirability biases, and reactivity to

measurement procedures. Thus, given these potential problems, the findings of this study should be viewed with some degree of caution. On the other hand, despite these inherent liabilities, self-report data are widely used in many aspects of social science research, particularly in the measurement of personality, cognition, and unobservable behavioral processes.

DIRECTIONS FOR FUTURE RESEARCH

There are many important directions in which self-leadership research should advance, both generally and in relationship to personality. Generally, self-leadership research should become more empirically oriented. Existing self-leadership literature has been largely theoretical and practitioner oriented, with only a handful of noteworthy empirical studies. Future empirical research should continue to assess the effectiveness of self-leadership as an organizational intervention (cf. Neck & Manz, 1996b). Future studies should also continue to clarify the precise processes and mechanisms through which self-leadership strategies impact performance outcomes (cf. Prussia, et al., 1998). In addition, future self-leadership researchers should strive to investigate the effects of self-leadership in relationship to specific organizational situations or problems. Finally, research should investigate whether any boundary conditions exist in for the application of self-leadership strategies based on a variety of potential organizational and individual contingencies (cf. Markham & Markham, 1998).

The RSLQ developed and presented here has the potential to be instrumental in advancing this type of empirical research. Much of this kind of research would require a reliable and valid scale for measuring self-leadership. Indeed, much of the existing empirical self-leadership research has been hampered by the lack of a psychometrically sound scale for the measurement of self-leadership. The RSLQ opens the door for new and exciting empirical research in the self-leadership domain that was impossible without a sound measurement scale. In addition, future empirical research employing the RSLQ can provide additional information concerning its reliability and validity. If the RSLQ's reliability and validity prove stable over a number of empirical studies, then the results of the pilot study and the present study will be substantiated and confidence in the RSLQ as an effective self-leadership measurement tool will be bolstered.

Future research should also continue to investigate the relationships between personality and self-leadership. In particular, future researchers should investigate the relationships between self-leadership and other personality characteristics of interest. While the present study took a relatively narrow focus, concentrating attention on only three personality traits, other traits or characteristics may also be related to self-leadership in meaningful ways. For example, Williams (1997) proposed relationships between self-leadership and general self-efficacy, self-esteem, locus of control, and self-monitoring. Further, self-leadership could conceivably be related to various other characteristics including the need for achievement (nAch), Type A/Type B orientation, and trait optimism. It is the task of future researchers to decide which, if any, of these possible relationships warrant further investigation.

Finally, future research should attempt to further clarify the results of the present study. Specifically, a study could be designed to test the veracity of the explanation presented earlier,

which suggested that a person's configurations of self-leadership tendencies and related personality traits are identical prior to exposure to self-leadership strategies, but potentially distinctive after exposure to self-leadership. This hypothesis could be tested through a self-leadership training effects study. Ideally, subjects would have no prior exposure to self-leadership strategies, either formally or informally. Self-leadership behaviors and personality traits would be assessed through the use of a pre-test administered before the start of the actual self-leadership training. Following procedures established in the current study, a two-factor hierarchical structure model could be tested for the pre-training sample.

Results similar to those found in the present study would be expected. Such results would consist of significantly correlated yet distinct first order factors and highly correlated and statistically indistinct second order factors. After a thorough and well-designed self-leadership training intervention (cf. Neck & Manz, 1996; Stewart et al., 1996), self-leadership behaviors/strategies and personality characteristics would be reassessed through a post-test administered at the completion of the training. Using data from the post-training sample, the procedures would be repeated and a two-factor hierarchical structure model would again be tested. If the correlation between the two second order factors lowers significantly and if the two higher order factors become statistically distinct, then evidence would be provided supporting the hypothesis that the relationship between self-leadership and personality configurations at the higher level of abstraction is dependent upon exposure to self-leadership principles.

Such findings would imply that prior to exposure to self-leadership strategies, self-leading tendencies are based entirely upon the configuration of relevant personality traits. Further, self-leadership training may foster the use of certain self-leadership strategies thus reshaping the configuration of self-leading tendencies for some individuals. Indeed, if self-leadership behaviors change substantially relative to unchanging levels of personality, then additional support would be given for the assertion that self-leadership behaviors are malleable while personality traits are relatively stable. In addition, if those lowest in the three personality traits showed the greatest gains in self-leadership behaviors following the training intervention, then speculation concerning the differential effects of self-leadership training as moderated by personality type would be supported. Finally, the effects of self-leadership training on the level of self-leading behaviors could be examined directly for the first time through the use of the RSLQ. Future empirical research such as this, designed to advance the understanding of self-leadership theory and its application, will help to emphasize the importance of self-leadership for the dynamic organizations of the 21st century.

SUMMARY

This chapter has presented a discussion of the findings of this research. After a brief summary of the results, two possible interpretations of the findings were presented. A case was made for the argument that self-leadership and personality may be indistinguishable at higher levels of abstraction before exposure to self-leadership, but distinct afterwards. This explanation appears to be more consistent with self-leadership theory, personality theory, past empirical research findings, and the results of this study than an alternative view. The implications and contribution of these findings were also discussed, along with certain limitations associated with

this research. Finally, directions for future research were outlined, both generally and specifically in relationship to the results of this study.

