This is to certify that the

dissertation entitled

Personality Factors, Defense Mechanisms, and Social Support: A Hierarchical Structural Model

presented by

Stephen Bruce Kincaid

has been accepted towards fulfillment of the requirements for

Ph.D degree in Psychology

Major professor

Date February 17, 1994

PERSONALITY FACTORS, DEFENSE MECHANISMS, AND SOCIAL SUPPORT: A HIERARCHICAL STRUCTURAL MODEL

By

Stephen Bruce Kincaid

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1994

ABSTRACT

PERSONALITY FACTORS, DEFENSE MECHANISMS, AND SOCIAL SUPPORT: A HIERARCHICAL STRUCTURAL MODEL

by

Stephen Bruce Kincaid

A hierarchical structural model of the relationship between the Big Five personality traits (operationalized by the NEO-PI-R), defense mechanisms (operationalized by the Defense Mechanisms Inventory), and social support (operationalized by the Norbeck Social Support Questionnaire) was examined in a sample of 289 undergraduate students. Confirmatory factor analyses examined the psychometric properties of the NEO-PI-R and the DMI; subsequent revisions greatly improved the factors, and resulting coefficient alphas ranged from .84 to .88 for the NEO-PI-R and .59 to .82 for the DMI. ANOVAs found scales **N** ($F[1,285] = 26.4$; $p < .001$), **E** ($F[1,285] = 22.9$; $p < .001$), **O** ($F[1,285] = 5.4$; $p < .05$), and **A** ($F[1,285] = 6.4$; $p < .05$) of the NEO-PI-R, scales **PRO** ($F[1,274] = 29.6$; $p < .001$), and **TAS** ($F[1,274] = 57.3$; $p < .001$) of the DMI, and the Total Social Support Score ($F[1,287] = 8.0$; $p < .01$) derived from the NSSQ all varied with gender; thus, gender was incorporated into the model. Twelve of 15 specific hypotheses regarding the relationship of personality traits to defense mechanisms were supported, and three of five specific hypotheses regarding the relationship of defense mechanisms to social support were supported. High intercorrelations were found of DMI scales; a second-order factor analysis revealed two related (-.56), labelled

"internalizing" and "externalizing" defensive styles, and these were incorporated into the model prior to path analyses.

Although the majority of the hypotheses about the intercorrelations of personality, defense mechanisms, and social support were in the correct direction and statistically significant, there were significant differences between the hypothesized structural model and the observed data (Chi-square = 133.54; df = 19; $p < .001$); the largest errors involved the intercorrelations of scales of the revised NEO-PI-R. A second-order factor analysis of the revised NEO-PI-R scales revealed two related factors (-.18), which were also labelled "internalizing" and "externalizing" personality styles. These factors were incorporated into the revised structural model, and specific linkages in the model were revised. Using path analysis, the revised structural model was found to fit the observed data (Chi-square = 9.24; df = 5; $p <$ ns); individual analyses of construct linkages and missing linkages further suggested that the model was an accurate representation of the data obtained.

ACKNOWLEDGEMENTS

I would like to thank my Dissertation Committee for the thorough and thoughtful attention they provided as this project proceeded; their criticism, insights, and suggestions contributed to all aspects of my work. Dr. Norman Abeles, Committee Chairperson, patiently steered the dissertation through several incarnations, assisting in both the conceptualization of the hierarchical model, the specific hypotheses proposed, and the integration of the results. Dr. Ralph Levine was instrumental in my assimilation and utilization of the sophisticated statistical methodology necessary to adequately test the model, and guided revisions to the model following the second-order factor analyses. Dr. John Hurley and Dr. Dozier Thornton critically reviewed versions of the dissertation at several stages, and provided excellent direction regarding the theoretical background, the specific hypotheses proposed, and the construction of the model. Although not a member of the dissertation committee, Dr. John Hunter gave generously of his own time to work with me on the statistical programs used during the analyses. Finally, Lauren, Adam, and Jordan were patient, supportive, and encouraging throughout the completion of both this dissertation and the clinical program as a whole.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

"Personality" is an often used term to describe the mechanism of control of human behavior. Within both theoretical and empirical psychology, personality is often invoked as a causal explanation for individual differences in behavior. Despite being widely used, the concept of personality is difficult to define, and a single, universal theory has not found acceptance. Allport (1937) suggested that personality referred to the integration of all behaviors and tendencies that characterize an individual's orientation to the environment. Guilford (1959) saw personality as a constellation of traits. Maddi (1980) described personality as the commonalities and differences between individuals in their thoughts, feelings and action that are independent of social and biological contexts.

Over the past decade there has been "an electrifying burst of interest in the most fundamental problem [of personality research] - the search for a scientifically compelling taxonomy of personality traits" (Goldberg, 1993; p. 26). Such interest has led to the refinement of the five-factor theory of personality, or the Big Five. This theory, an increasingly accepted model of personality (Buss, 1991; Costa & McCrae, 1992; Digman and Inouye, 1986), is derived using factor analytic techniques in efforts to identify a relatively small number of stable, enduring dimensions that can be used as a means of explaining larger numbers of more transient, situational dimensions

in human behavior. Although there are other factor-analytically derived models, analyses which identify five factors (discussed below) have been recurrent and replicated.

Recent studies have begun to explore how personality traits, such as those of the five-factor theory, may be associated with both intrapersonal and interpersonal processes. Intrapersonal processes are those which occur within the individual; interpersonal processes are those which occur between individuals. This study, following a review of the current literature, proposes and examines a hierarchical model of the relationship of the five-factor theory of personality to defense mechanisms (as a mode of intrapersonal behavior) and to social support (as a mode of interpersonal behavior).

Theoretical Approaches To Personality

The most widely known personality theory was developed by Sigmund Freud. Freud's personality theories, developed concomitantly with his theories of psychoanalysis, attempted to provide causal explanations for the symptom presentations he saw in his patients. Over the course of his writings, Freud proposed two theories of personality. Freud's (1920) first explanatory theory, often called the topographical theory, focused on the instinctual nature of human behavior. Freud proposed that human behavior was impacted on by instincts at three levels of awareness: conscious, preconscious, and unconscious. In this theory, thoughts, feelings and instincts which are at the conscious level are fully accessible to the awareness and experience of the individual; thoughts, feelings and instincts at the

preconscious level are those that, although not immediately accessible, can be brought into awareness and experience by the individual; thoughts feelings and instincts at the unconscious level are those which are not immediately accessible and can not be brought into awareness and experience at will by the individual. Human behavior, in this theory, was a combination of instincts, thoughts and feelings at all three levels, and to fully understand a person's behavior the unconscious motivations as well as the conscious motivations must be understood.

Freud soon found that there were conceptual problems with his topographical theory concerning the role of affects other than anxiety (for example, guilt and paranoia). Thus, Freud expanded his model and developed the structural theory of personality (Freud, 1923), which divides the mind into three forces which traverse the conscious, the preconscious and unconscious. This theory posed that personality arises from the interplay or dynamics between three internal forces: primitive or infantile desires and wishes, an internalized social value system, and a sense of reality and the self. These forces were metaphorically represented as the id, superego and ego, respectively. An integral component of the structural theory was the concept of drives. Arising from the id, drives were described as an energy source (Freud, 1905), a mixture of psychic and somatic demands. These drives are can be understood as an incorporation of aspects of his earlier instinctual theory (Freud, 1915). Greenberg and Mitchell (1983) noted that these drives represented the most fundamental human passions and urges, and as such, were at once both the mechanism and the content of the mind. Freud (1926) theorized that all drives press for discharge, that is, for expression. However, the expression of drives, and often

even awareness of drives, could be in opposition to the unique set of internalized values and morals represented by the superego. Thus, the ego must integrate both the impulsive demands of the id and the inhibitory demands of the superego (Freud, 1923), and the characteristic manner in which it does so was described as "personality" or "style."

The Freudian view is not the only theoretical approach to personality, though it was not until the early portion of this century that a body of knowledge began to develop centered around the new concept of "personality" (Burnham, 1968). Behaviorism, or learning theory, essentially rejects the existence of personality by positing that behavior is modified and maintained through its consequences (Skinner, 1938; Watson, 1930). Thus, the development of personality is largely determined by the manner in which the environment reacts to the behavior (Phares, 1984). Phenomenological theories of personality (Kelly, 1955; Rogers, 1961) do not focus on the interplay between hypothesized psychic structures and the integration of instincts and drives but on the characteristic manner in which a person perceives, experiences, and feels. In this view, the development of personality is largely determined by the manner in which the environment is perceived by the individual (Phares, 1984). Social learning theories of personality (Bandura & Walters, 1963; Mischel, 1973; Rotter, 1982) generally focus on both cognitive and environmental factors, including expectancies, reinforcement saliency, motivation, and observation. Thus, the development of personality (though not likely to be defined as such) is interactional (Phares, 1984).

Empirical Approaches To Personality

Interest in personality does not reside solely within theoretical domains. While the variety of human characteristics ascribed to personality is great, empirical efforts have been made to impose order and organization. These efforts, typically based on factor analytic methodology, attempt to separate the global concept of personality into specific, orthogonal dimensions. Such an approach assumes that human behavior is consistent across time and context, a view not universally embraced. The "trait" hypothesis versus "state" hypothesis argument is woven throughout empirical psychology, and is central to the study of personality structure (Wiggins & Pincus, 1992). "State" theories of personality typically posit that there is situational specificity to human behavior, with few identifiable tendencies, and that human behavior is ultimately derived from environmental forces. "Trait" theories of personality typically posit that human behavior shows generalized tendencies, predispositions, and consistencies, and that human behavior is ultimately derived from internal forces understood as "personality."

While this argument is ongoing, of interest to this study are factor-analytically derived trait models of personality. Such models provide a manageable number of factors, or building blocks, from which behavior can be described and understood. These models attempt to hierarchically organize the multitude of variables of human differences; each identified factor may incorporate "hundreds, if not thousands, of traits" (Goldberg, 1993; p. 27). In an early empirical study of traits, Cattell (1943; 1947) used factor analysis to empirically derive over 35 bipolar dimensions of personality, of which he ultimately reported 12 oblique factors (Peabody & Goldberg,

1989). Cattell first used peer ratings of college students, then later used both questionnaire and objective test data in his factor analytic studies (Digman, 1990). Partly inspired by Cattell's work, subsequent (and more sophisticated analyses) soon identified five replicable factors, which have come to be known as the "Big Five" personality theory or the "five-factor model" (Norman, 1963; Tupes & Christal, 1992; Note: Tupes and Christal originally published their findings in 1961. However, this report appeared in an Air Force manual with limited accessibility, and most researchers have had to rely upon secondary sources to report their findings. Recently, their original report was reprinted in the Journal of Personality. Because of the greater distribution and accessibility of this journal, it is the citation used here).

The five-factor model of personality. The five-factor model of personality (alternatively known as the Big Five) has consistently been identified in empirical studies of personality (Costa & Oliver, 1992; Digman and Inouye, 1986) and provides "a good deal of the most important information one might expect to gather in order describe an individual's personality" (McAdams, 1992, p. 331). Although the labels for these factors have not been universally accepted, the five factors generally assess dimensions of Power, Love, Work, Affect and Intellect (Peabody & Goldberg, 1989). Cattell (1943) and Norman (1963) are often cited as proximate influences of the modern five-factor theory. However, Goldberg (1993) has traced the history of the five-factor model to more distal influences, including Sir Frances Galton, who attempted to estimate and categorize the number of terms in the English language capable of describing personality. Descriptive terms of personality were chosen as a starting point for analysis because of the assumption that important characteristics of

personality would naturally be represented and encoded within language (Goldberg, 1993; Peabody & Goldberg, 1989). L. L. Thurman, working approximately 50 years after Galton, applied pioneering factor analytic techniques to adjectives used for describing people, and identified five independent factors (Thurstone, 1934), though Goldberg suggested that his broad selection of adjectives used to describe the factors disqualified identifying him as the discoverer of the five-factor theory as currently understood. Instead, Goldberg points to Donald Fiske, who analyses led him to label the five factors as (I) Confident Self-Expression, (II) Social Adaptability, (III) Conformity, (IV) Emotional Control, and (V) Inquiring Intellect (Fiske, 1949; cited in Goldberg, 1993). However, Fiske apparently did not follow up further on these findings, and is subsequently displaced as an "accidental discoverer" in Goldberg's family tree. The "true fathers" are Cattell (1943) and Tupes and Christal (1992), as both were the first to initiate and sustain research efforts toward describing a factorial model of personality (Goldberg, 1993).

Not all investigators within the trait theory of personality embraced the concept of five distinct factors. Norman (1963), an early critic of the model, believed that the lack of computational resources limited earlier research from identifying more than five factors, and proposed that as such limitations were overcome, additional factors would be uncovered; this premise, however, was later tested and rejected (Goldberg, 1990). Others proposed that five factors was more than was needed to explain personality adequately. For example, Eysenck (1960) used factor analysis to propose a personality model containing two orthogonal, bipolar dimensions, with one axis representing extraversion-introversion and one axis representing stability-instability.

Circumplex models have been proposed by Leary (1957), Benjamin (1974), and Wiggins (1979), with dimensional bipolar scales of "affiliation" and "dominance" being the common anchors for the axes of the circumplex (Wiggins, 1982).

Despite divergence in views, the initial findings in trait studies of personality were encouraging. However, the Zeitgeist of personality theory changed during the 1960s as "state" research seemed to indicate that situational factors were more predictive of behavior than personality factors (Digman, 1990). Mischel (1968) even asserted that behavior was so variable and state-dependent that it was wrong to utilize constructs such as "personality". During this era, there was a diminished enthusiasm for factor analytic models of personality, especially as some researchers claimed that the five factors could be identified simply from semantic similarities among the items loading onto each factor (Borkenau, 1988); this led to the concern that the traits measured by factor analytic studies resided primarily in the rater.

Over the past decade, however, there has been a substantial increase in the empirical support for the influence of pervasive individualistic traits. Numerous researchers, using oblique rotations on widely varied data sets, have reported identifying a five-factor solution similar those initially described during 1960s (Digman & Inouye, 1986; Piersma, 1986; McCrae & Costa, 1987). Stepping outside of academic, empirical terminology, Goldberg (1981) noted that these factors provide information on five basic questions about a person: (1) Is the person active and dominant or passive and submissive?; (2) Is the person warm and pleasant or cold and distant?; (3) Is the person responsible and conscientious or undependable and

negligent?; (4) Is the person stable or crazy?; and, (5) Is the person oriented toward intellectual pursuits or not?

Much of the recent revival of interest in the five-factor model has been led by the research of Costa and McCrae, which Goldberg (1993) believes "did more to form the modern consensus about personality structure than anything else that occurred during the 1980s" (p. 31). In their early work, Costa and McCrae (1976) identified two factors (which they labelled "extraversion" and "neuroticism") underlying the 16 PF, Cattell's inventory of personality assessment, both of which could be explained by earlier empirical efforts. They also identified a third factor (which they labelled "openness"). Since the 16 PF did not provide a good measure for the third factor, they developed the NEO, or the "Neuroticism-Extraversion-Openness Personality Inventory." Responding to the work in the early 1980s of Digman and Goldberg (Goldberg, 1993), Costa and McCrae (1985) subsequently transformed their three-factor personality questionnaire into a five-factor questionnaire by adding scales to reflect the dimensions of "agreeableness" and "conscientiousness" (Costa & McCrae, 1985; Costa & McCrae, 1986); these factors will be discussed further below. According to Costa & McCrae (1992) the Big Five "represent the most basic dimensions underlying the traits identified in both natural languages and psychological questionnaires" (p. 14).

Research on the five-factor model has extended beyond identifying factors underlying personality assessment questionnaires. Analyses have found the five-factor model to be robust across time, context, and type of analysis (Buss, 1991). The five-factor model adequately accounts for earlier findings about the Dominance and

Warmth dimensions of the Interpersonal Circumplex (McAdams, 1992) The model has been identified in longitudinal studies of children (Digman, 1989) and in evaluations of adolescent adjustment as assessed by both teachers and school counselors (Graziano & Ward, 1992). Meta-analytic studies of personnel selection techniques have found that job performance can be associated with a five-factor model (Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991). A five-factor model was found in lists of German adjectives (Ostendorf, 1990), as well as in Japanese (Bond, Nakazato, & Shiraishi, 1975) and Chinese (Yang & Bond, 1990). Buss (1991; 1992) has theorized the evolutionary advantages of developing these five facets of personality, and has identified interpersonal tactics associated with different factors. In fact, studies have so consistently replicated the findings of a five-factor model that Digman and Inouye (1986) argued support was "consistent enough to approach the status of law" (p. 116). Proponents of the five-factor model now argue that the majority of all measured personality constructs can be interpreted as representing one or more of the factors in the Big Five model (Digman, 1990).

This does not mean the theory has no critics. Goldberg (1993), in a review, found arguments for both fewer and more than five factors. Further, Waller and Ben-Porath (1987) have argued that the five-factor model was accepted too quickly, as Cattell's original work has simply been replicated rather than subjected to conceptual testing. More recently, McAdams (1992) outlined a comprehensive and severe criticism of the Big Five on a theoretical level. McAdams noted that the five factors were derived from lexical studies without a priori hypotheses, and thus, given the subjective nature of interpreting factor analyses, do not represent a solid basis for

scientific inquiry. McAdams is also critical of the atheoretical nature of the five-factor model, noting that the five factors are at best dimensions of the periphery in personality rather than dimensions of the core (Note: The argument regarding periphery and core dimensions of personality lies outside the scope of this study. In brief, McAdams [1992] reviewed and drew on the concepts of Maddi [1980], who delineated periphery dimensions from core dimensions of personality. Periphery dimensions include trait constructs which can be used to identify particular individuals, while core dimensions include constructs which deal with basic, fundamental personality organization. Within Freudian theory, McAdams noted that the id, ego and superego would be examples of core dimensions while oral and anal personality types would be periphery dimensions.). Because the five-factor model, according to McAdams, does not address the basic nature of personality organization, it can never be a complete theory. McAdams, drawing on the work of Revelle (1987), questioned whether the five factors are actually a causal taxonomy, and suggests that they may be only a descriptive taxonomy, and being conceptualized as independent dimensions, lose sight of the person who holds the personality (c.f., Carlson, 1971). Finally, he raised issues about the specificity of information generated by tools assessing the Big Five. McAdams noted that by using a five-point Likert scale, subjects are asked both to generalize their experience into broad categories and to remove situational or contextual aspects. He further noted that inherent in the process of rating oneself is a comparison of oneself to other people; thus, he believed the utility of the five factors to be limited by the breadth of interpersonal experience of the subject. McAdams concluded that the Big Five

represent an important and positive development in personality theory, but is not the definitive, integrative theory of personality as is often claimed.

Proponents of the five-factor model have responded to such criticisms. McCrae and Costa (1984) noted that while contextual, situational aspects of life may change the way in which traits are expressed, the traits themselves remain unchanged. Peabody and Goldberg (1989), in response to criticisms that the strength of support for the five factors varied across studies, identified three determinants of differences between studies: (a) the selection of variables for inclusion in analyses, (b) whether analyses were done on conceptual relationships between variables or on actual measured differences, and (c) the degree of restriction imposed on the sample to create a homogeneous sample. Further, they examined differences in the factor structure of recent studies of the Big Five and found that clearly identifiable variations of the Big Five personality factors were always found, particularly for factors II (Agreeableness), III (Conscientiousness), and I (Extraversion). After a review, Wiggins and Pincus (1992) found that the five-factor model has been generalized across data sets sufficiently different from those utilized by Cattell, so that the theory may be considered independently replicated. Pincus (1992) argued that the comprehensive nature of the five-factor personality structure has been demonstrated by the consistent results found across four major theoretical perspectives utilized: that the factors represent an enduring characteristic disposition, a characteristic *inter*actional style, social competency, and lexical patterns. McCrae and John (1992) have argued that the empirical validation of the model across methods and instruments, the replication of the model across times and cultures, and the long

history of consistent findings of the model supplies more than adequate evidence that the five-factor model has a viable place within personality psychology.

Thus, although not universally accepted, the five-factor model holds a central place in current personality research. Much of the excitement over the robustness of this model has emerged due to its ability to locate divergent constructs and empirical findings in personality within the conceptual space of the five-factor model, and the subsequent ability to create a meaningful and powerful assessment tool that is directly linked with theory. Developing an assessment tool, however, is dependent upon the interpretation of the five factors.

Interpretation of the five factors. While acceptance of a five-factor model is widespread, a controversial aspect of the model, and thus of efforts to derive assessment tools, lies in the interpretation (or meaning) of the five factors. Goldberg (1993) suggests that there are actually two five-factor models: one based on the original lexical hypotheses represented by Norman (1963), Goldberg (1992), and Digman (1989), and one based on the empirical work of Costa and McCrae (1987).

McCrae and Costa (1986) used adjectives such as sociable, fun-loving, and affectionate to describe those individuals whose personalities would be characterized as being high in Factor I, which they labelled Extraversion. They note that in addition to sociability, individuals high in Extraversion are assertive, active, and talkative, enjoy excitement and stimulation, and are optimistic (Costa & McCrae, 1992). Individuals low in Extraversion are described as reserved, independent, and free of social anxiety; they may not necessarily be pessimistic or unhappy (Costa & McCrae, 1980; Costa & McCrae, 1992). While Costa and

McCrae (1986) use Extraversion as a label for Factor I, others have previously labeled the factor "surgency" (Norman, 1963), "social activity" (Guilford, 1975) and "interpersonal involvement" (Lorr, 1986, cited in Digman, 1990).

McCrae and Costa (1986) used adjectives such as worrying, insecure, and self-pitying to describe those individuals whose personalities would be characterized as being high in Factor IV, which they labelled Neuroticism. They noted that in addition to worry and insecurity, individuals high in Neuroticism are likely to experience any of a number of negative affects including as anger, guilt, fear, and sadness (Costa & McCrae, 1992). Individuals low in Neuroticism are described as emotionally stable, calm, and able to cope effectively with stressful situations (Costa & McCrae, 1992). While Costa and McCrae (1986) use Neuroticism as a label for Factor IV, others have previously labeled the factor "anxiety" (Cattell, 1957), and "affect" (Peabody and Goldberg, 1989).

The interpretations of Factor I as representing a dimension of introversion-extraversion and of Factor IV as a dimension of general psychopathology are widely accepted (Digman, 1990; Bergeman, Chipuer, Plomin et. al, 1993); earlier factor analytic studies (e.g. Eysenck, 1960) had also captured these dimensions. The remaining three factors have varying degrees of consensus regarding the label the factor should receive. Factor II, which Costa and McCrae (1987) labelled Agreeableness, appears to capture what Digman (1990) called "the more humane aspects of humanity" (p. 442) and what previous studies have labelled as "friendly compliance" (Digman, 1990) and "conformity" (Fiske, 1949). McCrae and Costa (1986) used adjectives such as soft-hearted, trusting, and helpful to describe those

individuals whose personalities would be characterized as being high in Agreeableness. Individuals low in agreeableness may be egocentric, skeptical, and competitive, although Costa & McCrae do not view this as inherently problematic since such traits are necessary for analytic and scientific thought (1992).

Conscientiousness, the label Costa and McCrae (1987) gave to Factor III, has also been interpreted as "work ethic" (Peabody & Goldberg, 1989), "impulsive sensation seeking" (Zuckerman, Kuhlman, & Camac, 1988), and because of its correlation with education, "the will to achieve" (Digman, 1988). McCrae and Costa (1986) used adjectives such as well-organized, purposeful, careful, and self-disciplined to describe those individuals whose personalities would be characterized as being high in Conscientiousness. Individuals low in Conscientiousness, according to Costa and McCrae (1992) are less exact in applying moral principles, and expend less effort toward accomplishing their goals.

Costa and McCrae (1986; 1987) interpreted Factor V as Openness, and used adjectives such as imaginative, independent, and preferring variety to describe those individuals whose personalities would be characterized as being high in this factor. Individuals low in Openness are described as conservative, conventional, emotionally muted, and having a narrow scope of interests (Costa & McCrae, 1992). While Costa and McCrae (1986) use Openness a label for Factor V, others have identified this factor as "intellect" (Cattell, 1947; Digman, 1988), and descriptively addressed it as capturing a personality dimension which allows for a flexibility of interests and ideas (Digman, 1990).

Attempts to support the five-factor model utilizing exploratory orthogonal rotations of existing measures of personality have met with success; the five-factor model hypothesized by Costa & McCrae (1986; 1987) has been able to account for the underlying factors of personality measures based upon Jungian functions, Murray's Needs, Traits on the Interpersonal Circumplex, and DSM-III-R personality disorders (Costa & McCrae, 1992). Further, well-designed adoption studies utilizing identical twins raised in either the same or separate households have been able to isolate the effects of genetics and the environment on NEO-PI factors (Pedersen, Plomin, McClearn & Friberg, 1988; Bergeman, Chipuer, Plomin, et. al, 1993); these studies estimated that 31% of the variance in neuroticism, 41% of the variance in extraversion, 40% of the variance in openness, 12% of the variance in agreeableness, and 29% of the variance in conscientiousness is attributable to genetic predispositions.

Thus, current thinking within trait research suggests that five factors can be utilized to describe personality, the generalized tendencies, predispositions, and consistencies from which human behavior is derived, including the utilization of defense mechanisms, a mode of intrapersonal functioning, and the perception of social support, a mode of interpersonal functioning.

Defense Mechanisms As An Intrapersonal Process Influenced By Personality

Sigmund Freud first presented the concept of defense mechanisms. In his theory, instinctual drives arising from the id may be in conflict with the internalized value system of the superego and result in the experience of anxiety. He used the term "defense" to refer to the method by which the expression of a disturbing or

anxiety-provoking instinctual drive was altered, at times to such a degree that the original drive is completely outside of awareness and is expressed only in disguised, symbolic ways. During this stage of the development of his theories, no specific mechanisms of defense were proposed (Cramer, 1991). With his shift from topographical to structural theories of the mind, Freud (1923) began to describe defense mechanisms as all processes which protect the ego from instinctual demands arising from the id. These processes are theorized to be motivated by the avoidance of anxiety, guilt and loss (Cramer, 1991).

Freud (1936) initially suggested all defense mechanisms are pathological, although he later conceded that they may have played a necessary developmental role. Cramer (1991) has also argued that defense mechanisms may emerge as part of the normal course of development cycle. As such, defense mechanisms carry no intrinsic value but are defined as "normal" or "pathological" depending on their utility: defenses which aid in adaptation may be considered healthy, and defenses which detract from adaptation may be considered pathological. Although debate continues, she reviewed evidence that suggests different defenses may first be displayed at different times through childhood, suggesting that defenses are reflecting some underlying process (e.g., ego development, cognitive development); the display of defenses in adulthood would then reflect the degree of ego development achieved.

Vaillant (1986) suggests that defense mechanisms can be categorized in one of four categories, each reflective of a level of ego development: psychotic defenses (including delusional projection, denial, and distortion), which are common in children under age three but pathological at later ages; immature defenses (including

projection, passive-aggressive behavior, and acting out), which are common in children from age three to age 15 but pathological at later ages; neurotic defenses (including repression, displacement, and intellectualization), which are pathological in individuals from age three to age 90; and mature defenses (including altruism, humor and sublimation), which are normal (or anticipated) in individuals from age three to age 90. These developmental views of defenses reflecting underlying processes are similar to the theories of Shapiro (1965; 1981; 1989), who argued that an overarching, organizing, enduring personal style is formed in early the course of normal development and serves as a matrix from which all subsequent characteristic traits develop. He wrote that the formation of these personal styles preceded the crystallization of other modes of functioning, and that it is these styles which allow consistency to be observed in individual behavior across domains of human functioning (both adaptive and pathological). Shapiro believed these underlying processes to be primarily cognitive ones, that is, patterns of attention and processing. However, in his argument that these neurotic styles both underlie and cause the clinical manifestations of some disorders, Shapiro noted "the neurotic problem is not in the patient, it is the patient" (1989; p. xi). Thus, Shapiro believed that underlying dimensions of cognitive style, as an aspect of personality, directly affect the utilization of defense mechanisms.

Shapiro (1965) identified four "neurotic styles," each of which represent a relatively permanent (although not inflexible) patterns that generalize across time and place: the obsessive-compulsive style, the paranoid style, the hysterical style, and the impulsive style. He described the obsessive-compulsive individual as

characteristically rigid in focus, i.e. an absence of attentional fluidity. In this style, individuals exhibit the ability to able to concentrate intensely, though they are unable to shift focus smoothly between thoughts, and they are able to direct behavior with great deliberation, though they are unable to act spontaneously. Similarly, distortions in attention and autonomy can be found in a paranoid individual. However, unlike the inability to shift focus seen in the obsessive-compulsive person, Shapiro argued that the paranoid person exhibits a rigid attentional style of scanning and vigilance; the paranoid individual is unable to concentrate intensely on any one stimuli. However, like obsessive-compulsive individuals, the paranoid individual has a distorted sense of autonomy. This deliberateness is not motivated by a desire for achieving goals, but rather is an attempt to minimize expressive behaviors that might reveal vulnerability.

The hysterical individual, as hypothesized by Shapiro, is characterized by impressionistic thought, an incapacity for prolonged concentration, and affective excitability. Because of a decreased ability to attend to cognitive, ideational stimuli, the hysterical individual is dominated by affect that does not seem to possess any depth. Whereas hysterics possess little cognitive control over affect, impulsive individuals reveal a personality style marked by minimal cognitive control over behavior, a disavowal of responsibility, minimal tolerance for frustration, and an attentional style which is devoid of concentration or deliberation.

Thus, the characteristic use of certain defense mechanisms may be reflections of underlying personality structure (Shapiro, 1965; 1981; 1989). Bettelheim (1982), in suggesting that systematic mistranslations of Freud's work may have been made to

keep psychoanalytic theory in the hands of the medical community, noted that the word "defense" does not adequately convey the lexical and emotional meaning of Freud's German term, "Abwehr." He wrote that "to defend" connotates an active effort to fight off, while a more accurate translation of Freud's term would be "to parry," with connotations of a deflection or "turning aside through clever means." He lamented that the term "defense mechanism" suggests that "inner processes, such as reaction formations or denials, are something alien - something outside oneself" (p. 92). Similarly, Guntrip (1963) observed that defenses are, in part, a reflection of the ego itself. Thus, the body of literature on defense mechanisms, while in whole larger than the scope of this study, does suggest that personality variables are associated with the utilization of defense mechanisms.

Empirical examinations of defense mechanisms have found support for such an association. For example, Vickers et al. (1981) found that facets of Type A personality are positively correlated with regression, intellectualization, and projection. Personality changes in therapy have been related to movement from immature to mature defenses (Vaillant, 1966). The experience of anxiety has been negatively associated with repression (Gleser & Ihilevich, 1969) and denial (Sarason et. al, 1972), and the striving for academic success has been positively associated with intellectualization (Galinsky, 1971). The use of defense mechanisms seem better predicted by measures of personality than of mood (Tauschke, Helmes, & Merskey, 1991).

Although personality and the characteristic use of defense mechanisms have been associated, it should not be assumed that all individuals with a certain

personality structure will rely on the same defense mechanism under all circumstances. Lazarus and Folkman (1984) have found that people use a wide variety of coping strategies, and that they vary under different situations. Thus, there is an association between personality traits and all defense mechanisms, although the strength of these associations will vary from person to person.

Social Support As An Interpersonal Process Influenced By Personality

Recent work also indicates that personality variables are associated with the perception of social support. PsycLit indicates that there were 5159 articles published in psychological journals between January, 1973 and June, 1993 that dealt, at least in part, with the construct of social support. The role of social support has been identified in numerous arenas, such as physical illness (for review, see Broadhead et al., 1983), psychological disorders, including depression (Kessler & McLeod, 1985; Lin & Ensel, 1984; Leavy, 1983; Eaton, 1978), the adjustment to teenage pregnancy (Barrera, 1981), the adjustment to graduate school (Goplerud, 1980) and the adjustment to marital separation (Kincaid & Caldwell, 1991; 1993).

Such broad applications of social support are indicative of the intuitive appeal and comprehensive implications contained within the construct; however, since no single theory drives the research, it is difficult to present a unitary definition of social support. Most empirical studies attempt to further delineate the process of how social support mediates the stress-psychopathology relationship; these typically utilize either main (direct) effect hypotheses or interactional (buffering) effect hypotheses (for reviews, see Cobb, 1976; Leavy, 1983; Cohen & Wills, 1984; Cohen &

Syme, 1985). However, as noted above, there is variation in the breadth of domains in which social support is studied and consequently in the operationalization of the term "social support." Perhaps because of this, previous reviewers have criticized the construct as having "a diversity of definitions, methodologies, and theories" (Leavy, 1983), as "operationalized in a somewhat bewildering assortment of ways" (Wilcox, 1981), and as "so vague or so broad that the concept is in danger of losing its distinctiveness" (Barrera, 1986).

Despite differences in application and terminology, most studies involving social support can be understood as involving one or both of two general social support constructs outlined by House and Kahn (1985). House and Kahn categorized operational definitions of social support as being either "structural" or "functional;" research using structural definitions of social support typically focus on the number of supporters in the social support network, the relationship of the supporter to the individual, the degree of interrelationships among supporters in the network (density), and the frequency of contact between the subject and members of the social support network, while research using functional definitions of social support typically focus on the perceived availability of emotional support, practical assistance, and tangible support within the social support network.

Research utilizing the construct of social support has been criticized for neglecting to examine the personal context within which social support operates. Monroe and Steiner (1986) argued that studying the mediating effect of social support on any dependent variable might best be conducted as an examination of the incremental utility of social support within personality typologies. Vinokur et. al

(1987) noted that measurement of the perception of social support may reflect the personal dispositions of the subject as much as the actual provision of support, and found moderate evidence for this. Sarason et. al (1987) suggested that social support could best be conceptualized "as a developmental personality characteristic, rather than as simply an environmental provision" (p. 831). Others have argued that the perception of social support is itself simply an expression of personality, because the social support network itself (through the availability of people to include in the support network and the availability of those within the network from whom to elicit support) may be influenced by personality factors (Jung, 1988; Elliott & Gramling, 1990).

There is some empirical evidence for the influence of personality upon the social support network. Sarason and Sarason (1982) found conventionality, rigidity and hostility to be correlated with the perception of inadequate social support. Henderson (1984) found that people carefully create their social support networks, and thus can not be viewed as passive recipients of the support it may offer. The perception of emotional support has been linked to self-esteem, religiosity, and authority (Dunkel-Schetter, Folkman, & Lazarus, 1987). Jung (1988) found that interpersonal skills affected the process of developing and maintaining a social support network. Elliott & Gramling (1990) found the perception of satisfactory social support to be related to the effect communication of thoughts and feelings to others. A path analysis revealed that some personality characteristics (help-seeking, help-giving, affiliation) were associated with larger social support networks and the perception of greater available social support (Connell & D'Augelli, 1990). Lakey

and Cassady (1990) found the perception of support to be inversely related to anxiety and dysphoria, and argued that the perception of social support operates as a personality variable.

Major Propositions

Five personality variables have been consistently identified which are robust across time, context and setting. Social support, an interpersonal phenomenon, is related to intrapersonal processes (Jung, 1988; Elliott & Gramling, 1990). Similarly, the utilization of defense mechanisms, an intrapersonal phenomenon, is related to personality variables (Shapiro, 1965; Shapiro, 1981; Shapiro, 1989; Vaillant, 1966; Vickers et al., 1981). Based upon the literature reviewed above, it is hypothesized that personality is related to both intrapersonal and interpersonal functioning in a hierarchical manner: personality traits first affect intrapersonal processes, which in turn affect interpersonal processes.

One example of intrapersonal functioning is the characteristic utilization of defense mechanisms. As one example, individuals who are open, receptive and flexible to new ideas would be expected to be more accepting of the thoughts and feelings of themselves as well as others, and therefore less likely to utilize defenses based upon denial and repression. Similarly, individuals who are anxious, self-absorbed and worried would be more likely to utilize defenses based upon self-blame.

One example of interpersonal functioning is the perception of social support. The perception of being understood and accepted by another person underlies the

construct of social support. The extent to which defense mechanisms are utilized would be expected to either facilitate or inhibit relationships with other people. As an example, individuals who frequently utilize projection as a defense should perceive their environment as less emotionally supportive than individuals who rarely utilize projection. Similarly, individuals who frequently utilize intellectualization as a defense should have a larger social support network with which to seek stimulation than should individuals who rarely utilized intellectualization.

Thus, the five-factor model of personality, the utilization of defense mechanisms, and the perception of social support can be integrated into a causal chain, with personality preceding and affecting the characteristic use of defense mechanisms, and defense mechanisms preceding and affecting the perception of social support. This study will propose and examine a hierarchical structural model of these constructs, which will be operationalized by the NEO-PI-R, the Defense Mechanisms Inventory, and the Norbeck Social Support Questionnaire.

Operationalizing The Constructs

The Neuroticism-Extraversion-Openness-Personality Inventory, Revised (NEO-PI-R), initially developed and recently revised by Costa & McCrae (1985; 1992), provides a means of operationalizing the personality variables of the five-factor theory. The Defense Mechanisms Inventory (DMI; Ihilevich & Gleser, 1991) provides a means of operationalizing characteristic defensive style. The Norbeck Social Support Questionnaire (NSSQ; Norbeck, Lindsey, & Carrieri, 1981; 1983)

provides a means of operationalizing structural and functional aspects of social support. Each of these measures is discussed further below.

The NEO-PI-R. The NEO-PI-R (Costa & McCrae, 1985) is a paper and pencil measure developed specifically to assess the five-factor model of personality, and has been called "one of the best state-of-the-art tools available for the general and systematic assessment of normal personality" (p. 536; Leong & Dollinger, 1991). The NEO-PI was revised to provide more subscale facets and to improved the internal consistency of some scales (Costa & McCrae, 1992). Correlations between the old and new version of the instrument have ranged from .93 to .95 (Costa & McCrae, 1992).

The Neuroticism Scale. Costa & McCrae's (1992) review reported that Scale N of the NEO-PI-R assesses the likelihood of feelings of negative affects such as fear, sadness, guilt, and/or disgust. As such, Scale N is a general measure of psychological distress and poor coping skills. High scores on Scale N are associated with poor impulse control, irrational ideas, neurotic behavior, and disruptive emotions. Low scores on Scale N are associated with calm, even-tempered individuals who are able to cope with stressful situations without major psychological disruption.

The Extraversion Scale. In their review, Costa & McCrae (1992) reported that Scale E of the NEO-PI-R assesses sociability. High scores on Scale E are associated with liking people, assertiveness, optimism, and excitability. Low scores on Scale E are associated with reserved, independent individuals who, although

they prefer to be alone, are not unhappy and do not necessarily have any social anxieties.

The Openness Scale. Costa & McCrae's (1992) review reported that Scale O of the NEO-PI-R assesses a broad domain including intellect, imagination, aesthetic sensitivity, curiosity, and judgement. High scores on Scale O are associated with self-examination of one's inner experiences, unconventional values, a willingness to challenge authority, and heightened emotional awareness. High scores on Scale O are also linked to education, IQ, and creativity, although Scale O and intelligence are not identical. Low scores on Scale O are associated with conventional behavior and values, a preference for the familiar, a narrowed scope of interests, and muted emotional responses.

The Agreeableness Scale. In their review, Costa & McCrae (1992) reported that Scale A of the NEO-PI-R assesses interpersonal tendencies. High scores on Scale A are associated with altruism, the ability to empathize and sympathize, and interpersonal cooperation. Low scores on Scale A are associated with individuals who are antagonistic, egocentric, and competitive.

The Conscientiousness Scale. Costa & McCrae's (1992) review reported that Scale C of the NEO-PI-R assesses self-control. High scores on Scale C are associated with good impulse control, planning, organization, and determination. Low scores on Scale C are associated with a flexible moral code, decreased goal-directed behavior, and increased hedonism and interest in sex.

Use of the NEO-PI in prior research. Because of the recency of revisions conducted to form the NEO-PI-R, there is little psychometric data yet

available. However, given the high correlations between the NEO-PI and the NEO-PI-R, and given that the revisions primarily involved subfacets of the scales, there is little reason to believe that the NEO-PI-R will have significantly different psychometric properties.

A considerable amount of information is available on the NEO-PI. It has been used extensively to not only to assess the factors proposed in the five-factor model, but to successful demonstrate the prevalence of the five factors throughout other personality inventories (Digman, 1990). Factor analytic studies involving the NEO-PI, using various techniques of rotation, have successfully identified a five-factor model in the MMPI (Costa et. al, 1986), the California Psychological Inventory (Mccrae, Costa, & Piedmont, 1993), the Eysenck Personality Inventory (McCrae & Costa, 1985), the Interpersonal Style Inventory (Lorr, Youniss, & Kluth, 1992), the Jackson Personality Research Form (Costa & McCrae, 1988a), the Myers-Briggs Type Indicator (McCrae & Costa, 1989b), the California Q-Set (McCrae, Costa & Busch, 1986), and the Narcissistic Personality Inventory (Bradlee & Emmons, 1992).

Construct validity has been demonstrated for all scales of the NEO-PI-R. Neuroticism, as measured by the NEO-PI, has been positively associated with general measures of neuroticism and psychological distress (Costa & McCrae, 1992) as well as specific indicators of sexual dysfunctions (Fagan, Wise, Schmidt, et. al, 1991; Wise, Fagan, Schmidt, et. al, 1991). Extraversion and Agreeableness, as measured by the NEO-PI, align with Wiggins' interpersonal circle (McCrae & Costa, 1989a). Low scores on NEO-PI Agreeableness, have been associated with indicators of sexual

dysfunctions (Fagan, Wise, Schmidt, et. al, 1991; Wise, Fagan, Schmidt, et. al, 1991). Openness, as measured by the NEO-PI, is positively correlated with cognitive aspects of creativity (McCrae, 1987). Conscientiousness, as measured by the NEO-PI, has been positively associated with both academic achievements (Dollinger & Orf, 1991) and work achievements (Dye, 1991; cited in Costa & McCrae, 1992).