In summation, the findings of this study provide substantial evidence for the uniqueness of self-leadership relative to personality, particularly when comparing self-leadership behaviors and strategies to personality characteristics and traits. The distinctness of self-leadership relative to personality provides support for the assertion that self-leadership is a truly unique and valuable set of strategies that have the potential to influence behavior and cognition over and above the affects of personality. These results also suggest that self-leadership dimensions and personality characteristics are nevertheless related. These relationships have important implications for the application of self-leadership in the form of an organizational intervention. While people of all personalities are likely to benefit from self-leadership training, these relationships suggest that those with certain personality types may stand to gain substantially more from exposure to self-leadership. Self-leadership has tremendous potential as an organizational intervention as 21st century organizations become increasingly reliant upon the initiative of individual employees. The findings of this study, coupled the results of other empirical investigations examining the effectiveness of self-leadership applications in modern organizations, past and future, should help to demonstrate self-leadership's remarkable and unique potential.

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<u>Appendix A.</u> Revised Self-Leadership Questionnaire (RSLQ) and the Saucier (1994) 40-Adjective Unipolar Mini-Markers Big Five Instrument combined in the form of an in-class self-assessment exercise.

PART 1 INSTRUCTIONS: Read each of the following items carefully and try to decide how true the statement is in describing you. Mark your choice for each answer on your opscan form. **DO NOT MARK YOUR ANSWER ON THIS FORM!**

	Not at all Accurate	*Somewhat Accurate*	*A little Accurate*	*Mostly Accurate*	*Completely Accurate*
	1	2	3	4	5

1. I use my imagination to picture myself performing well on important tasks.

2. I establish specific goals for my own performance.

3. Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.

4. When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy.

5. I think about my own beliefs and assumptions whenever I encounter a difficult situation.

6. I tend to get down on myself in my mind when I have performed poorly.

7. I make a point to keep track of how well I'm doing at work (school).

8. I focus my thinking on the pleasant rather than the unpleasant aspects of my job (school) activities.

9. I use written notes to remind myself of what I need to accomplish.

10. I visualize myself successfully performing a task before I do it.

11. I consciously have goals in mind for my work efforts.

12. Sometimes I talk to myself (out loud or in my head) to work through difficult situations.

13. When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.

14. I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.

15. I tend to be tough on myself in my thinking when I have not done well on a task.

	Not at all Accurate	Somewhat Accurate	A little Accurate	Mostly Accurate	Completely Accurate
	1	2	3	4	5

16. I usually am aware of how well I'm doing as I perform an activity.

17. I try to surround myself with objects and people that bring out my desirable behaviors.

18. I use concrete reminders (e.g., notes and lists) to help me focus on things I need to accomplish.

19. Sometimes I picture in my mind a successful performance before I actually do a task.

20. I work toward specific goals I have set for myself.

21. When I'm in difficult situations I will sometimes talk to myself (out loud or in my head) to help me get through it.

22. When I have successfully completed a task, I often reward myself with something I like.

23. I openly articulate and evaluate my own assumptions when I have a disagreement with someone else.

24. I feel guilt when I perform a task poorly.

25. I pay attention to how well I'm doing in my work.

26. When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with.

27. I purposefully visualize myself overcoming the challenges I face.

28. I think about the goals I that intend to achieve in the future.

29. I think about and evaluate the beliefs and assumptions I hold.

30. I sometimes openly express displeasure with myself when I have not done well.

31. I keep track of my progress on projects I'm working on.

32. I seek out activities in my work that I enjoy doing.

33. I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge.

34. I write specific goals for my own performance.

35. I find my own favorite ways to get things done.

PART 2 INSTRUCTIONS: Please use this list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly your same age.   Continue marking your choices for each answer on your opscan form.
DO NOT MARK YOUR ANSWER ON THIS FORM!

	Not at all *Accurate*	*Somewhat* *Accurate*	*A little* *Accurate*	*Mostly* *Accurate*	*Completely* *Accurate*
	1	2	3	4	5

36. Bashful

37. Bold

38. Careless

39. Cold

40. Complex

41. Cooperative

42. Creative

43. Deep

44. Disorganized

45. Efficient

46. Energetic

47. Envious

48. Extraverted

49. Fretful

50. Harsh

51. Imaginative

52. Inefficient

53. Intellectual

54. Jealous

55. Kind

56. Moody

57. Organized

58. Philosophical

59. Practical

60. Quiet

61. Relaxed

62. Rude

63. Shy

64. Sloppy

65. Sympathetic

66. Systematic

67. Talkative

68. Temperamental

69. Touchy

70. Uncreative

71. Unenvious

72. Unintellectual

73. Unsympathetic

74. Warm

75. Withdrawn