The five-factor model is associated with other psychological concepts. Watson & Clark (1992) found that there were numerous positive and negative relations between the factors measured by the NEO-PI-R and the expression of various affects. Personality factors have been identified as an agent in some DSM-III-R Axis I disorders (Widiger & Trull, 1992), and Axis II disorders within DSM-III-R have been shown to correlate positively with Scales N, E, and A (Trull, 1992). Individuals suffering from chronic physical pain have been found to vary in their experience of coping with the pain depending on level of Scale N (Wade, Dougherty, Hart, & Cook, 1992). The NEO-PI has been used to identify five-factor models in adjustment studies of both children and adolescents (Graziano & Ward, 1992; Digman, 1989), and recent research has begun on the relationship between the five-factors of personality and physical health (Smith & Williams, 1992).

Given these findings, it has been suggested that the NEO-PI-R could become an integral part of clinical personality assessments, and that, when used in combination with projective techniques, could lead to more complete understanding of clients (Ben-Porath & Waller, 1992; Costa, 1991; McCrae & Costa, 1986).

The Defense Mechanisms Inventory. The Defense Mechanisms Inventory (Ihilevich & Gleser, 1986; Ihilevich & Gleser, 1991) is a pencil and paper measure

developed to categorize defensive styles. The five DMI scales (and corresponding defensive style) are Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO), and Turning Against Self (TAS).

The Principalization Scale. Ihilevich and Gleser (1991) reported that elevations on the Principalization (PRN) scale reflect individuals who "obscure, reinterpret or generalize the meaning of a perceived threat, thereby casting it in personally or socially more desirable terms" (p.44). They note that this defense relies upon internalizing affect through splitting or repression. For these individuals, such a posture allows thoughts, behavior and emotions to exist without integration, so that anxiety which that might be aroused by a threat can be minimized, and releasing the need for personal responsibility in behavior. They suggest that such people are often accomplished in their careers, though lacking in meaningful interpersonal relationships, relying on cognitive attempts at "understanding" and problem solving and rarely showing outward manifestations of anxiety or depression. Their review of previous research on those scoring high on the PRN scale of the DMI suggests such individuals have good ego-strength, experience little anxiety, express high self-esteem and are cognitively efficient. Their emotions tend to be stable, with high self-control, and they tend to be oriented toward internal sources of satisfaction.

Ihilevich and Gleser (1991) found that elevations on the PRN scale occurred in 4.5% of males and 5.9% of females in an outpatient psychiatric sample. Elevations on the PRN scale were reported to be independent of age, gender, education or SES.

The Projection Scale. Ihilevich and Gleser (1991) reported that the elevations on the Projection (PRO) scale reflect individuals who "overcome their fears

by constantly belittling and judging others. Their vigilance keeps them on guard against anticipated attacks... The pervasive suspiciousness of PRO patients provides them with the rationalizations they need to allay their anxiety about their sense of powerlessness and fragile autonomy" (p.38). They suggest that such people maintain chronic unresolved anger and jealousy, and frequently come into interpersonal conflicts with others. Such individuals maintain a conviction of their own infallibility, and become hostile when confronted with evidence to the contrary. Their review of previous research on those scoring high on the PRO scale of the DMI suggests such individuals are intolerant, tense, and are oriented toward external sources of satisfaction.

Ihilevich and Gleser (1991) found that elevations on the PRO scale occurred in 4.5% of males and 5.1% of females in an outpatient psychiatric sample. Elevations on the PRO scale were reported to be positively correlated with gender (i.e., males were more likely to use a PRO style than females). Elevations in T-scores on the PRO scale were reported to be independent of age, education or SES.

The Reversal Scale. Ihilevich and Gleser (1991) reported that the Reversal (REV) scale measures those individuals who "find it too emotionally distressing to recognize their inner conflicts or confront external threats to their interests. Their sense of basic security is so fragile and their fear of annihilation so great, that it appears to require that they always maintain an image of physical and psychological well-being" (p.73). They suggest that such people are outwardly cooperative, pleasant and accommodating, though they are often oblivious to obvious problems in their lives, require excessive reassurance, and may react with confusion

to stressful events. Their review of previous research on those scoring high on the REV scale of the DMI suggests such individuals are self-controlled, trusting, and have few resources available to assist in coping with prolonged stress. Their emotions tend to be stable, with anxiety and depression rarely expressed. They tend to be oriented toward internal sources of satisfaction.

Ihilevich and Gleser (1991) found that elevations on the REV scale occurred in 5.9% of males and 5.9% of females in an outpatient psychiatric sample. Elevations on the REV scale were reported to be positively correlated with age. Elevations in T-scores on the REV scale were reported to be independent of age, gender, education or SES.

The Turning Against Others Scale. Ihilevich and Gleser (1991) reported that the elevations on the Turning Against Others (TAO) scale reflect individuals who use "aggression to negate their feelings of inadequacy and mask their deep sense of inferiority. By dominating and aggressing, they create an illusion of strength that conceals their profound fear of disapproval and rejection" (p. 26). They suggest that such people are inconsiderate, competitive, more attentive to their own needs than those of others, and lacking in truly meaningful or satisfying interpersonal relationships. Such people deal with conflict by externalizing their frustration. Their review of previous research on those scoring high on the TAO scale of the DMI suggests such individuals are impulsive, aggressive, have poor self-control, and are undersocialized. Their emotions tend to be labile, with externalized anger and depression likely. They tend to be oriented toward external sources of satisfaction.

Ihilevich and Gleser (1991) found that elevations on the TAO scale occurred in 7.2% of males and 5.1% of females in an outpatient psychiatric sample. Elevations on the TAO scale were reported to be negatively correlated with age, and positively correlated with gender (i.e., males were more likely to use a TAO style than females). Elevations on the TAO scale were reported to be independent of education or SES.

The Turning Against Self Scale. Ihilevich and Gleser (1991) report that the Turning Against Self (TAS) scale measures those individuals who "to compensate for pervasive feelings of devaluation and worthlessness, ...adopt perfectionistic standards... [and] ...fearing the devaluation of others, they establish some sense of control through adopting positions such as 'I'll judge myself before others judge me' " (p.61). They suggest that such people are pessimistic, unhappy, and demoralized. They report excessively high expectations for themselves, and are punitive when (inevitably) they do not meet these expectations. Their review of previous research on those scoring high on the TAS scale of the DMI suggests such individuals are introverted, filled with doubt, and guilt-ridden.

Ihilevich and Gleser (1991) found that elevations on the TAS scale occurred in 11.8% of males and 12.9% of females in an outpatient psychiatric sample, and was the scale most likely to be elevated scale for both sexes. Elevations on the TAS scale were reported to be positively correlated with gender (i.e., females were more likely to use a TAO style than males). There is evidence that elevations in T-scores on the TAS scale may be inversely related to education and SES.

Use of the DMI in prior research. Although the Defense Mechanisms Inventory has not yet been utilized with the NEO-PI-R, it has been used in a number of other empirical studies. Within medical settings, the DMI has been used to show associations between defensive style and increased menstrual discomfort (Greenberg & Fisher, 1984). Peglar and Borgen (1984) found that varying DMI defensive profiles were related to increased mortality during recovery from myocardial infarctions. DMI profiles have been related to measures of physical symptoms, mood, pain, and the use of pain medications in females recovering from major abdominal surgery (Wilson, 1982), and to the use of contraceptives and unwanted pregnancies (Rader, Bekker, Brown, & Richardt, 1978). Scholz (1973) found that suicide attempters were significantly more likely to utilize the TAS defense than neuropsychiatric controls.

In psychological studies, Morelli and Andrews (1982) found that Ellis' concept of irrational beliefs correlated in predictable ways with defensive styles of the DMI. The DMI has been used to determine consistent similarities within family dyads in the utilization of defenses (Juni, 1992), and Klusman (1982) used the DMI when he reported that defensive styles were able to contribute to the prediction of responses to stress. Viney and Manton (1974) found individuals relying upon PRN as a defense were significantly less anxious than those using other defenses. Schill, Rader, Evans, & Segall (1976) found that male participants with a proclivity for guilt showed a high preference for the inhibitory PRN and TAS defensive styles, while showing a low preference for the impulsive TAO defensive style. The DMI has been used to show that there are no significant differences between blind and sighted persons in the characteristics selection and utilization of defense mechanisms (Minskoff & Curtis,

1984). In a review, Cramer (1988) concluded that, although there were some issues of scale intercorrelations, the DMI was meaningfully related to personality variables.

The DMI was originally developed using an outpatient psychiatric sample. However, Gordon (1979) used college students as participants while correlating DMI and MMPI profiles, and produced findings which were similar to Gleser & Ihilevich's (1969) original study. This suggests that findings related to particular DMI profiles may be generalized to the college population.

The Norbeck Social Support Questionnaire. The Norbeck Social Support Questionnaire (Norbeck, Lindsey, & Carrieri, 1981; 1983) is a self-report rating of the support received from one's social network. On this questionnaire, each participant is asked to list up to 20 people who they believe currently provide some form of support. They are then asked to describe their relationship (e.g. familial, nonfamilial, professional, etc.) to each person, and to rate the amount of emotional support, practical assistance, and advice/informational support given to them by each person. Subjects then indicate how long they have known the person, the frequency of contact with each person, and which people in the network know each other. All ratings are made on a 5-point Likert scale. Based on the responses to these questions, a Total Functional Support score (based upon questions which ask about emotional support, affiliation, and tangible aid) and a Total Structural Support score (based upon questions which ask about the number of supporters, the frequency of contact, and the duration of the relationship) is derived. For purposes of this study, the Total Functional Support score and Total Structural Support score are multiplied to form a Total Social Support score.

Content analyses of the NSSQ have found that the instrument is sensitive to the major types of support empirically identified (Norbeck, Chaftez, Skodol-Wilson, & Weiss, 1991). A recent examination of typical social support questionnaires (Sarason, Shearin, Pierce, & Sarason, 1987) found that three social support measures (representative of differing theoretical approaches to assessing social support) tend to uniformly assess common constructs underlying the concept of social support, namely that the individual is engaged in interpersonal relationships and feels accepted by others. Although Sarason, et al. (1987) did not directly examine the NSSQ, the NSSQ is similar to two of the measures included, varying primarily in physical format.

Use of the NSSQ in prior research. The NSSQ was initially used by its developers to assess characteristics of the social support networks of nursing students (Norbeck, Lindsey, & Carrieri, 1983; Norbeck, Lindsey, & Carrieri, 1981). More recently, the NSSQ was used in a study which found that family members tend to provide emotional support while friends provide more affirmation during prolonged stress (Primomo, Yates, & Woods, 1990). Fisher et al. (1989) included the NSSQ in a battery designed to identify the effects of Large Group Awareness Training. Quittner, Glueckauf, and Jackson (1990) used the NSSQ, in conjunction with other measures, to contrast alternative models of how social support impacts upon parenting stress, while Florian and Krulik (1991) used the NSSQ and found an inverse relationship between loneliness and social support in the mothers of chronically and mortally ill children. Kincaid and Caldwell (1991; In press) used the NSSQ to assess

both structural and functional aspects of the social support networks of maritally separated individuals.

Specific Hypotheses

This study proposes that a hierarchical relationship exists between personality traits, the characteristic utilization of defense mechanisms (as a measure of intrapersonal functioning) and the perception of social support (as a measure of interpersonal functioning), with personality traits preceding and affecting defense mechanisms, which in turn precedes and affects social support (see Figure 1). Each of the specific hypotheses within the larger model are presented below, and are individually identified for purpose of later discussion.

==========

Insert Figure 1 About Here

==========

Hypotheses concerning the relationship of personality traits to the characteristic use of defense mechanisms. It is hypothesized that each of the factors in the five-factor model of personality will be associated with characteristic preferences of defense mechanisms. An overview of the direction of these hypotheses is presented in Table 1. Specifically, it is hypothesized that:

==========

Insert Table 1 About Here

==========

Figure 1

Hypothesized General Structural Relationship Of Personality, Defense Mechanisms, And Social Support

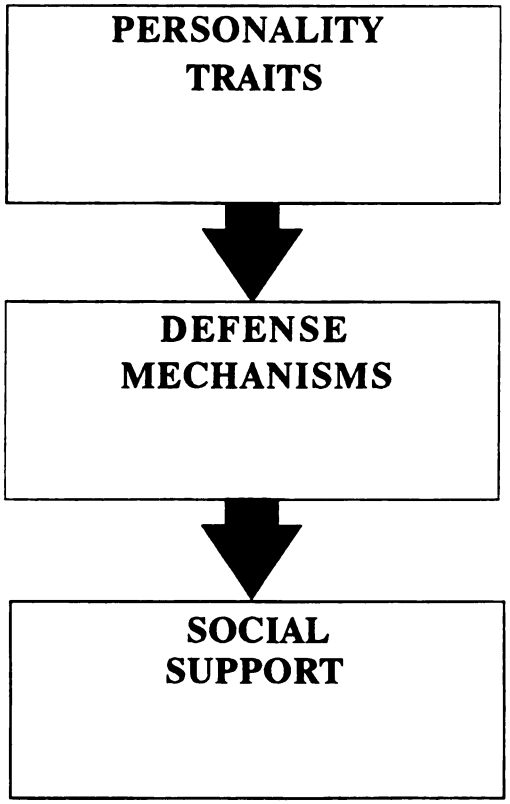

Table 1

The Hypothesized Direction Of Correlations Among Scales Of The NEO-PI-R And The DMI

Scale	N	E	O	A	C
PRN	-		+		+
PRO				-	
REV	-	+	-	+	+
TAO	+	-		-	-
TAS	+				+

Note: Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PI-R, and the Principalization (PRN), Projection (PRO) Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI.

(1a) Individuals who are chronically anxious and insecure would be less likely to have good ego-strength, high self-esteem, and stable emotions. Thus, it is hypothesized that the Neuroticism scale of the NEO-PI-R will be negatively correlated with the PRN (Principalization) scale of the DMI;

(1b) Individuals who are chronically anxious and insecure are, by definition, experiencing difficult and troubling emotions and would be likely to maintain self control and suppress their experience of anxiety and depression. Thus, it is hypothesized that the Neuroticism scale of the NEO-PI-R will be negatively correlated with the REV (Reversal) scale of the DMI;

(1c) Individuals who are chronically anxious and insecure would be likely to use aggression to negate their feelings of inadequacy and inferiority, concealing their interpersonal fears. Thus, it is hypothesized that the Neuroticism scale of the NEO-PI-R will be positively correlated with the TAO (Turning Against Others) scale of the DMI;

(1d) Individuals who are chronically anxious and insecure would be more likely to be unhappy, self-punitive, and guilt-ridden. Thus, it is hypothesized that the Neuroticism scale of the NEO-PI-R will be positively correlated with the TAS (Turning Against Self) scale of the DMI;

(1e) Individuals who are outgoing and enjoy the company of other people would be more likely to suppress their emotions to minimize difficulties in their relationships. Thus, it is hypothesized that the Extraversion scale of the NEO-PI-R will be positively correlated with the REV (Reversal) scale of the DMI;

(1f) Individuals who are outgoing and enjoy other people would be less likely to act in a manner that could jeopardize their relationships with others. Thus, it is hypothesized that the Extraversion scale of the NEO-PI-R will be negatively correlated with the TAO (Turning Against Others) scale of the DMI;

(1g) Individuals who are independent, broad-minded and flexible in their thinking are more likely to have good ego-strength, experience little anxiety, and be oriented toward internal sources of satisfaction. Thus, it is hypothesized that the Openness scale of the NEO-PI-R will be positively correlated with the PRN (Principalization) scale of the DMI;

(1h) Individuals who are independent, broad-minded and flexible in their thinking would be less likely to suppress their emotions. Thus, it is hypothesized that the Openness scale of the NEO-PI-R will be negatively correlated with the REV (Reversal) scale of the DMI;

(1i) Individuals who are altruistic, sympathetic, and cooperative would be less likely to be suspicious, hostile, and jealous of others. Thus, it is hypothesized that the Agreeableness scale of the NEO-PI-R will be negatively correlated with the PRO (Projection) scale of the DMI;

(1j) Individuals who are altruistic, sympathetic, and cooperative would be likely to minimize their own emotions and problems in their relationships with others. Thus, it is hypothesized that the Agreeableness scale of the NEO-PI-R will be positively correlated with the REV (Reversal) scale of the DMI;

(1k) Individuals who are altruistic, sympathetic,and cooperative would be unlikely to be dominating, aggressive, and judgmental in their relationships with others. Thus, it is hypothesized that the Agreeableness scale of the NEO-PI-R will be negatively correlated with the TAO (Turning Against Others) of the DMI;

(1l) Individuals who are careful, self-disciplined and self-motivated would be likely to good ego-strength, high self-esteem, and stable emotions. Thus, it is hypothesized that the Conscientiousness scale of the NEO-PI-R will be positively correlated with the PRN (Principalization) scale of the DMI;

(1m) Individuals who are careful, self-disciplined and self-motivated would be likely to maintain self control and suppress their experience of anxiety and depression. Thus, it is hypothesized

that the Conscientiousness scale of the NEO-PI-R will be positively correlated with the REV (Reversal) scale of the DMI;

(1n) Individuals who are careful, self-disciplined and self-motivated would be likely to be impartial and non-judgmental in their relationships with others. Thus, it is hypothesized that the Conscientious scale of the NEO-PI-R will be negatively correlated with TAO (Turning Against Others) scales of the DMI; and,

(1o) Individuals who are careful, self-disciplined and self-motivated would be likely to be self-critical, judgmental and perfectionistic. Thus, it is hypothesized that the Conscientiousness scale of the NEO-PI-R will be positively correlated with the TAS (Turning Against Self) scale of the DMI.

Hypotheses concerning the relationship of the characteristic use of defense mechanisms to social support. It is hypothesized that the characteristic preferences of defense mechanisms will be associated with the ability to organize and utilize social support. An overview of the direction of these hypotheses is presented in Table 2. Specifically, it is hypothesized that:

==========

Insert Table 2 About Here

==========

Table 2

The Hypothesized Direction Of Correlations Among Scales Of The DMI And The Total Social Support Score Derived From The NSSQ

Scale	TSS
PRN	+
PRO	-
REV	-
TAO	-
TAS	+

Note: Abbreviations refer to the Principalization (PRN), Projection (PRO) Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI and the Total Social Support score (TSS) derived from the NSSQ.

(2a) Individuals who minimize affect and rely upon cognitive resources for coping would be likely to value and maintain social relationships. Thus, it is hypothesized that the PRN (Principalization) scale of the DMI will be positively correlated with the Total Social Support rating derived from the NSSQ;

(2b) Individuals who are judgmental, suspicious, and reluctant to express personal information to others would be unlikely to value and maintain social relationships. Thus, it is hypothesized that the PRO (Projection) scale of the DMI will be negatively correlated with the Total Social Support rating given on the NSSQ;

(2c) Individuals who are self-controlled, minimize affect, and minimize their need for emotional support would be unlikely to value and maintain social relationships. Thus, it is hypothesized that the REV (Reversal) scale of the DMI will be negatively correlated with the Total Social Support rating derived from the NSSQ;

(2d) Individuals who are aggressive, competitive, and have interpersonal fears would be unlikely to value and maintain social relationships. Thus, it is hypothesized that the TAO (Turning Against Others) scale of the DMI will be negatively correlated with the Total Social Support rating derived from the NSSQ; and,

(2e) Individuals who are self-critical, self-punitive, and guilt-ridden would be unlikely to value and maintain social relationships. Thus, it is hypothesized that the TAS (Turning Against Self) scale of the DMI will be negatively correlated with the Total Social Support rating derived from the NSSQ.

Integrating the hypotheses into a complex system. It is hypothesized that the model presented through these hypotheses will be an acceptable best model of the inter-relationships of these variables. This hypothesis will be tested utilizing path analysis techniques, or structural equation modeling (Hunter, 1987).

METHOD

Procedure

Students were recruited through Introductory Psychology classes offered by the Department of Psychology at Michigan State University; in return for participation, they received credit toward the research participation component of their class. Efforts were made to recruit a minimum of 250 students; four different opportunities for participation were offered. Separate sign-up sheets for male and female participants were utilized in order to balance gender within both data collection opportunities and the total sample. All measures were administered in a group setting, with the maximum time required for completion of the measures approximately two hours. Informed consent was obtained from each student prior to administration of the psychological tests (see Appendix A). After completing a brief demographic questionnaire, the NEO-PI-R was administered, followed by the DMI, and finally the NSSQ. Each measure was scored as directed by the instrument's publisher.

Measures

Demographic Background. Participants were asked to complete a short, nonstandardized questionnaire which asked about sex, age, educational level, marital status, and race (see Appendix B).

The NEO-PI-R. The NEO-PI-R (Costa & McCrae, 1985) is a pencil and paper test which assesses Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Subjects were asked to indicate their agreement with 240 items regarding personality, using a 5-point Likert scale. The NEO-PI-R is normed for both adults and college students.

Costa and McCrae (1992) reported coefficient alphas of .92 for the Neuroticism Scale, .89 for the Extraversion Scale, .87 for the Openness Scale, .86 for the Agreeableness Scale, and .90 for the Conscientiousness Scale. Similarly, Keyset and Sweetland (1991) found coefficient alphas for the first three factors ranged from .87 to .93, while for the last two factors coefficient alphas ranged from .76 to .86. Costa and McCrae (1988b) reported that 6-year test-retest reliabilities of the first three scales (Neuroticism, Extraversion and Openness) ranged from .82 to .83, while 3-year test-retest reliabilities for the Agreeableness and Conscientiousness scales were .63 and .79, respectively.

The Defense Mechanisms Inventory. The Defense Mechanisms Inventory (Gleser & Ihilevich, 1969) is a pencil and paper test which assesses five defensive styles. Participants were asked to read 10 situations and select responses that would be most and least like their own behavior, fantasies, thoughts and feelings regarding the situation. The DMI is normed for both adults and college students.

Gleser & Ihilevich (1969) reported one-week test-retest reliabilities for each of the five scales ranged from $\underline{r} = .85$ to $\underline{r} = .93$; an independent reliability study (Weissman, Ritter, & Gordon, 1971) approximated the findings of Gleser & Ihilevich (1969), with reliabilities of the five scales ranging from $\underline{r} = .61$ to $\underline{r} = .84$. The

DMI has demonstrated construct validity through its significant correlations with a number of personality measures, including the MMPI (Gleser & Ihilevich, 1969) and Cattell's 16PF (Gleser & Ihilevich, 1979). Although there has been some concern about high correlations among some scales of the DMI (Gleser & Ihilevich, 1969; Vickers & Hervig, 1981), particularly TAO and PRO, Cramer (1991) suggested that the utilization of some defenses overlap in reality.

The Norbeck Social Support Questionnaire. Information on social support was obtained by The Norbeck Social Support Questionnaire (Norbeck, Lindsey, & Carrieri, 1981). Subjects were asked eight questions related to the provision of social support and then rate members of their social support network in their ability to provide that form of support using a five-point Likert scale. One-week test-retest reliabilities have been reported as ranging from .87 to .92 (Norbeck, Lindsey, & Carrieri, 1981); seven-month test-retest reliabilities have been reported as .73 for structural aspects of the network and .76 for functional aspects of the network (Norbeck, Lindsey, & Carrieri, 1983). Byers and Mullis (1987) conducted reliability and validity trials of the NSSQ on non-psychotic psychiatric inpatients, and found that 24-hour test-retest correlations ranged from .90 to .96 while coefficient alphas ranged from .92 to .94; they further found that scores from their sample were significantly lower than in a non-clinical sample reported by Norbeck et al. (1983), which supported the NSSQ's construct validity. Bruhn and Phillips (1984), in reviewing 13 instruments available to measure social support, noted that the NSSQ has had reliability and validity trials conducted (unlike some measures) and that the NSSQ was acceptable for research applications.

RESULTS

Demographic Characteristics of the Sample

A total of 289 students were recruited and participated in this study; 287 completed the NEO-PI-R correctly and/or in a manner that could be scored, 276 completed the DMI correctly and/or in a manner that could be scored, and 289 completed the NSSQ correctly and/or in a manner that could be scored. Participants were nearly evenly split by gender (females = 51.6%; males = 48.4%), and had a mean age of 19.2 (SE +/- 0.07). Nearly all participants were single (99.7%). Participants were primarily freshmen (46.7%), though sophomores (24.6%), juniors (20.1%), and seniors (8.7%) were also represented. The majority of participants described their race as White (82.4%), followed by African-Americans (9.3%), Asian-Americans (2.8%), Hispanics (0.7%), Native Americans (0.7%), and other races (1.7%); a small percentage of participants (2.4%) chose not to provide information regarding race.

Responses To The NEO-PI-R

Of all participants, 287 completed the NEO-PI-R correctly and/or in a manner that could be scored; sample and normative data is presented in Tables 3 and 4. A confirmatory factor analysis was conducted on each of the five factors of the NEO-PI-R. Alpha reliabilities for the five factors of the NEO-PI-R ranged from .86

to .89 (see Table 5). These are consistent with those found previously (Costa & McCrae, 1992; Keyser & Sweetland, 1991). Item loadings for each factor are presented in Appendices C to G; the intercorrelations of the scales when corrected for attenuation are presented in Table 6. Based on the these results, items were removed from the scale; the criteria used in removing items were if the item demonstrated a low loading onto its own factor, if the item loaded higher onto a factor other than its own, or if the item violated the principal of parallellism (i.e., if all items measure the same underlying construct, then they must also all relate to any other variable in the same manner).

==========

Insert Tables 3 to 6 About Here

==========

As a result of the confirmatory factor analysis, 7 of 48 items were removed from Scale N, 17 of 48 items were removed from Scale E, 14 of 48 items were removed from Scale O, 15 of 48 items were removed from Scale A, and 9 of 48 items were removed from Scale C. Nearly all items were removed for loading high onto factors other than its own or by loading uniformly onto several factors; a small number of items were removed for violating parallelism. The revised scales were submitted to a confirmatory factor analysis and provide much stronger factors (see Appendices H to L). The alpha reliabilities and the factor matrix for the revised scales of the NEO-PI-R are presented in Table 7 and Table 8; raw scores for the revised scales are presented in Appendix M. Comparing the revised factor intercorrelations with those presented by Costa and McCrae (1992) found

Table 3

Sample And Normative Scores For Scales Of The NEO-PI-R; Males

	Sample		Normative	
Scale	Mean	SD	Mean	SD
Neuroticism	95.2	17.1	90.5	22.1
Extraversion	113.4	16.8	116.7	18.3
Openness	113.5	19.8	113.9	18.5
Agreeableness	103.5	17.7	107.4	16.2
Conscientiousness	106.5	18.6	113.5	22.0

Note: Sample N = 139.

Table 4

Sample And Normative Scores For Scales Of The NEO-PI-R; Females

	Sample		Normative	
Scale	Mean	SD	Mean	SD
Neuroticism	106.4	21.8	99.8	20.9
Extraversion	123.1	20.0	123.9	17.7
Openness	119.3	17.6	118.6	17.1
Agreeableness	110.3	17.3	117.2	15.7
Conscientiousness	105.9	18.6	115.1	20.6

Note: Sample N = 148.

Table 5

Alpha Reliabilities Of The Scales Of The NEO-PI-R

Scale	N	Items	Alpha
Neuroticism	287	48	.89
Extraversion	287	48	.88
Openness	287	48	.87
Agreeableness	287	48	.86
Conscientiousness	287	48	.88

Table 6

Intercorrelations of Scales Of The NEO-PI-R After Correcting For Attenuation Due To Measurement Error

Scale	N	E	O	A	C
N	---				
E	-20	---			
O	1	55	---		
A	-11	29	29	---	
C	-48	26	6	18	---

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

remarkable parallels; the mean difference in correlations was found to be .099, with two intercorrelations involving Agreeableness (to Openness and to Extraversion) differing by more than .25; removing these two correlations reduced the mean difference in correlations between this sample with those presented by Costa and McCrae to .067 points.

==========

Insert Tables 7 and 8 About Here

==========

Responses To The Defense Mechanisms Inventory

Of all participants, 276 completed the DMI correctly and/or in a manner that could be scored; sample and normative data is presented in Tables 9 and 10. A confirmatory factor analysis was conducted on each of the five factors of the DMI. Alpha reliabilities for subscales of the DMI ranged from .60 to .83 (see Table 11). These reliabilities were more consistent with the findings of Weissman, Ritter, and Gordon (1971) than with those of Gleser and Ihilevich (1969), suggesting that the DMI possesses lower reliabilities than originally reported. Item loadings for each of the factors are presented in Appendices N to R; the intercorrelations of the scales when corrected for attenuation are presented in presented in Table 12. Based on the these results, items were removed from the scale; the criteria used in removing items were if the item demonstrated a low loading onto its own factor, if the item loaded higher onto a factor other than its own, or if the item violated the principal

Table 7

Alpha Reliabilities Of The Revised Scales Of The NEO-PI-R

Scale	N	Items	Alpha
Neuroticism	287	41	.88
Extraversion	287	31	.87
Openness	287	34	.87
Agreeableness	287	35	.84
Conscientiousness	287	39	.88

Table 8

Intercorrelations Of The Scales Of The Revised NEO-PI-R After Correcting For Attenuation Due To Measurement Error

Scale	N	E	O	A	C
N	---				
E	-20	---			
O	02	46	---		
A	-17	14	15	---	
C	-47	23	4	11	---

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

of parallellism (i.e., if all items measure the same underlying construct, then they must also all relate to any other variable in the same manner).

==========

Insert Tables 9 To 12 About Here

==========

As a result of the confirmatory factor analysis, 21 of 40 items were removed from the PRN scale, 20 of 40 items were removed from the PRO scale, 18 of 40 items were removed from the REV scale, 10 of 40 items were removed from the TAO scale, and 11 of 40 items were removed from the PRN scale. Nearly all items were removed for loading high onto factors other than its own or by loading uniformly onto several factors; a small number of items were removed for violating parallelism. The revised scales were again submitted to a factor analysis, which yielded the revisions provided clearer factors but continued to show high intercorrelations of some scales (see Appendices S to W); further, alpha reliabilities did not improve, although the reduction in items per may have contributed to this. The factor matrix and the alpha reliabilities for the revised scales of the DMI are presented in Table 13 and Table 14; raw scores for the revised scales are presented in Appendix X.

==========

Insert Tables 13 and 14 About Here

==========

Table 9

Sample And Normative Scores For Scales Of The DMI: Males

	Sample		Normative	
Scale	Mean	SD	Mean	SD
PRO	41.6	5.0	40.0	5.8
PRN	43.1	6.2	44.9	6.3
REV	36.7	6.7	37.1	7.4
TAO	43.6	9.6	41.6	9.2
TAS	35.1	6.3	36.4	6.8

Note: Sample N = 132.

Table 10

Sample And Normative Scores For Scales Of The DMI; Females

Scale	Sample Mean	Sample SD	Normative Mean	Normative SD
Neuroticism	39.0	5.8	36.8	6.0
Extraversion	43.9	6.6	46.6	6.2
Openness	35.3	7.4	38.0	8.0
Agreeableness	40.9	8.9	36.7	8.8
Conscientiousness	40.8	7.0	47.0	7.2

Note: Sample N = 139.

Table 11

Alpha Reliabilities Of The Scales Of The DMI

Scale	N	Items	Alpha
Principalization	276	40	.71
Projection	276	40	.60
Reversal	276	40	.74
Turning Against Others	276	40	.83
Turning Against Self	276	40	.76

Table 12

Intercorrelations Of The Scales Of The DMI After Correcting For Attenuation Due To Measurement Error

Scale	PRN	PRO	REV	TAO	TAS
PRN	---				
PRO	-65	---			
REV	59	-81	---		
TAO	-85	58	-84	---	
TAS	-18	-57	-10	-49	---

Note: Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

Table 13

Alpha Reliabilities Of The Revised Scales Of The DMI

Scale	N	Items	Alpha
Principalization	276	19	.63
Projection	276	20	.59
Reversal	276	22	.72
Turning Against Others	276	30	.82
Turning Against Self	276	29	.78

T

L

P

S
P

P

R

T

D
M
P
A

Table 14

Intercorrelations Of The Scales Of The Revised DMI After Correcting For Attenuation Due To Measurement Error

Scale	PRN	PRO	REV	TAO	TAS
PRN	---				
PRO	-36	---			
REV	27	-45	---		
TAO	-75	29	-74	---	
TAS	-23	-45	-19	-34	---

Note: Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

Responses To The Norbeck Social Support Questionnaire

All 289 participants completed the NSSQ correctly and in a manner that could be scored. Separate ratings for Functional support (comprised of the Affective, Affirmation, and Aid questions) and Structural support (comprised of the number of supporters, the frequency of contact, and the duration of the relationship) were obtained following published formulas (Norbeck, Lindsey, & Carrerri, 1981). As this study is concerned with social support as a global concept with functional and structural support equally essential, each of these scales were then multiplied together in order to form a Total Social Support score. Given the nature of the derived Total Social Support scale, however, no alpha reliabilities could be computed; raw scores for the NSSQ are presented in Appendix Y.

Results Of Tests Of Hypotheses Concerning The Relationship Of Personality Traits To The Characteristic Use Of Defense Mechanisms

The first group of hypotheses concerned the interrelationship of personality variables with the characteristic utilization of defense mechanisms. Following Levine and Hunter (1983), each correlation was corrected for attenuation, and a 90% confidence interval was computed. Further, computations were made of the maximum likelihood estimate (or probability inference) that the correlation was in the predicted direction.

Overall, 12 of 15 hypotheses concerning the relationship of personality traits to the characteristic use of defense mechanisms were supported; the results of the tests

of specific individual hypotheses are presented below. For an overview of the correlations pertinant to these hypotheses, see Table 15.

==========

Insert Table 15 About Here

==========

Results Of The Test Of Hypothesis 1a. A moderate negative correlation was found between the revised Neuroticism scale of the NEO-PI-R and the revised Principalization scale of the DMI (r = -.32); this correlation rises to -.43 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.31 to -.55. Traditional statistical tests would reject the null hypothesis ($p < .001$). As further evidence, there is a 100% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1b. A moderate negative correlation was found between the revised Neuroticism scale of the NEO-PI-R and the revised Reversal scale of the DMI (r = -.29); this correlation rises to -.36 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.25 to -.48. Traditional statistical tests would reject the null hypothesis ($p < .001$). As further evidence, there is a 100% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1c. A moderate positive correlation was found between the revised Neuroticism scale of the NEO-PI-R and the revised Turning Against Others scale of the DMI (r = .18); this correlation rises to .21 when corrected for

Table 15

Correlations Among The NEO-PI-R And The DMI After Correcting For Attenuation Due To Measurement Error

Scale	PRN	PRO	REV	TAO	TAS
Scale N	-43	-01	-36	21	44
Scale E	10	-19	-03	-05	06
Scale O	24	-18	01	-11	01
Scale A	33	-44	39	-47	29
Scale C	20	-21	23	-09	-13

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R, and the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI.

attenuation. There is a 90% confidence interval around the corrected correlation of .10 to .32; Traditional statistical tests would reject the null hypothesis ($p < .01$). Use of maximum likelihood estimates indicates that there is a 100% inference probability that the true correlation of these variables is positive, as predicted. Thus, the hypothesis of the direction of this correlation was supported, although the magnitude did not reach statistical significance.

Test of Hypothesis 1d. A moderate positive correlation was found between the revised Neuroticism scale of the NEO-PI-R and the revised Turning Against Self scale of the DMI ($r = .37$); this correlation rises to .44 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of .34 to .55. Traditional statistical tests would reject the null hypothesis ($p < .001$). As further evidence, there is a 100% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1e. A small negative correlation was found between the revised Extraversion scale of the NEO-PI-R and the revised Reversal scale of the DMI ($r = -.02$); this correlation rises to -.03 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.15 to .10. Traditional statistical tests would not reject the null hypothesis (p = NS). Use of maximum likelihood estimates indicates that there is only a 37% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was not supported.

Test of Hypothesis 1f. A small negative correlation was found between the revised Extraversion scale of the NEO-PI-R and the revised Turning Against Others scale of the DMI (r = -.04); this correlation rises to -.05 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.16 to .07. Traditional statistical tests would not reject the null hypothesis (p = NS). Use of maximum likelihood estimates indicates that there is a 75% inference probability that the true correlation of these variables is positive, as predicted. Thus, the hypothesis of the direction of this correlation was supported, although the magnitude did not reach statistical significance.

Test of Hypothesis 1g. A small positive correlation was found between the revised Openness scale of the NEO-PI-R and the revised Principalization scale of the DMI (r = .18); this correlation rises to .24 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of .11 to .37. Traditional statistical tests would reject the null hypothesis ($p < .01$). As further evidence, there is a 100% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1h. A small positive correlation was found between the revised Openness scale of the NEO-PI-R and the revised Reversal scale of the DMI (r = .01); this correlation remains at .01 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.11 to .14. Traditional statistical tests would not reject the null hypothesis (p = NS). There is only a 43% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was not supported.

Test of Hypothesis 1i. A moderate negative correlation was found between the revised Agreeableness scale of the NEO-PI-R and the revised Projection scale of the DMI (r = -.31); this correlation rises to -.44 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.31 to -.51. Traditional statistical tests would reject the null hypothesis ($p < .001$). As further evidence, there is a 100% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1j. A moderate positive correlation was found between the revised Agreeableness scale of the NEO-PI-R and the revised Reversal scale of the DMI (r = .30); this correlation rises to .39 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of .27 to .50. Traditional statistical tests would reject the null hypothesis ($p < .001$). As further evidence, there is a 100% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1k. A moderate negative correlation was found between the revised Agreeableness scale of the NEO-PI-R and the revised Turning Against Others scale of the DMI (r = -.39); this correlation rises to -.47 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.37 to -.57. Traditional statistical tests would reject the null hypothesis ($p < .001$). As further evidence, there is a 100% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1l. A small positive correlation was found between the revised Conscientiousness scale of the NEO-PI-R and the revised Principalization scale of the DMI (r = .15); this correlation rises to .20 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of .07 to .33. Traditional statistical tests would reject the null hypothesis ($p < .05$). As further evidence, there is a 99% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1m. A small positive correlation was found between the revised Conscientiousness scale of the NEO-PI-R and the revised Reversal scale of the DMI (r = .18); this correlation rises to .23 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of .11 to .35. Traditional statistical tests would reject the null hypothesis ($p <= .01$). As further evidence, there is a 100% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was supported.

Test of Hypothesis 1n. A small negative correlation was found between the revised Conscientiousness scale of the NEO-PI-R and the revised Turning Against Others scale of the DMI (r = -.08); this correlation rises to -.09 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.21 to .02. Traditional statistical methods would not reject the null hypothesis (p = NS). Use of the maximum likelihood approach indicates that there is a 91% inference probability that the true correlation of these variables is negative, as predicted. Thus, the hypothesis of the direction of this correlation was supported, although the magnitude did not reach statistical significance.

Test of Hypothesis 1o. A small negative correlation was found between the revised Conscientiousness scale of the NEO-PI-R and the revised Turning Against Self scale of the DMI (r = -.11). This correlation rises to -.13 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.01 to -.25. Traditional statistical tests would reject the null hypothesis (p = NS). As further evidence, there is only a 3% inference probability that the true correlation of these variables is positive, as predicted. Thus, this hypothesis was not supported.

Results Of Tests Of Hypotheses Concerning The Relationship Of The Characteristic Use Of Defense Mechanisms To Social Support

The second group of hypotheses concerned the interrelationship of the characteristic utilization of defense mechanisms with the availability of social support. Following Levine and Hunter (1983), each correlation was corrected for attenuation, and a 90% confidence interval was computed. Further, computations were made of the maximum likelihood estimate (or probability inference) that the correlation was in the predicted direction.

Overall, 3 of the 5 hypotheses concerning the relationship of the characteristic use of defense mechanisms to social support were supported; the results of the tests of specific individual hypotheses are presented below. For an overview of correlations pertinant to these hypotheses, see Table 16.

==========

Insert Table 16 About Here

==========

Table 16

Correlations Among The DMI And Total Social Support Score Derived From The NSSQ After Correcting For Attenuation Due To Measurement Error

Scale	TSS
PRO	11
PRN	01
REV	01
TAO	-09
TAS	05

Note: Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI, and the Total Social Support score derived from the NSSQ.

Test of Hypothesis 2a. A small positive correlation was found between the revised Principalization scale of the DMI and the Total Social Support scale derived from the NSSQ (r = .09); this correlation rises to .11 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.01 and .24. Traditional statistical tests would not reject the null hypothesis (p = NS). Use of the maximum likelihood approach indicates that there is a 93% inference probability that the true correlation of these variables is positive, as predicted. Thus, the hypothesis of the direction of this correlation was supported, although the magnitude did not reach statistical significance.

Test of Hypothesis 2b. A small positive correlation was found between the revised Projection scale of the DMI and the Total Social Support scale derived from the NSSQ (r = .01); this correlation remains at .01 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.12 to .14. Traditional statistical tests would not reject the null hypothesis (p = NS). As further evidence, there is a only a 57% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was not supported.

Test of Hypothesis 2c. A small positive correlation was found between the revised Reversal scale of the DMI and the Total Social Support scale derived from the NSSQ (r = .01); this correlation remains at .01 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.10 to .13. Traditional statistical tests would not reject the null hypothesis (p = NS). As further evidence, there is only a 57% inference probability that the true correlation of these variables is negative, as predicted. Thus, this hypothesis was not supported.

Test of Hypothesis 2d. A small negative correlation was found between the revised Turning Against Others scale of the DMI and the Total Social Support scale derived from the NSSQ (r = -.08); this correlation rises to -.09 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.20 to .02. Traditional statistical tests would not reject the null hypothesis (p = NS). Use of the maximum likelihood approach indicates that there is a 91% inference probability that the true correlation of these variables is negative, as predicted. Thus, the hypothesis of the direction of this correlation was supported, although the magnitude did not reach statistical significance.

Test of Hypothesis 2e. A small positive correlation was found between the revised Turning Against Self scale of the DMI and the Total Social Support scale derived from the NSSQ (r = .04); this correlation rises to .05 when corrected for attenuation. There is a 90% confidence interval around the corrected correlation of -.07 to .16. Traditional statistical tests would not reject the null hypothesis (p = NS). Use of the maximum likelihood approach indicates that there is a 75% inference probability that the true correlation of these variables is positive, as predicted. Thus, the hypothesis of the direction of this correlation was supported, although the magnitude did not reach statistical significance.

Results From Tests Of The Complex System

Before integrating the hypotheses and conducting a path analysis, the model was revised based on prior analyses. These revisions served primarily to respond to indications in the data that the original model did not capture meaningful aspects of

the relationship of these constructs. The revised general hypothesized model is presented in Figure 2.

==========

Insert Figure 2 About Here

==========

The assessment and inclusion of demographic variables. Following the confirmatory factor analysis and revision of scales of the NEO-PI-R and DMI, oneway analyses of variance for each scale were conducted using demographic information as the independent variables (see Tables 13 to 15). Generally, these analyses revealed consistent significant differences in the scales of the NEO-PR-R, the DMI, and the NSSQ based upon sex. There were no differences based on educational level, and, while some differences based on race were obtained, the homogeneity of the sample precluded incorporating this into the path model.

==========

Insert Tables 17 to 19 About Here

==========

Revising the DMI. Given the correlation matrix of the revised DMI scales, which suggested low construct validity (see Table 12), a second order factor analysis was conducted. This analysis confirmed the presence of two underlying factors, which were labelled "internalizing defenses" and "externalizing defenses" (see Tables 20 and 21). Internalizing defenses were considered to be the Principalization and Reversal scales of the DMI (which correlated .27) while externalizing defenses were considered to be the Projection and Turning Against Others scales of the DMI (which

Figure 2

Revised Hypothesized General Structural Relationship of Personality, Defense Mechanisms, and Social Support

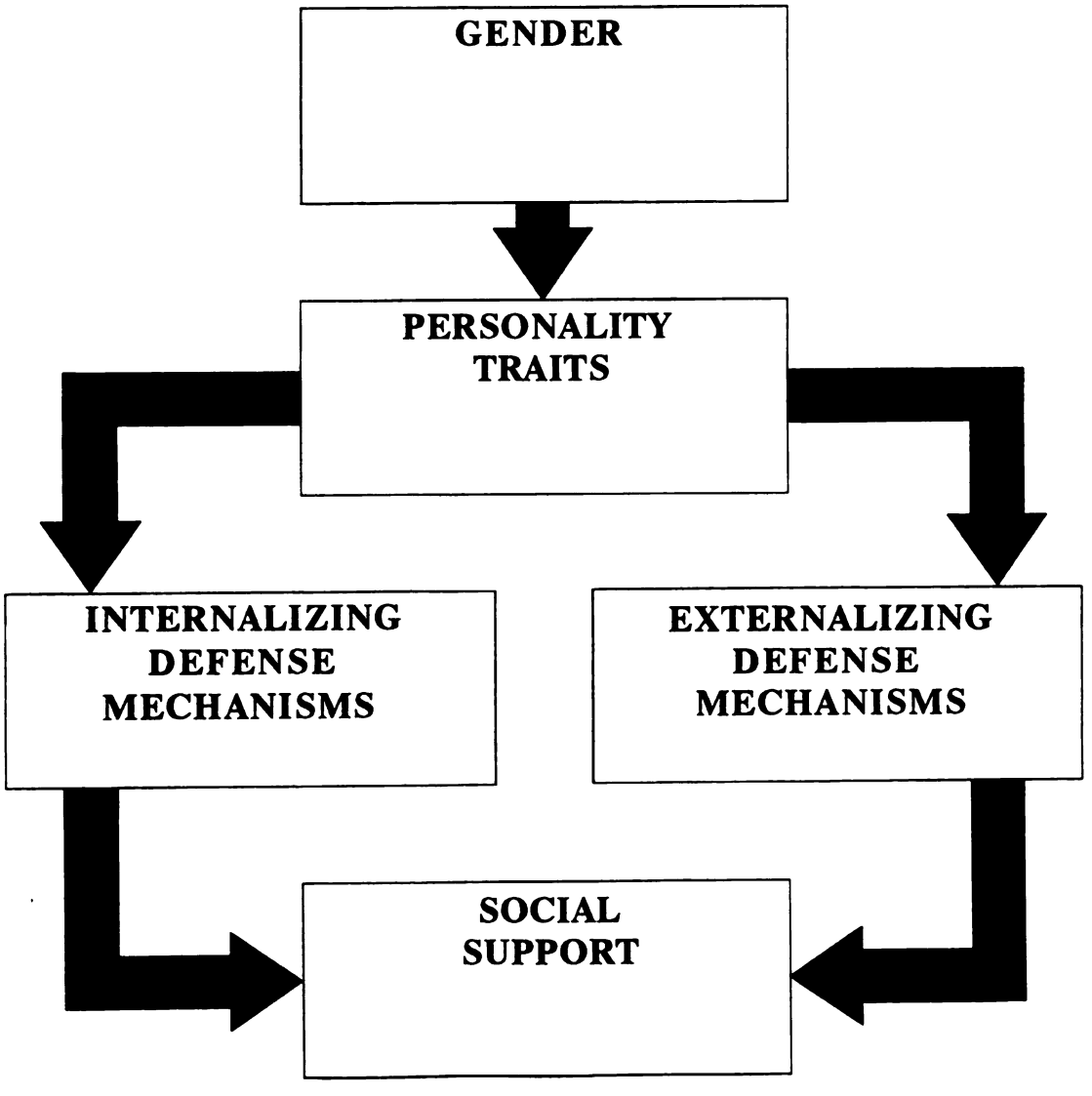

Table 17

Means, Standard Deviations, And Analyses of Variance Of All Revised Scales As A Function Of Gender

Scale	MEAN/SD Female	Male	df	F	eta
N	91.5/ 19.8	81.0/ 14.9	1,285	26.4***	.29
E	82.6/ 15.2	74.6/ 13.2	1,285	22.9***	.27
O	85.7/ 14.1	81.5/ 16.6	1,285	5.4*	.13
A	80.8/ 14.6	76.4/ 14.2	1,285	6.4*	.15
C	87.1/ 17.4	87.3/ 16.6	1,285	0.0	.00
PRN	22.5/ 4.1	22.4/ 3.9	1,274	0.0	.32
PRO	17.8/ 3.7	20.2/ 3.5	1,274	29.6***	.00
REV	20.6/ 5.3	21.4/ 4.7	1,274	1.8	.07
TAO	31.7/ 7.5	33.1/ 8.2	1,274	2.0	.08
TAS	30.2/ 6.1	24.9/ 5.5	1,274	57.3***	.41
TSS	362/ 251	283/ 222	1,287	8.0**	.16

*p < .05 **p < .01 ***p < .001

Note: Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R, the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI, and the Total Social Support Score derived from the NSSQ. Social Support expressed in hundreds. Eta is the unbiased estimator.

Table 18

Means, Standard Deviations, And Analyses of Variance Of All Revised Scales As A Function Of Educational Level

	MEAN/SD						
Scale	Frsh.	Soph.	Jr.	Sr.	df	F	eta
N	87.5/ 19.6	86.5/ 15.6	86.9/ 17.4	79.2/ 14.8	3,283	1.5	.10
E	80.4/ 15.2	77.6/ 15.2	76.2/ 13.2	79.0/ 14.5	3,283	1.24	.08
O	84.5/ 15.1	84.2/ 16.4	82.3/ 16.7	80.9/ 12.1	3,283	0.58	.04
A	78.9/ 15.1	79.6/ 13.2	76.5/ 14.6	79.4/ 15.2	3,283	0.56	.03
C	87.0/ 16.6	86.3/ 14.4	85.3/ 18.6	94.7/ 17.2	3,283	2.04	.12
PRN	21.9/ 3.8	22.9/ 4.2	22.9/ 4.2	23.1/ 3.9	3,272	1.51	.07
PRO	18.7/ 3.7	18.9/ 4.4	19.7/ 3.7	19.2/ 3.4	3,272	1.01	.10
REV	21.1/ 5.0	21.3/ 5.2	20.4/ 5.1	20.7/ 5.1	3,272	0.34	.01
TAO	32.9/ 7.8	31.7/ 7.6	32.6/ 8.6	30.8/ 6.7	3,272	0.70	.05
TAS	22.8/ 5.8	26.9/ 5.7	26.3/ 7.8	26.7/ 6.7	3,272	2.84	.15
TSS	327/ 236	347/ 245	282/ 223	341/ 275	3,286	0.85	.06

*p < .05 **p < .01 ***p < .001

Note: Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R, the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI, and the Total Social Support Score derived from the NSSQ. Social Support expressed in hundreds. Eta is the unbiased estimator.

Table 19

Means, Standard Deviations, And Analyses of Variance Of All Revised Scales As A Function Of Race

	MEAN/SD								
Scale	(1)	(2)	(3)	(4)	(5)	(6)	df	F	eta
N	86.4/ 18.5	83.8/ 11.4	77.0/ 22.6	87.9/ 8.7	82.0/ 29.7	89.6/ 9.6	5,281	0.29	.00
E	79.6/ 15.0	71.6/ 11.2	77.5/ 13.4	74.0/ 12.6	83.5/ 5.0	71.8/ 15.8	5,281	1.89	.14
O	84.7/ 15.5	72.4/ 12.7	80.0/ 14.1	79.5/ 11.3	92.0/ 1.4	87.8/ 13.9	5,281	3.50**	.21
A	79.4/ 14.9	72.2/ 12.2	82.0/ 4.2	81.2/ 14.4	56.5/ 3.5	78.2/ 11.3	5,281	2.25*	.16
C	87.0/ 17.1	88.1/ 12.5	70.5/ 14.8	88.4/ 13.6	89.0/ 4.2	89.4/ 26.9	5,281	0.45	.03
PRN	22.5/ 4.0	21.5/ 4.1	21.5/ 5.0	23.0/ 3.6	24.0/ 2.8	22.0/ 1.7	5,270	0.40	.02
PRO	18.8/ 3.8	20.5/ 4.7	21.5/ 4.9	19.6/ 2.3	20.5/ 3.5	19.7/ 0.6	5,270	1.13	.10
REV	20.7/ 5.1	22.9/ 3.7	19.0/ 4.2	23.1/ 4.5	20.5/ 0.7	22.7/ 11.6	5,270	1.11	.09
TAO	32.3/ 7.8	34.8/ 6.3	37.5/ 13.4	26.1/ 10.8	32.5/ 3.5	30.7/ 7.8	5,270	1.60	.13
TAS	28.0/ 6.3	23.7/ 6.0	22.5/ 9.2	30.8/ 5.5	24.5/ 4.9	27.0/ 10.4	5,270	2.61*	.18
TSS	331/ 239	355/ 284	131/ 68	187/ 180	467/ 300	230/ 158	5,283	1.19	.10

*p < .05 **p < .01 ***p < .001

Note: (1) White; (2) African-American; (3) Hispanic; (4) Asian-American; (5) Native-American; (6) Other. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R, the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales of the DMI, and the Total Social Support Score derived from the NSSQ. Social Support expressed in hundreds. Eta is the unbiased estimator.

correlated .29) and the reflection of the Turning Against Self scale of the DMI (which correlated with Projection and Turning Against Others scales at -.45 and -.34, respectively). Coefficient alpha for the new Internalizing Defenses scale (DMI-I) was found to be .73 while coefficient alpha for the new Externalizing Defense scale (DMI-E) was found to be .83; raw scores for these derived variables can be found in Appendix Z. This revision is not without precedence. Anderson and Leitner (1991) noted that anxiety, depression, and psychiatric symptomatology was related to an internalizing defensive style in college females, while Noam and Recklitis (1990) found that attributions of conflict as within or external to the self were associated with internalizing and externalizing defense mechanisms.

==========

Insert Tables 20 And 21 About Here

==========

Results of the initial integrational analyses. The correlation matrix of all variables utilized in the revised model is presented in Table 22. Path coefficients for all hypothesized linkages are presented in Table 23, with the standard errors presented in Table 24. Errors in the model (i.e., actual minus predicted correlations) are presented in Table 25.

==========

Insert Tables 22 To 25 About Here

==========

Table 20

Scale Loadings Onto Second Order Factor Matrix For The Revised DMI Scales

	Factor	
Scale	1	2
PRN	52	-48
REV	52	-56
PRO	-78	62
TAO	-42	47
TAS	-40	72

Note: Decimals removed. Factor 1 interpreted as Internalizing Defenses, comprised of the Principalization and Reversal scales of the DMI; Factor 2 interpreted as Externalizing Defenses, comprised of the Projection, Turning Against Others, and Turning Against Self scales of the DMI (with a reflection of the TAS scale being used).

Table 21

Second Order Factor Matrix For The Revised DMI Scales

Factor	1	2
1	---	
2	-56	---

Note: Decimals removed. Factor 1 interpreted as Internalizing Defenses, comprised of the Principalization and Reversal scales of the DMI; Factor 2 interpreted as Externalizing Defenses, comprised of the Projection, Turning Against Others, and Turning Against Self scales of the DMI (with a reflection of the TAS scale being used).

Table 22

Correlation Matrix For All Measures In The Revised Structural Equation Model After Correcting For Attenuation Due To Measurement Error

Scale	A	B	C	D	E	F	G	H	I
(A) Gender	---								
(B) Scale N	-31	---							
(C) Scale E	-29	-20	---						
(D) Scale O	-15	02	46	---					
(E) Scale A	-16	-17	14	15	---				
(F) Scale C	01	-47	23	04	11	---			
(G) DMI-Internalizing	06	-49	04	14	43	26	---		
(H) DMI-Externalizing	42	-13	-09	-13	-54	-02	-56	---	
(I) Social Support	-17	-04	18	13	03	03	-11	02	---

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R.

Table 23

Path Coefficients For All Linkages In The Revised Structural Equation Model

Scale	A	B	C	D	E	F	G	H	I
(A) Gender	---								
(B) Scale N	-31	---							
(C) Scale E	-29	---	---						
(D) Scale O	-15	---	---	---					
(E) Scale A	-16	---	---	---	---				
(F) Scale C	01	---	---	---	---	---			
(G) DMI-Internalizing	---	-45	-19	17	35	05	---		
(H) DMI-Externalizing	---	-27	-04	-03	-56	-07	---	---	
(I) Social Support	---	---	---	---	---	---	17	11	---

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R

Table 24

Standard Errors For Path Coefficients In The Revised Structural Equation Model

Scale	A	B	C	D	E	F	G	H	I
(A) Gender	00								
(B) Scale N	05	---							
(C) Scale E	05	---	---						
(D) Scale O	06	---	---	---					
(E) Scale A	06	---	---	---	---				
(F) Scale C	06	---	---	---	---	---			
(G) DMI-Internalizing	---	06	07	07	05	06	---		
(H) DMI-Externalizing	---	07	07	07	04	07	---	---	
(I) Social Support	---	---	---	---	---	---	07	07	---

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R

Table 25

Errors (Actual - Predicted) For All Linkages In The Revised Structural Equation Model

Scale	A	B	C	D	E	F	G	H	I
(A) Gender	---								
(B) Scale N	00	---							
(C) Scale E	00	-29	---						
(D) Scale O	00	-05	42	---					
(E) Scale A	00	-22	09	13	---				
(F) Scale C	00	-47	23	04	11	---			
(G) DMI-Internalizing	-05	-05	24	-01	11	21	---		
(H) DMI-Externalizing	23	17	00	-08	04	05	-46	---	
(I) Social Support	-21	07	22	11	04	03	-05	-08	---

Note: Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales of the NEO-PR-R.

Using path analysis, the model was found to be significant (Chi-square = 133.54, df = 19, $p < .001$), indicating that the overall fit of the proposed structural model and the obtained data differed significantly. Thus, this hypothesis was not supported.

Developing And Testing An Alternative Integrational Model

Path analytical results of the first approximation of the model indicated the need for modification, and an understanding of the relationship between these constructs was obtained that could be used to guide further explorations. Examination of the model as originally proposed showed that errors in path prediction were found to primarily involve the inter-relationship of five factors of the NEO-PI-R, and the relationship of internalizing defenses to externalizing defenses (see Table 25). Thus, an effort was made to revise the model in a manner that could include and explain these findings.

Revising the NEO-PI-R. Given the factor matrix of the revised NEO scales (see Table 8), particularly the relationship between Scale N and Scale C, and Scale E and Scale O, a second-order factor analysis was completed to confirm the presence of two underlying factors, which were labelled "internalizing personality traits" and "externalizing personality traits." Internalizing personality traits were considered to be Scale N and a reflection of Scale C of the NEO--PI-R (which had a factor intercorrelation of -.47) while externalizing personality traits were considered to be Scale E, Scale O, and Scale A of the NEO-PI-R (Scale E and Scale O had a factor intercorrelation of .46; Scale E and Scale A had a factor intercorrelation of .14; Scale

O and Scale A had a factor intercorrelation of .15). Results of this analysis are presented in Tables 26 and 27. Coefficient alpha for the new Internalizing Personality Traits scale (NEO-INT) was found to be .91, while coefficient alpha for the new Externalizing Personality Traits scale (NEO-EXT) was found to be .90; raw scores for these derived variables can be found in Appendix CC.

==========

Insert Tables 26 and 27 About Here

==========

Reconstructing the model. In addition to revising operationalization of personality traits, the model was reconstructed in several ways. Although guided by the empirical findings of the first path analysis, a conceptual framework was also utilized which, when given a high intercorrelation, placed internal processes earlier in the hierarchical model than external processes. This was conducted both within constructs and across constructs, as described below. For an overview of the alternative model, see Figure 3.

==========

Insert Figure 3 About Here

==========

First, the relationship between internalizing and externalizing personality traits was examined. Given the moderate negative correlation between these variables, and the pattern of correlations with other variables in the model, it was predicted that these variables were not hierarchically related. Thus, no direct path was predicted between internalizing and externalizing personality traits.

Figure 3

Alternative Hypothesized Structural Relationship Of Personality, Defense Mechanisms, And Social Support

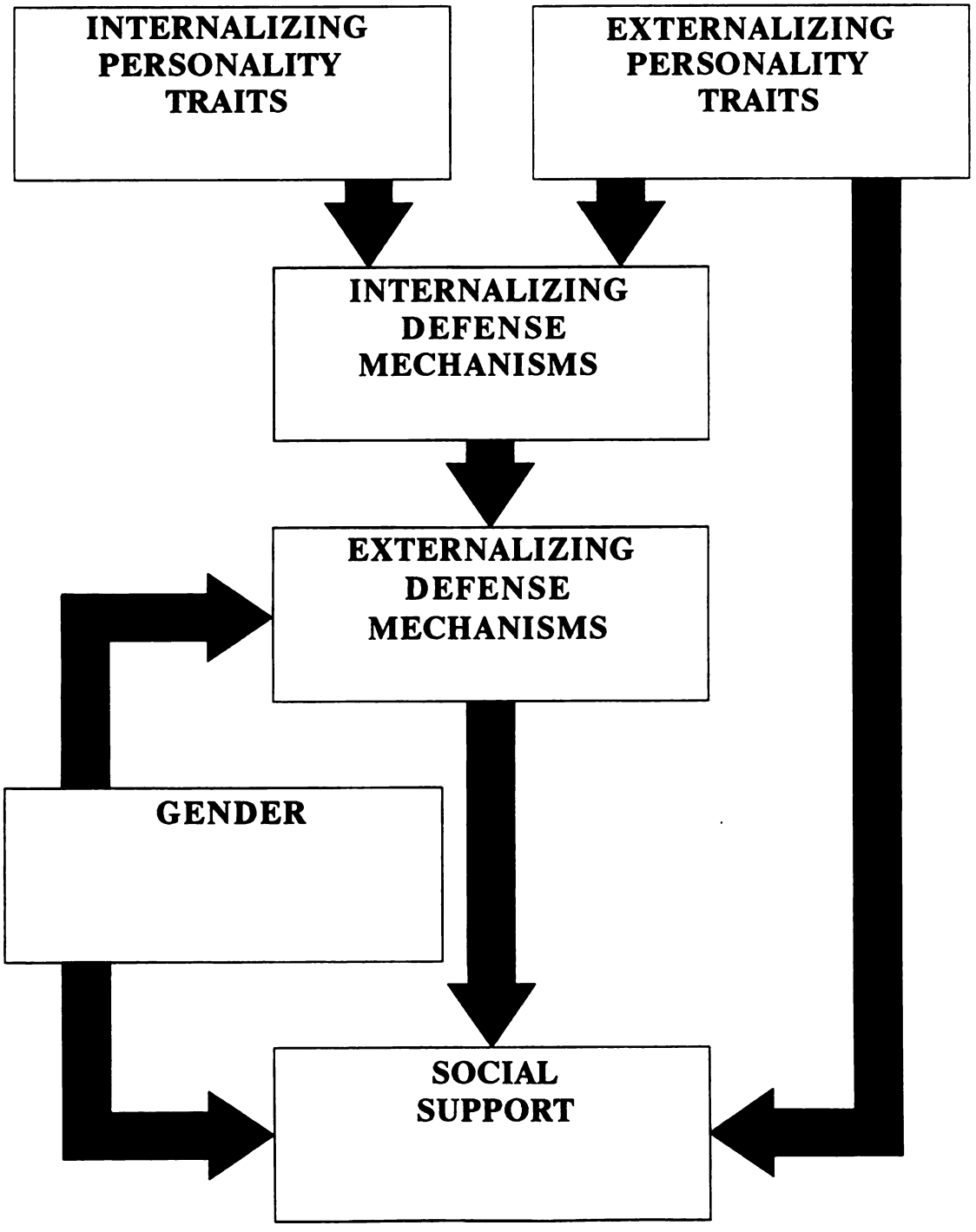

Table 26

Loadings For Second Order Factor Matrix For The Revised NEO-PI-R Scales

	Factor	
Scale	1	2
N	69	-24
C	69	-23
E	-31	66
O	-03	70
A	-20	21

Note: Decimals removed. Factor 1 interpreted as Internalizing Personality, comprised of Scale N and Scale C of the NEO-PI-R (with a reflection of Scale C being used); Factor 2 interpreted as Externalizing Personality, comprised of the Scale E, Scale O, and Scale A of the NEO-PI-R.

Table 27

Second Order Factor Matrix For The Revised NEO-PI-R Scales

Factor	1	2
1	---	
2	-18	---

Note: Decimals removed. Factor 1 interpreted as Internalizing Personality, comprised of Scale N and Scale C of the NEO-PI-R (with a reflection of Scale C being used); Factor 2 interpreted as Externalizing Personality, comprised of the Scale E, Scale O, and Scale C of the NEO-PI-R.

Second, the relationship between internalizing and externalizing defenses was examined. Given the high correlation between these variables, it was hypothesized that they are associated in hierarchical rather than orthogonal manner. Following the conceptual framework, the model was structured so that externalizing defenses was preceded and predicted by internalizing defenses.

Third, given that internalizing defenses now are hierarchically associated with externalizing defenses, the model was changed so that both internalizing and externalizing personality traits both precede and predict internalizing defenses, but that only internalizing defenses predicts externalizing defenses.

Fourth, to more clearly delineate internal and external experiences, the model was changed so that externalizing personality traits directly predicts social support. Similarly, the model was changed so that externalizing defenses directly predicts social support but internalizing defenses does not.

Finally, given empirical findings, the model was changed so that gender predicted both externalizing defenses and social support.

Testing the alternative model. The correlation matrix of all variables utilized in the revised model is presented in Table 28. Path coefficients for all hypothesized linkages are presented in Table 29, with the standard errors presented in Table 30. Errors in the model (i.e., actual minus reproduced correlations) are presented in Table 31; these errors are generally much smaller than in the original model. Overall, the model was found to be nonsignificant (Chi-square = 9.24, df = 5, $p <$ NS), indicating that the overall fit of the proposed structural model and the obtained data

do not differ significantly. Thus, this hypothesis was supported. For an overview, see Figure 4.

==========

Insert Tables 28 To 31 About Here

==========

==========

Insert Figure 4 About Here

==========

Further Analyses Of The Alternative Model

Given that the structural model adequately describes the relationship between the constructs, additional analyses were undertaken to examine the relationship among constructs that were directly and indirectly linked in the alternative model.

Analysis of the path coefficient between Internalizing Personality Traits and Internalizing Defenses. Analyses indicated a path coefficient of .40 between internalizing personality traits and internalizing defenses. With a standard error of .05, the 95% confidence interval around this path coefficient is from .30 to .50, and the 68% confidence interval around this path coefficient is from .35 to .45; since zero is not included in this interval, traditional statistical analyses would reject the null hypothesis ($p < .001$). Further, there is a greater than 99.9% inference probability that the true association between these constructs is positive.

Figure 4

Path Coefficients For Alternative Hypothesized Structural Relationship of Personality, Defense Mechanisms, and Social Support

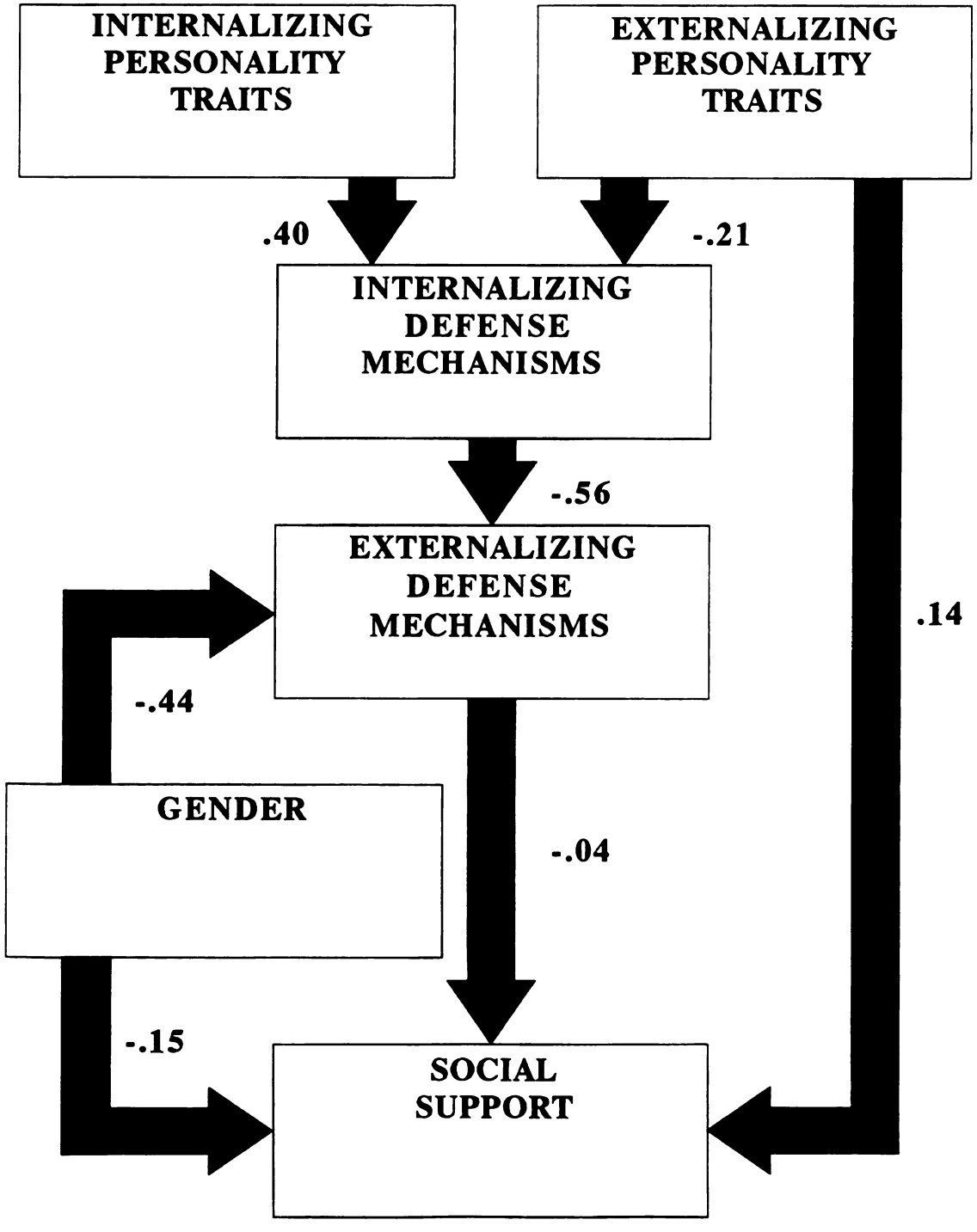

Table 28

Correlation Matrix For All Measures In The Alternative Structural Equation Model After Correcting For Attenuation Due To Measurement Error

Scale	A	B	C	D	E	F
(A) Gender	---					
(B) NEO-Internalizing	-19	---				
(C) NEO-Externalizing	-28	-18	---			
(D) DMI-Internalizing	-06	44	-28	---		
(E) DMI-Externalizing	-41	06	36	-56	---	
(F) Social Support	-17	-03	17	-06	07	---

Note: Decimals removed.

Table 29

Path Coefficients For All Linkages In The Alternative Structural Equation Model

Scale	A	B	C	D	E	F
(A) Gender	---					
(B) NEO-Internalizing	---	---				
(C) NEO-Externalizing	---	---	---			
(D) DMI-Internalizing	---	40	-21	---		
(E) DMI-Externalizing	-44	---	---	-56	---	
(F) Social Support	-15	---	14	---	-04	---

Note: Decimals removed.

Table 30

Standard Errors For Path Coefficients In The Alternative Structural Equation Model

Scale	A	B	C	D	E	F
(A) Gender	---					
(B) NEO-Internalizing	---	---				
(C) NEO-Externalizing	---	---	---			
(D) DMI-Internalizing	---	05	06	---		
(E) DMI-Externalizing	05	---	---	04	---	
(F) Social Support	06	---	06	---	07	---

Note: Decimals removed.

Table 31

Errors (Actual - Predicted Correlations) For All Linkages In The Alternative Structural Equation Model

Scale	A	B	C	D	E	F
(A) Gender	---					
(B) NEO-Internalizing	00	---				
(C) NEO-Externalizing	00	00	---			
(D) DMI-Internalizing	-04	00	00	---		
(E) DMI-Externalizing	02	22	08	02	---	
(F) Social Support	00	-04	00	-05	01	---

Note: Decimals removed.

Analysis of the path coefficient between Externalizing Personality Traits and Internalizing Defenses. Analyses indicated a path coefficient of -.21 between externalizing personality traits and internalizing defenses. With a standard error of .06, the 95% confidence interval around this path coefficient is from -.09 to -.33, and the 68% confidence interval around this path coefficient is from -.15 to -.27; since zero is not included in this interval, traditional statistical analyses would reject the null hypothesis ($p < .001$). Further, there is a greater than 99.9% inference probability that the true association between these constructs is negative.

Analysis of the path coefficient between Externalizing Personality Traits and Social Support. Analyses indicated a path coefficient of .14 between externalizing personality traits and social support. With a standard error of .06, the 95% confidence interval around this path coefficient is from .04 to .24, and the 68% confidence interval around this path coefficient is from .11 to .17; since zero is not included in this interval, traditional statistical analyses would reject the null hypothesis ($p < .01$). Further, there is a 99% inference probability that the true association between these constructs is negative.

Analysis of the path coefficient between Internalizing Defenses and Externalizing Defenses. Analyses indicated a path coefficient of -.56 between internalizing defenses and externalizing defenses. With a standard error of .04, the 95% confidence interval around this path coefficient is from -.48 to -.64, and the 68% confidence interval around this path coefficient is from -.52 to -.60; since zero is not included in this interval, traditional statistical analyses would reject the null

hypothesis ($p < .001$). Further, there is a greater than 99.9% inference probability that the true association between these constructs is negative.

Analysis of the path coefficient between Gender and Externalizing Defenses. Analyses indicated a path coefficient of -.44 between gender and externalizing defenses. With a standard error of .05, the 95% confidence interval around this path coefficient is from -.35 to -.55, and the 68% confidence interval around this path coefficient is from -.40 to -.50; since zero is not included in this interval, traditional statistical analyses would reject the null hypothesis ($p < .001$). Further, there is a greater than 99.9% inference probability that the true association between these constructs is negative.

Analysis of the path coefficient between Gender and Social Support. Analyses indicated a path coefficient of -.15 between gender and social support. With a standard error of .06, the 95% confidence interval around this path coefficient is from -.01 to -.25, and the 68% confidence interval around this path coefficient is from -.07 to -.19; since zero is not included in this interval, traditional statistical analyses would reject the null hypothesis ($p < .01$). Further, there is a 98% inference probability that the true association between these constructs is negative.

Analysis of the path coefficient between Externalizing Defenses and Social Support. Analyses indicated a path coefficient of -.04 between externalizing defenses and social support. With a standard error of .07, the 95% confidence interval around this path coefficient is from -.18 to .10; since zero is included in this interval, traditional statistical analyses would not reject the null hypothesis (p = NS).

However, there is a 72% inference probability that the true association between these constructs is negative.

Analysis of the missing link between Internalizing Personality Traits and Externalizing Defenses. Analyses indicated a correlation (corrected for attenuation) of .06 between internalizing personality traits and externalizing defenses. With a standard error of .06, the 95% confidence interval around this correlation is from -.04 to .16; since zero is included in this interval, traditional statistical analyses would not reject the null hypothesis (p = NS). There is an 85% inference probability that the true relationship between these constructs is positive. However, the difference between the actual and predicted correlation (corrected for attenuation) was .22 ($p < .01$). Thus, it appears that the model correctly predicts the direction but overestimates the strength of the relationship between these constructs, even though they are not directly linked.

Analysis of the missing link between Externalizing Personality Traits and Externalizing Defenses. Analyses indicated a correlation (corrected for attenuation) of .36 between externalizing personality traits and externalizing defenses. With a standard error of .05, the 95% confidence interval around this correlation (corrected for attenuation) is from .28 to .44; since zero is not included in this interval, traditional statistical analyses would reject the null hypothesis ($p < .001$). There is an greater than 99.9% inference probability that the true relationship between these constructs is positive. The difference between the actual and predicted correlation (corrected for attenuation) was .08 (p = NS). Thus, it appears that the model

accurately accounts for the relationship between these constructs, even though they are not directly linked.

Analysis of the missing link between Gender and Internalizing Defenses. Analyses indicated a correlation (corrected for attenuation) of -.06 between gender and internalizing defenses. With a standard error of .06, the 95% confidence interval around this correlation is from -.16 to .04; since zero is included in this interval, traditional statistical analyses would not reject the null hypothesis (p = NS). The difference between the actual and predicted correlation (corrected for attenuation) was -.04 (p = NS). Thus, it appears that the model accurately accounts for the relationship between these constructs, even though they are not directly linked.

Analysis of the missing link between Internalizing Personality Traits and Social Support. Analyses indicated a correlation (corrected for attenuation) of -.03 between internalizing personality traits and social support. With a standard error of .06, the 95% confidence interval around this correlation is from -.13 to .07; since zero is included in this interval, traditional statistical analyses would not reject the null hypothesis (p = NS). The difference between the actual and predicted correlation (corrected for attenuation) was -.04 (p = NS). Thus, it appears that the model accurately accounts for the relationship between these constructs, even though they are not directly linked.

Analysis of the missing link between Internalizing Defenses and Social Support. Analyses indicated a correlation (corrected for attenuation) of -.06 between internalizing defenses and social support. With a standard error of .06, the 95% confidence interval around this correlation is from -.16 to -.04; since zero is included

in this interval, traditional statistical analyses would not reject the null hypothesis (p = NS). The difference between the actual and predicted correlation (corrected for attenuation) was -.05 (p = NS). Thus, it appears that the model accurately accounts for the relationship between these constructs, even though they are not directly linked.

DISCUSSION

The findings of this study support the hypothesis that personality traits, defense mechanisms and social support are associated in a predictable pattern in college-aged students. Both simple (or lower order) and complex (or higher order) analyses of the relationships among measures of these constructs supported numerous hypotheses about the pattern of relationships between specific personality traits and specific defense mechanisms, while higher order path-analyses supported the hypothesis of a hierarchical, causal relationship. However, separate second-order factor analyses indicated that restructuring both the NEO-PI-R and DMI into measures of "internalizing" and "externalizing" personality traits and defenses, respectively, was warranted, and in fact facilitated the creation of a hierarchical model. Although this this study's primary purpose was not to assess the psychometric qualities of the instruments used to measure the constructs, several related findings are noteworthy.

Psychometric Qualities Of The Measures

Reliability of the measures. These analyses highlight the importance of not relying solely on alpha as a measure of internal consistency. The NEO-PI-R was found to have strong internal consistency, as evidenced by alphas ranging from .87 to .89 for each of its factors. The DMI scales were less impressive, with alphas ranging only from .60 to .83. However, confirmatory factor analyses found that, as indicated by

the number of items that were removed, both scales contained items which loaded poorly onto its assigned factor. Since the computation of alpha is in part dependent upon the number of items comprising the scale, removing the peripheral items from factors of the NEO-PI-R and DMI measures did not notably increase their alphas, although it improved the consistency of the factor loadings. Since the psychometric qualities of both instruments, and particularly the NEO-PI-R, have been thoroughly examined, these findings may represent anomalies in this study, perhaps related to the homogeneity of the sample. It was not possible to compute alpha for the NSSQ. Since ratings for each person in the network are made independently of all other ratings, there are no "items" as such in which to assess internal consistency.

Taken as a whole, the reliabilities found in this study mirror the degree to which the addressed construct being measured is considered to be "stable and enduring". The highest alphas were found for the Big-Five personality traits, which were assumed to be stable and enduring. Scales measuring defense mechanisms, assumed to be less stable and enduring, had less reliability. While defenses may be an intrapersonal process, the use of defense mechanisms is likely to be situationally based, thus lowering the alphas for these scales. Some support for this position can be found in the evidence that there is a tendency to utilize defense mechanisms from either an "internalizing" group or an "externalizing" group. Finally, the reliabilities for the employed measure of social support could not be determined.

Issues of the factors of the scales. Both the NEO-PI-R and the DMI were found to have intercorrelations between subscales which presumably measure relatively independent constructs, and the NSSQ Total Social Support Score is worth further discussion.

There are theoretical reasons that defense mechanisms would be intercorrelated. As noted by Cramer (1988), there is no theoretical or empirical reason to expect that individuals rely upon only one defensive style and rigidly apply it in all situations. Thus, although a decline in the specificity of the theory, this study's reduction of the five defense mechanisms to two defensive styles may represent an increase in the external validity (Campbell & Stanley, 1966) of this study, that is, the significance and utility of the theory. An ipsative reason for the intercorrelations found on the DMI may be due to the manner in which the test is administered, which requires subjects to choose between five alternative options when describing their reactions to various stories (see Appendix D). Thus, because only two choices can be made (i.e., most like me, least like me), three other choices must be ignored. The scoring format, which sums all related responses scored on a single factor, is set up so that as one defensive style is selected and mathematically increased, another defensive style is not ***and can not*** be selected, and thus is not mathematically increased. Such a reduction in the freedom of responses insures that the scales will be correlated to some extent. It is reasonable to expect that, were subjects to rate the likelihood of the possibility that they would use each defensive strategy on a Likert scale, a different pattern of relationships among the scales would have been found; however, previous comparisions of free- and fixed-format responses have suggested that scale scores did not differ significantly (Ihilevich & Gleser, 1986).

The correlations among scales of the NEO-PI-R are more problematic, and is discussed below as part of the theoretical implications of this study.

This study chose to focus on Total Social Support as a dependent variables, and derived this variable from the product of the Functional and Structural Support scores of the NSSQ. While Functional and Structural Support are theoretically different constructs, the total amount of functional support available to an individual will be directly related to structural issues such as network size and density. The total amount of support available can be no greater than the maximum amount the network is capable of providing. Given this, a small social support network will not be able to provide as much functional support as a larger social support network. To adjust for this, previous studies have attempted to analyze the ***mean*** amount of functional social support available (c.f., Kincaid & Caldwell, in press), however, this study was concerned with the overall ability of an individual to organize and access social support, and thus, both the total amount of functional social support and total structural support were of use for analyses.

Interpreting The Lower Order Analyses

The majority of the hypotheses regarding the relationship of personality traits to the characteristic use of defense mechanisms were supported. Examination of the magnitude of these relationships (see Table 11) indicated Scales N and Scales A contributed the strongest associations between personality and defenses. Agreeableness was significantly related to all five defense mechanisms, and Neuroticism was significantly related to four of the five defense mechanisms assessed by the DMI. These findings partially refute earlier works which suggested that measures of neuroticism and ***extraversion*** had the most predictive utility (Wiggins, 1968).

Agreeableness was found to be most strongly associated in a negative manner with the PRO, TAO scale of the DMI, and in a positive manner with the REV scales of the DMI. Scale A of the NEO-PI-R is a measure of interpersonal tendencies, with high scores associated with altruism, the ability to empathize and sympathize, and interpersonal cooperation, and low scores associated with individuals who are antagonistic, egocentric, and competitive (Costa & McCrae, 1992). The PRO and TAO both assess the tendency to project the source of one's problems out into the social environment (Ihilevich & Gleser, 1991). Thus, the negative association found between Scale A and PRO/TAO defenses indicates that individuals who are socially oriented strive to maintain a pleasant homeostasis in their interpersonal relationships are less likely to engage in the externalization of their problems. Since the REV scale assesses the degree to which such problems are internalized (Ihilevich & Gleser, 1991), it can be concluded that such socially oriented individuals internalize their problems ***instead of*** externalizing them.

Neuroticism was found to be positively associated with the TAO and TAS scales of the DMI, and negatively associated with the PRN, and REV scales of the DMI. Scale N is a measure of psychological distress and poor coping skills, with high scores associated with poor impulse control, irrational ideas, neurotic behavior, and disruptive emotion, and low scores associated with calm, even-tempered individuals who are able to cope with stressful situations without major psychological disruption (Costa & McCrae, 1992). Both the TAO and TAS scales measure coping efforts taken by individuals thought to feel inadequate, inferior, or worthless, with TAO representing a more impulsive, under-socialized effort and TAS representing a

more controlled, over-socialized (inhibited) effort (Ihilevich & Gleser, 1991). Thus the positive association found between Scale N and TAO/TAS defenses indicates that individuals with increasing levels of psychological distress and feelings of inadequacy may attempt to compensate or cope with these feelings by increasing reliance on the blame of self or others. Either response (TAO/TAS) represents an unhealthy attempt at coping, for blaming either oneself or others for problems and emotions (a) is not likely to be a fully realistic appraisal, and (b) offers no attempts at solving the problem.

Similarly, the PRN and REV scales of the DMI both measure the tendency to minimize the expression of strong affects (through intellectualization or even repression) and to avoid stimulating anxiety (Ihilevich & Gleser, 1991). Thus, the negative association found between Scale N and PRN/REV defenses indicates that individuals with increasing levels of psychopathology are less likely to utilized defenses which might further heighten their anxiety. Taken together, these results suggest that neurotic individuals seek to minimize their own sense of anxiety and search for the source of their problems rather than a solution to their problems. Such a finding fits Freud's (1936) theoretical description of neurosis.

Extraversion was found to be negatively associated with the TAO scale of the DMI. Scale E is a measure of sociability, with high scores associated with liking people, optimism, and excitability, and low scores associated with reserved, independent individuals (Costa & McCrae, 1992). As noted, the TAO scale measures an aggressive, impulsive, under-socialized effort to control feelings of inadequacy and doubt. Thus, the negative association found between Scale E and TAO defenses

indicates that individuals who are socially oriented and attentive to the quality of interpersonal relationships are less likely to engage in the aggressive blame of others.

Conscientiousness was found to be positively associated with the PRN, REV scales of the DMI, and negatively associated with the TAO, TAS scales of the DMI. Scale C of the NEO-PI-R is a measure of self-control, with high scores associated with good impulse control, planning, organization, and determination, and low scores associated with a flexible ethics and decreased goal-directed behavior (Costa & McCrae, 1992). As noted, PRN/REV defenses measure the tendency to avoid strong affects. Thus, the positive association between Scale C and PRN/REV defenses indicates that individuals who are self-controlled and see themselves as a causal agent in the determination of significant aspects of their lives also tend to minimize the affective component of their coping efforts and increase rationale, dispassionate efforts. Similarly, since TAO/TAS defenses assess over- and under-controlled efforts at assessing identifying sources of problems and assessing blame, the negative association between Scale C and TAO/TAS defenses indicates that individuals who believe they can control all aspects of their lives do not attempt to blame themselves or others for their problems. The positive association between Scale C and TAO defenses makes theoretical sense; however, the positive association between Scale C and TAS defenses was contrary to the predicted relationship and is difficult to interpret theoretically. Perhaps this finding indicates that conscientious and controlled individuals tend not to assign blame to themselves or others, and approach all problems in a rationale, dispassionate manner.

An unexpected positive association found between Extraversion and REV defenses appears to indicate that individuals who value social relationships repress their affects, perhaps in order to maintain the relationships. There was no relationship found between Scale O and REV defenses, although a negative relationship was anticipated. This appears to indicate that the extent to which an individual is imaginative, sensitive, and curious is not associated with the degree of repression utilized as a coping style.

Interpreting The Original Path Model

Following the tests of the simple relationships of the constructs, the original path model was revised to include the effects of gender, and to account for the high intercorrelations of the scales of the DMI.

A second-order factor analysis suggested that the intercorrelations of the scales could be accounted for by two underlying factors, which were interpreted as an "internalizing" and "externalizing" defensive style. As noted, the strongest associations between personality traits and the characteristic utilization of defense mechanisms were found in Scale N and Scale A; such findings facilitated interpretation of the later second-order factor analysis of the DMI. The Neuroticism Scale, which correlated strongly with each defense mechanisms, has previously been discussed as a measure of general psychopathology (Digman, 1990; Bergeman, Chipuer, Plomin et. al, 1993); thus, Scale N would be expected to be globally correlated with defense mechanisms, for heightened expressions of both neurotic personality traits and defense mechanisms would be considered evidence of

psychopathology. Further, the Agreeableness scale, which correlated strongly with defenses that involve other people, has previously been discussed as a measure of interpersonal tendencies (Costa & McCrae, 1992); thus, Scale A would be expected to be globally correlated with interpersonal defense mechanisms, for heightened tendencies for interpersonal orientations should lead to reduced use of interpersonal defense mechanisms. Therefore, it appears that the second order factor analyses of both the NEO-PI-R and the DMI serve to reduce both measures to the two general dimensions representing the strongest observed correlations among personality and defense mechanisms. Although reducing the five defense mechanisms to two styles would reduce predictive ability within specific aspects of the model, it eased the prediction and interpretation of the overall model.

The original hierarchical structural model was not supported, although the majority of the hypotheses about the relationships among the NEO-PI-R, the DMI, and the NSSQ were in both the expected directions and of magnitude sufficient to reach statistical significance. There are several possible reasons for this.

First, it is possible that although specific correlations between factors of the NEO-PI-R, DMI, and NSSQ were correctly predicted, these correlations were either spurious. Spurious correlations would add to the error variance of a structural model (Costner, 1989), and lead to a significant Chi-square when the structural, causal ***interrelationships*** were assessed through the path analysis. However, an argument against this can be mounted. While correlations are not causation, causation creates correlation (Campbell & Stanley, 1963); both theory and results of additional analyses of specific relationships between personality traits, defense mechanisms, and social

support suggested that these relationships ***were not*** spurious. This suggests the original model was incorrectly constructed.

Second, it is possible that specific linkages in the model were predicted incorrectly. Again, however, theory and results of additional analyses of specific relationships suggest that this model, with the exception of a few linkages, was properly formed.

Finally, it is possible that the original model was too complex. Since increasing the degrees of freedom allow even small differences between the predicted and observed models to be detected in a Chi-square analysis, particularly with increasing sample size, it is possible that the model was largely correctly formed but imperfect; thus, given the statistical power of the study, the model was rejected through the Chi-square analyses.

In hindsight, it appears most likely that the failure of the original path model was due to a combination of incorrect prediction of a small number of the linkages in a highly complex model with analyses conducted that were sensitive to minute differences between the predicted and observed models. Clearly, some linkages were predicted incorrectly, given the failure of three of 15 hypotheses regarding the relationship of personality traits to the characteristic utilization of defense mechanisms, and the failure of two of the five hypotheses regarding the relationship of the characteristic use of defense mechanisms to social support. Since over 15 linkages were proposed and the study obtained an ***n*** of nearly 300, the model had a large number of degrees of freedom, and thus a great deal of statistical power to detect the impact of these errors, and reject the model as a whole.

Interpreting The Alternative Path Model

In examining the analyses of the original model, it became clear that cosiderable error in the model may be due to the high correlations among personality traits that were not accounted for by the model. A second-order factor analysis conducted on the scales of the NEO-PI-R found evidence of two underlying factors, which were again interpreted as representing "internalizing" and "externalizing" personality styles. As with the DMI, the reduction of the personality traits to two styles also reduced the predictive ability of the model while easing the prediction and interpretation of the overall model. However, this also creates theoretical issues with the five-factor model.

Having reorganized the personality traits into two overarching styles, the path model was reconstructed, using both theory and the results of the first path analysis, to account for the relationship between all the constructs. Both internalizing and externalizing personality traits were found to predict internalizing defense mechanisms, while personality traits are associated with externalizing defense mechanisms only through internalizing defense mechanisms. It appears that a hierarchical relationship occurs ***within*** constructs as well as ***between*** constructs; support was found for locating intrapersonal processes prior to interpersonal processes in the model. Most notably, the utilization of internalizing defenses such as denial and repression seems to preclude the use of externalizing defenses such as projection and aggression. Further, externalizing personality traits were found to be directly linked to social support; this suggests that, regardless of the characteristic defenses

utilized, the formation and management of relationships with other people is partially dependent upon one's orientation toward the world.

Although gender effects are reported by the developers of both the NEO-PI-R and the DMI, these analyses suggest that the influence of gender is most evident in interpersonal settings, particularly in the use of defense mechanisms which involve other people. Gender was not found to be directly associated with personality traits. Women were found to have less reliance on externalizing defense mechanisms and utilized greater levels of social support, findings consistent with prior literature. Surprisingly, however, the use of internalizing defenses was not directly associated with gender. Implicit rule structures in society could account for this: men and women may both be free to develop defensive styles which impact primarily upon themselves, but women are encouraged to be caretaking and nurturing of others, and thus implicitly restricted from developing defensive styles which could impact negatively upon others.

Overall, the Chi-square analyses indicated that the revised model fits the data, in that it adequately accounts for observed correlational relationships found among the constructs (both those with direct links and those without direct links). Errors between the predicted and observed correlations were generally low; the weakest aspect of the model involved the construct of social support.

The construct of social support was the most problematic aspect of this study. Independent of the model developed, social support was not found to be strongly correlated with any other construct measured. This may be because the psychometric properties of the NSSQ measure may not be adequate for empirical studies as has

been previously reported (a contradiction of previous research; c.f. Bruhn & Phillips, 1984). This may also be because there is in fact no true association of social support to more internal processes, a position difficult to defend theoretically. However, a likely alternative explanation is that the NSSQ measures the perception of social support but does not measure the actual quality of interpersonal relationships. Both the NEO-PI-R and the DMI are self-report measures of oneself only (and, incidently, have a more opaque face validity, or a less clear association between the items on the scale and the underlying constructs being measured). The NSSQ, however, in addition to being transparent in its objectives, measures only the perceptions of ***one half of a dyadic relationship***. Were it possible to assess both members' perceptions of the social support given for each and every dyadic relationship reported by each and every subject (a daunting task), a more accurate measure of the quality of these relationships could be achieved and thus, with less error variance in the measure, the magnitude of the association of social support to personality traits and defensive styles would be likely to increase. Further, since there is no way to assess the internal consistency of the NSSQ, no corrections could be made for attenuation due to measurement error. This meant that the NSSQ was entered into the path model with a perfect reliability, a proposition doubtful in reality. By minimally the estimating alpha to be near .90, the magnitude of these relationships would increase; if alpha were further reduced (that is, if estimates of the error in measurement were increased), the magnitudes would continue to rise. Since no estimate of measurement error was made for the NSSQ while actual error in measurement seems certain, it is likely that the underlying true association between these constructs is stronger than

found here. Thus, within this framework, the portions of the model involving social support are likely to be a conservative estimate of the relationship to personality traits and defense mechanisms.

Theoretical Implications

This study found that the factors of the NEO-PI-R could be reduced to two dimensions, labeled "internalizing" and "externalizing" traits; clearly, however, these findings replicate and validate in other populations. If the five factors are truly independent and orthogonal, how can two underlying factors account for the correlations found? Perhaps, as suggested by McAdams (1992), the five factors are actually trait categories rather than distinct entities, and further, that these categories have overlapping boundaries. In this view, the five-factor theory operates at "the broadest level of hierarchy, and in that sense they are to personality what the categories of 'plant' and 'animal' are to the world of natural objects - extremely useful for some initial rough distinctions but of less value for predicting specific behaviors" (John, 1989; p. 267). Or perhaps, as suggested by Wiggins and Pincus (1992), the five-factor model is complementary to other circumplex models of traits (c.f. Benjamin, 1974; Leary, 1957; Wiggins, 1979). In this view, the factors of extraversion and agreeableness (in the five-factor model) are seen as more stable across contexts, while circumplex dimensions of dominance and nurturance (in the circumplex model) are seen as more influenced by context. An additional, parsimonious explanation can be found by conceiving of the two underlying dimensions of the NEO-PI-R as "intrapersonal" traits and "interpersonal" traits. By

conceiving of the dimensions in this manner, a parallel can be drawn to suggestions that the Big Five factors supplement circumplex classifications with the additional dimensions of conscientiousness, neuroticism, and openness to experience (Trapnell & Wiggins, 1990; Wiggins & Trapnell, 1992).

As noted by McAdams (1992), the primarily utility of trait theory is the explanation of consistency in human behavior. Thus, Zuroff (1986) has distinguished three different types of behavioral consistency in which traits could be expressed, with each position accepted and argued by different theorists using different studies as evidence. Zuroff's first position is that traits cause behavioral consistency across all situations and contexts. His second position is that traits cause behavioral consistency within a finite number of situations and contexts otherwise have no effect. His third position is that traits cause behavioral consistencies averaged across all situations and contexts.

The results of this study support Zuroff's third position. First, the reduction of the five scales of the NEO-PI-R to two dimensions represents a move from higher predictive specificity to lower predictive specificity; they become, therefore, a measure of the general tendencies of the subject. Similarly, the reduction of the DMI from five scales to two dimensions allows the assessment of general behavioral tendencies as well. Second, the DMI presents a number of stimulus scenarios which vary in contextual features, and determines the relative strength of each defense mechanisms by aggregating tendencies across all these contexts. Finally, correlations between the specific personality traits and specific defense mechanisms as well as the magnitude of the path coefficients indicates that there is not a perfect causal

relationship. Taken together, the results of this study indicated that specific personality traits are ***generally*** related to specific defense mechanisms, that specific defense mechanisms are ***generally*** related to social support, and that the path model ***globally*** describes the hierarchical relationship among the constructs. Thus, it appears the path model allows, with a high degree of accuracy, the ***probability*** of the characteristic use of certain defense mechanisms when given information about personality traits, and the ***probability*** of the availability of social support when given information about the characteristic use of defense mechanisms. Variance in the actual usage of defense mechanisms and the actual availability of social support would therefore vary with context and other situational variables. This is highly complementary with the view of Buss (1989), who, in comparing trait theory with the experimental manipulation of specific responses, argued that traits are mostly clearly expressed in familiar contexts where considerable latitude about the choice of response is given over a extensive period of time. This view can be applied to these findings in statistical terms: increasing the degrees of freedom (i.e., contextual and situational factors) also increases the likelihood of the expression of personality traits through the characteristic use of defense mechanisms, and subsequently, the availability of social support.

Clinical Implications

This study is able to contribute to knowledge in clinical settings, both diagnostic and treatment. Costa (1986; 1991) has expressed his hope that the five-factor model, as assessed by the NEO-PI-R, could become an integral part of

clinical personality assessments, and has suggested that the combination of current clinical assessment tools with personality measures such as the NEO-PI-R could lead to more complete understanding of clients. This study further increases the heuristic knowledge that can be derived from the NEO-PI-R, and expands upon the data provided by the DMI. Since DSM-III-R (American Psychiatric Association, 1987) describes Axis II disorders, in part, in terms of personality traits, the association of such traits with defense mechanisms suggests the NEO-PI-R may have utility in increasing diagnostic accuracy. Further, while not predicting any diagnostic outcome, this study makes plausible that many of the constructs of interest to clinicians (i.e., defensive style, interactional patterns with others) are clearly related to personality traits, and may be ***caused*** by these traits. Efforts to explain or intervene at either the level of defense mechanisms or of social interactions (both of which frequently occur in psychotherapy) may be misguided without an awareness of the underlying personality traits that are driving such processes. While such information may have emerged during the course of therapy, this study suggests a model which can provide early insights and a framework for understanding the client. Thus, understanding the pathways between intrapersonal and interpersonal behavior can assist in answering diagnostic questions and can refine the application of treatment techniques.

Summary

Personality theory suggests that traits, and particularly those traits described in the five-factor theory, are stable and enduring characteristics of individuals that underlie many aspects of both intrapersonal and interpersonal behavior. To examine

this proposition, this study proposed and tested aspects of the relationship between personality traits, the characteristic use of defense mechanisms, and social support. Preliminary analyses suggested that specific personality traits could be linked to specific defense mechanisms, and, similarly, that specific defense mechanisms could be linked to social support. When integrating these constructs into a structural model, however, it was found that these constructs were best represented by a reduction to "internalizing" and "externalizing" dimensions. Using these dimensions a hierarchical structural model was developed that was found to represent the observed data adequately. This model suggests that interpersonal processes are influenced by the characteristic use of defense mechanisms, which are themselves influenced by underlying personality traits; thus, as predicted, it provides support for a hierarchical relationship.

APPENDICES

APPENDIX A

APPENDIX A

Informed Consent Form

This research project is being undertaken to understand the relationship between several different aspects of personality and human behavior. The surveys you will complete are commonly used in psychological research. Following completion of the surveys, you will be fully informed about the exact details of this project and any questions you have will be answered.

Your participation is completely voluntary and you may withdraw your agreement to participate at any time without penalty. If you choose to participate, you will be asked to complete three surveys and a brief demographic profile. These surveys will take approximately two hours to complete.

Since you will be awarded research credits in return for participation, total anonymity can not be provided; however, all answers you provide to the surveys are anonymous and confidential. That is, your name will not appear in the same place as any survey results. However, because the answers to surveys will be anonymous, no personal information about results can be given to you. All information you provide is strictly confidential, and you not will not be identified in any report of the research findings.

By completing and returning these questionnaires, you are indicating your voluntary agreement to participate in this project.

APPENDIX B

APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE

1. SEX: ___ Female

   ___ Male

2. AGE: ___

3. EDUCATIONAL LEVEL: ___ Freshman

   ___ Sophomore

   ___ Junior

   ___ Senior

   ___ Graduate/Returning Student

4. MARITAL STATUS: ___ Single

   ___ Married

   ___ Divorced or Separated

   ___ Widowed

5. ETHNIC BACKGROUND: _____

APPENDIX C

APPENDIX C

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE NEUROTICISM SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C	REMOVED?
1	**35**	-3	-1	6	-1	
6	**45**	-14	-2	-21	-12	
11	**59**	-10	13	-4	-14	YES
16	**47**	-26	-17	10	-10	
21	**26**	11	26	2	-13	YES
26	**40**	-26	-14	-9	-36	
31	**40**	1	-10	11	-12	
36	**36**	-6	0	-41	-22	
41	**59**	-26	-8	-1	-32	
46	**41**	-10	6	16	-14	
51	**50**	6	8	-6	-22	
56	**27**	-21	-17	-14	-28	
61	**44**	-2	5	9	-14	
66	**27**	-15	-16	-51	-12	
71	**50**	-6	20	3	-17	
76	**47**	-10	2	8	-15	
81	**24**	-3	15	22	-16	YES
86	**53**	10	10	6	-19	
91	**48**	-8	-7	-9	-17	
96	**26**	-12	-5	-35	-12	
101	**38**	3	1	5	-16	
106	**31**	-1	-2	11	1	
111	**39**	27	29	18	-7	
116	**37**	-25	-12	-10	-29	
121	**29**	7	22	2	-13	
126	**25**	-19	-10	-45	-13	
131	**40**	-8	-5	-1	-20	
136	**52**	-23	-16	4	-27	
141	**13**	20	31	5	-8	YES
146	**45**	-8	6	8	-36	
151	**44**	3	-1	11	-3	
156	**40**	-4	-1	-35	-11	

ITEM	N	E	O	A	C	REMOVED?
161	**50**	-31	-20	2	-41	
166	**21**	-42	-16	-11	-33	YES
171	**36**	-13	0	-8	-25	
176	**30**	-25	-21	-16	-39	
181	**39**	-13	-4	12	-3	
186	**16**	18	27	-3	7	YES
191	**52**	-15	-7	-16	-32	
196	**29**	-14	-15	-1	-25	
201	**21**	19	7	-7	-14	
206	**32**	-27	-20	-9	-40	YES
211	**31**	14	21	21	3	
216	**35**	4	12	-16	4	
221	**61**	-26	-8	-12	-49	
226	**19**	9	4	9	0	
231	**28**	12	18	-6	-16	
236	**41**	-26	-8	-22	-35	

Note: n = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX D

APPENDIX D

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE EXTRAVERSION SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C	REMOVED?
2	-8	**32**	16	40	4	YES
7	-26	**53**	19	-4	5	
12	-4	**8**	-14	-49	19	YES
17	0	**14**	22	0	-25	YES
22	4	**35**	30	-4	3	YES
27	1	**36**	28	22	6	
32	-3	**47**	31	28	15	
37	-6	**49**	7	6	-3	
42	-26	**-1**	-11	-13	20	YES
47	-16	**19**	9	8	38	YES
52	5	**22**	17	5	9	
57	-1	**47**	35	19	12	
62	-8	**46**	26	46	23	YES
67	1	**39**	17	26	-12	
72	-17	**34**	10	-4	14	
77	-18	**27**	12	9	17	
82	5	**35**	40	2	-5	YES
87	-22	**48**	32	40	12	
92	-20	**40**	27	57	14	YES
97	23	**28**	11	15	-5	
102	-21	**28**	11	-16	10	
107	-3	**51**	23	7	4	
112	2	**32**	40	1	5	YES
117	-2	**58**	38	15	11	
122	-6	**56**	31	25	9	
127	-9	**41**	21	30	5	
132	-13	**30**	14	6	23	
137	-33	**50**	31	13	19	
142	-1	**39**	20	-2	-4	
147	-4	**23**	20	42	-8	YES
152	-19	**47**	23	17	24	
157	-5	**11**	-22	-17	-2	YES

ITEM	N	E	O	A	C	REMOVED?
162	-29	**39**	6	3	22	
167	8	**11**	-2	2	13	YES
172	0	**34**	36	17	-1	YES
177	-12	**63**	25	24	16	
182	5	**37**	45	25	17	YES
187	-1	**53**	27	23	14	
192	-4	**37**	8	-18	2	
197	-6	**23**	11	0	10	
202	-2	**24**	13	-3	0	
207	-14	**28**	30	10	16	YES
212	-2	**42**	29	19	10	
217	-2	**57**	23	0	3	
222	-31	**25**	20	-3	32	YES
227	-7	**62**	33	9	17	
232	3	**40**	7	14	7	
237	-2	**53**	28	18	12	

Note: n = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX E

APPENDIX E

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE OPENNESS SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C	REMOVED?
3	5	13	**31**	-8	-5	
8	-5	11	**45**	4	2	
13	7	33	**37**	7	12	
18	-10	4	**25**	25	-17	
23	-6	1	**37**	-13	-3	
28	5	22	**37**	12	4	
33	11	25	**40**	4	-19	
38	12	23	**42**	9	6	
43	14	35	**44**	18	1	
48	-6	29	**32**	20	21	
53	-8	24	**50**	2	9	
58	7	33	**47**	20	3	
63	23	29	**36**	-1	-14	
68	7	23	**41**	24	3	
73	1	31	**35**	20	18	YES
78	-7	-26	**-10**	-9	-19	YES
83	-13	11	**17**	-3	22	YES
88	-8	12	**23**	-11	-15	
93	19	22	**39**	18	-19	
98	-5	13	**55**	14	6	
103	7	31	**46**	20	9	
108	-12	13	**14**	7	14	YES
113	-17	11	**39**	0	9	
118	1	28	**36**	7	10	
123	24	30	**43**	8	0	
128	-1	31	**56**	20	0	
133	15	39	**39**	22	5	YES
138	-20	2	**11**	-5	-6	YES
143	-17	3	**20**	3	10	
148	-3	0	**28**	14	-5	
153	21	10	**20**	-1	-27	YES
158	16	26	**44**	10	4	

ITEM	N	E	O	A	C	REMOVED?
163	6	24	**54**	19	9	
168	-1	24	**30**	7	2	YES
173	-3	19	**49**	16	7	
178	-5	25	**39**	38	11	YES
183	-1	36	**44**	22	13	YES
188	0	21	**56**	16	1	
193	3	32	**30**	28	22	YES
198	-8	19	**29**	10	-13	
203	-2	30	**43**	12	30	
208	2	4	**25**	31	2	YES
213	5	17	**48**	16	-2	
218	0	11	**36**	5	-10	
223	9	29	**49**	11	-2	
228	-19	7	**15**	9	-4	YES
233	-8	33	**45**	2	33	
238	-11	6	**13**	-3	-6	YES

Note: n = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX F

APPENDIX F

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE AGREEABLENESS SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C	REMOVED?
4	-28	27	16	**40**	8	
9	1	-12	-18	**19**	-1	
14	-17	15	7	**56**	11	
19	4	-2	11	**41**	4	
24	5	-11	-5	**35**	-11	
29	13	21	25	**20**	-1	YES
34	-10	26	19	**34**	7	
39	-21	4	7	**55**	8	
44	-4	31	23	**46**	16	
49	-13	-25	-36	**15**	-5	YES
54	5	-19	-3	**21**	-8	
59	-22	2	11	**28**	-12	
64	-26	3	3	**30**	-1	
69	-2	-10	-20	**21**	1	YES
74	-13	40	24	**55**	18	
79	5	-14	-7	**34**	-10	
84	16	5	8	**44**	-7	
89	16	18	10	**26**	9	
94	-12	17	7	**39**	14	
99	-1	9	16	**43**	8	
104	-1	43	38	**38**	24	YES
109	9	-1	2	**37**	-8	
114	1	-6	3	**37**	10	
119	4	19	19	**23**	12	
124	-26	27	24	**44**	13	
129	0	38	33	**28**	23	YES
134	-1	37	38	**41**	19	YES
139	-16	1	-1	**27**	7	
144	38	-25	-19	**6**	-32	YES
149	4	16	18	**29**	14	
154	-17	16	11	**37**	10	
159	-20	-5	-2	**47**	14	

ITEM	N	E	O	A	C	REMOVED?
164	-14	46	32	**26**	24	YES
169	-3	-19	-12	**31**	0	
174	17	-17	-22	**19**	-20	
179	3	35	38	**38**	26	YES
184	-11	32	28	**54**	11	
189	-20	-6	6	**48**	11	
194	-2	33	36	**40**	22	YES
199	-21	0	9	**32**	-3	
204	5	-12	2	**16**	-1	
209	6	36	37	**44**	24	YES
214	-8	22	16	**33**	10	
219	5	-12	-6	**33**	-11	
224	1	34	30	**42**	29	
229	-26	25	16	**26**	31	YES
234	6	-12	0	**30**	-19	
239	5	-1	-5	**9**	1	YES

Note: n = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX G

APPENDIX G

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE CONSCIENTIOUSNESS SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C	REMOVED?
5	-13	2	3	-11	**22**	
10	-1	2	-15	-5	**23**	
15	-4	15	19	25	**40**	
20	2	-17	-21	-21	**15**	YES
25	-27	3	-15	-3	**55**	
30	-27	-8	-13	5	**22**	
35	-2	26	33	16	**18**	YES
40	-9	1	-13	6	**43**	
45	-26	6	0	1	**34**	
50	-23	21	-7	-5	**55**	
55	-35	-2	-12	-4	**39**	
60	-5	9	12	6	**32**	
65	-9	20	23	5	**33**	
70	-7	-9	1	5	**28**	
75	-11	16	13	11	**32**	
80	-44	17	1	5	**36**	
85	-24	20	6	12	**55**	
90	-25	-1	-4	3	**28**	
95	-38	1	0	8	**42**	
100	-5	2	-8	9	**44**	
105	-12	1	0	6	**3**	YES
110	-16	31	22	21	**55**	
115	-54	12	0	16	**54**	
120	-24	-8	-6	3	**42**	
125	-17	17	15	-3	**34**	
130	-28	15	6	12	**59**	
135	-12	29	17	18	**46**	
140	-20	28	17	14	**41**	
145	-25	27	10	12	**51**	
150	-13	-30	-24	-1	**8**	YES
155	-40	21	13	9	**38**	
160	7	2	-6	-19	**11**	YES

ITEM	N	E	O	A	C	REMOVED?
165	-5	0	-10	4	**17**	
170	-15	32	19	10	**48**	
175	-38	27	20	16	**41**	YES
180	-23	-6	-8	13	**30**	
185	-13	35	23	12	**45**	
190	9	-9	-10	1	**16**	YES
195	-10	24	18	15	**41**	
200	-20	30	19	19	**53**	
205	-29	5	-11	11	**40**	
210	-3	14	-1	12	**43**	
215	-10	34	28	18	**44**	YES
220	-27	0	-9	5	**33**	
225	-20	-13	-9	18	**35**	
230	9	-13	-20	-13	**22**	
235	-34	22	3	4	**54**	
240	-4	-12	-9	4	**19**	YES

Note: ***n*** = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX H

APPENDIX H

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED NEUROTICISM SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C
1	**35**	-3	-1	4	-3
6	**47**	-16	0	-23	-14
11	**58**	-10	17	-8	-17
16	**48**	-25	-15	9	-11
26	**43**	-23	-12	-7	-37
31	**42**	6	-10	9	-13
36	**36**	-3	2	-43	-25
41	**60**	-23	-5	0	-32
46	**41**	-10	7	17	-17
51	**47**	7	10	-11	-22
56	**28**	-19	-17	-13	-29
61	**43**	0	7	7	-15
66	**29**	-13	-13	-52	-14
71	**49**	-6	23	0	-19
76	**46**	-11	5	6	-16
86	**53**	8	11	3	-19
91	**47**	-9	-5	-10	-16
96	**27**	-9	-5	-36	-13
101	**38**	4	3	1	-16
106	**30**	-2	-1	9	0
116	**37**	-23	-12	-8	-30
121	**26**	8	22	1	-12
126	**26**	-18	-8	-47	-12
131	**42**	-5	-3	-5	-20
136	**53**	-20	-12	5	-28
146	**44**	-9	6	8	-35
151	**45**	2	1	5	-4
156	**39**	-1	1	-38	-13
161	**51**	-30	-19	4	-41
171	**34**	-12	2	-6	-25
176	**30**	-21	-19	-12	-41
181	**37**	-11	-2	12	-4

ITEM	N	E	O	A	C
191	**53**	-14	-6	-17	-33
196	**30**	-12	-14	-2	-24
201	**21**	18	7	-12	-12
211	**32**	14	20	16	4
216	**35**	3	13	-23	5
221	**62**	-24	-4	-11	-48
226	**20**	11	5	7	0
231	**26**	11	20	-8	-17
236	**41**	-26	-6	-18	-37

Note: ***n*** = 287. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX I

APPENDIX I

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED EXTRAVERSION SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C
7	-28	**54**	18	-7	6
27	0	**38**	27	19	5
32	-5	**46**	30	22	14
37	-6	**49**	7	3	-2
52	4	**18**	14	2	11
57	-4	**44**	35	14	13
67	0	**40**	16	23	-11
72	-17	**38**	10	-11	14
77	-19	**27**	11	7	18
87	-24	**48**	29	37	14
97	23	**30**	11	11	-5
102	-23	**30**	13	-19	9
107	-2	**52**	24	2	4
117	-3	**60**	35	7	13
122	-8	**55**	29	17	10
127	-11	**40**	19	27	5
132	-14	**28**	14	0	22
137	-33	**49**	31	8	20
142	-2	**35**	15	-6	-2
152	-19	**47**	22	10	25
162	-28	**40**	5	-3	23
177	-13	**63**	21	17	19
187	-2	**52**	26	15	13
192	-5	**38**	9	-24	2
197	-7	**25**	13	-4	11
202	-2	**24**	9	-8	1
212	-3	**40**	28	12	11
217	-3	**57**	22	-6	7
227	-7	**62**	32	1	18
232	4	**41**	5	11	9
237	-2	**52**	29	12	12

Note: n = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX J

APPENDIX J

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED OPENNESS SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C
3	3	6	**35**	-10	-4
8	-8	10	**47**	3	2
13	6	30	**39**	0	12
18	-12	3	**21**	28	-16
23	-8	-1	**40**	-13	-3
28	1	22	**36**	11	4
33	8	24	**41**	1	-19
38	10	20	**43**	5	5
43	12	34	**43**	13	0
48	-9	27	**31**	16	21
53	-12	19	**54**	0	8
58	4	30	**47**	12	4
63	21	26	**36**	-8	-13
68	6	23	**41**	19	2
88	-10	13	**21**	-13	-15
93	16	18	**38**	17	-20
98	-7	9	**56**	10	5
103	3	26	**45**	14	8
113	-19	9	**41**	-1	7
118	-1	28	**33**	1	13
123	23	25	**42**	-1	0
128	-4	31	**56**	15	-1
143	-17	2	**17**	3	10
148	-7	-2	**26**	14	-5
158	14	24	**44**	5	6
163	3	20	**54**	15	9
173	-5	18	**48**	15	6
188	-3	19	**59**	12	0
198	-11	17	**25**	10	-14
203	-3	25	**46**	4	30
213	1	11	**47**	15	-4

ITEM	N	E	O	A	C
218	-2	11	**37**	2	-9
223	8	27	**48**	3	-1
233	-9	29	**44**	-4	30

Note: ***n*** = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX K

APPENDIX K

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED AGREEABLENESS SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C
4	-31	27	14	**43**	9
9	0	-9	-19	**19**	-1
14	-18	13	4	**57**	12
19	4	-4	11	**43**	5
24	4	-11	-6	**38**	-10
34	-9	23	18	**29**	9
39	-22	5	4	**58**	9
44	-7	26	20	**41**	17
54	5	-21	-4	**23**	-7
59	-23	2	8	**32**	-11
64	-26	5	1	**35**	-3
74	-15	36	22	**53**	19
79	6	-16	-9	**35**	-9
84	14	2	7	**45**	-6
89	15	19	10	**20**	9
94	-12	15	5	**38**	15
99	-2	10	15	**42**	6
109	7	-2	-2	**39**	-10
114	1	-7	0	**36**	10
119	0	19	17	**19**	12
124	-28	24	23	**43**	12
139	-14	3	-1	**29**	9
149	3	13	15	**23**	14
154	-16	15	9	**37**	10
159	-20	-7	-4	**52**	14
169	-2	-17	-13	**34**	-1
174	18	-17	-22	**23**	-19
184	-12	30	25	**52**	12
189	-21	-8	3	**51**	12
199	-22	1	5	**35**	-3
204	6	-12	4	**16**	-1
214	-10	22	14	**32**	11

ITEM	N	E	O	A	C
219	5	-12	-6	**37**	-9
224	-2	31	30	**32**	28
234	4	-13	0	**34**	-19

Note: ***n*** = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX L

APPENDIX L

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED CONSCIENTIOUSNESS SCALE OF THE NEO-PI-R

ITEM	N	E	O	A	C
5	-12	1	3	-15	**23**
10	2	4	-16	-8	**18**
15	-4	13	19	20	**39**
25	-25	4	-17	-4	**57**
30	-25	-7	-14	8	**19**
40	-7	-1	-15	5	**40**
45	-25	2	-3	0	**35**
50	-21	21	-7	-11	**56**
55	-34	-3	-14	-4	**39**
60	-5	6	12	5	**34**
65	-8	19	23	0	**37**
70	-9	-11	1	4	**26**
75	-12	16	13	7	**34**
80	-44	16	1	4	**35**
85	-24	20	3	6	**54**
90	-24	-5	-5	2	**26**
95	-39	-1	-1	6	**40**
100	-4	-1	-7	7	**43**
110	-17	28	19	13	**57**
115	-53	11	-2	16	**53**
120	-21	-10	-3	4	**43**
125	-15	16	15	-8	**36**
130	-28	15	2	8	**58**
135	-11	25	15	12	**49**
140	-21	26	17	10	**40**
145	-25	27	8	7	**52**
155	-41	19	11	9	**37**
165	-3	-1	-8	2	**17**
170	-14	30	21	5	**48**
180	-20	-9	-7	15	**31**
185	-14	32	22	4	**46**
195	-10	23	18	11	**43**

ITEM	N	E	O	A	C
200	-18	26	18	11	**52**
205	-29	5	-12	12	**41**
210	-3	14	-2	6	**44**
220	-26	1	-13	4	**33**
225	-20	-14	-9	18	**36**
230	12	-11	-20	-16	**20**
235	-33	18	1	1	**55**

Note: ***n*** = 287. Decimals removed. Abbreviations refer to the Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C) scales.

APPENDIX M

APPENDIX M

RAW SCORES FOR THE REVISED NEO-PI-R SCALES, BY GENDER

	ID	Scale N	Scale E	Scale O	Scale A	Scale C
FEMALE	1	87	90	83	100	108
	2	111	89	84	70	73
	3	108	107	81	55	89
	9	102	64	72	105	78
	15	96	73	100	66	93
	17	91	102	90	81	105
	18	101	78	84	70	80
	19	99	75	78	80	62
	22	89	98	76	87	73
	23	91	76	73	73	94
	29	74	104	97	102	110
	33	69	95	101	64	114
	34	81	88	96	96	85
	36	86	66	78	65	77
	40	102	76	78	86	91
	41	61	87	103	60	61
	42	129	78	91	76	71
	43	92	83	81	71	99
	44	83	114	90	88	101
	45	84	102	101	92	81
	47	110	109	99	79	57
	48	73	92	92	84	119
	50	103	87	91	54	92
	52	86	90	117	86	84
	55	59	101	73	105	111
	56	104	76	107	97	103
	57	94	55	74	84	97
	60	92	80	69	91	63
	62	124	88	79	65	34
	63	100	86	91	92	72
	64	77	89	79	84	99
	65	105	106	75	68	55
	66	79	69	62	89	86

ID	Scale N	Scale E	Scale O	Scale A	Scale C
71	98	84	84	95	88
72	104	97	114	81	54
73	63	110	70	91	101
75	70	107	81	84	82
77	53	68	82	89	80
80	150	86	104	90	58
81	84	96	86	57	81
82	86	64	70	76	110
83	80	72	78	74	97
84	104	64	82	57	91
85	66	97	85	97	105
86	109	62	75	80	86
87	125	80	79	67	61
90	87	91	98	101	90
92	93	71	69	79	108
101	89	82	86	97	74
104	97	96	92	83	92
108	94	90	87	74	81
119	81	90	96	86	84
123	94	75	67	86	99
124	86	65	69	62	83
125	MISSING	MISSING	MISSING	MISSING	MISSING
126	80	85	79	81	92
127	87	96	79	101	128
129	76	92	102	88	94
130	76	77	69	87	95
131	131	104	94	95	82
133	82	104	92	95	97
134	114	64	85	75	103
135	102	92	110	80	84
137	114	80	102	98	74
138	81	74	87	83	96
139	91	81	72	87	96
140	101	94	111	75	64
146	91	68	97	100	102
147	81	76	103	91	97
151	101	59	76	77	92
153	84	76	67	66	78
154	85	98	92	84	104
155	120	116	119	85	93
156	30	109	118	34	142

ID	Scale N	Scale E	Scale O	Scale A	Scale C
157	81	66	86	98	88
158	98	65	72	70	84
160	90	79	70	74	91
163	83	82	78	53	104
164	100	96	98	67	97
166	85	80	92	91	102
167	78	70	78	95	82
172	92	78	96	64	80
173	105	72	75	88	89
174	80	102	91	97	81
175	66	82	96	77	71
178	118	112	90	39	72
179	70	101	92	85	99
181	87	54	85	77	88
182	112	47	91	78	85
183	120	66	87	72	61
190	84	76	73	67	85
191	114	54	67	76	111
192	99	64	79	78	89
194	104	90	85	85	91
195	95	75	83	63	101
198	66	92	83	104	105
200	110	95	94	87	91
201	75	94	75	88	81
205	63	94	93	107	104
206	106	83	76	75	93
207	92	90	109	93	61
208	104	63	119	76	63
210	107	86	84	74	75
211	109	89	101	87	85
214	124	88	55	33	105
215	130	61	114	62	70
216	82	87	100	74	80
217	121	71	95	93	65
221	99	76	74	68	95
225	85	62	73	61	81
227	118	68	86	89	84
228	83	74	60	63	77
229	128	83	68	56	55
230	111	94	81	85	85
231	132	75	70	85	88

ID	Scale N	Scale E	Scale O	Scale A	Scale C
232	78	70	60	77	83
233	115	79	100	74	88
234	142	36	90	64	67
235	80	60	65	81	101
239	84	83	104	95	69
242	90	68	74	67	86
243	67	90	89	74	92
246	84	92	90	70	136
247	68	88	110	69	84
254	67	102	87	89	102
255	78	114	88	89	109
259	112	85	97	97	77
260	97	94	84	102	88
261	71	51	51	72	96
262	95	65	78	103	86
263	68	85	103	98	92
264	80	83	78	67	78
266	78	55	58	90	111
267	80	95	70	99	75
268	84	68	62	77	70
269	69	73	71	77	80
270	104	69	110	78	58
271	112	75	77	69	64
272	61	87	90	85	60
274	97	102	110	93	54
275	69	91	86	84	96
276	73	92	78	95	87
280	93	87	91	58	95
281	67	77	84	72	105
283	68	94	86	115	108
285	85	65	73	79	84
286	86	70	75	82	84
288	80	94	80	99	89
291	66	88	109	104	103
FEMALE N 149	**148**	**148**	**148**	**148**	**148**
FEMALE MEAN	**91.5**	**82.6**	**85.7**	**80.8**	**87.1**
FEMALE SD	**19.8**	**15.2**	**14.1**	**14.6**	**17.4**

	ID	Scale N	Scale E	Scale O	Scale A	Scale C
MALE	4	64	93	88	97	105
	5	66	89	93	63	84
	6	69	74	66	65	92
	7	72	80	81	89	90
	8	74	61	63	83	66
	10	102	84	84	73	84
	11	76	86	70	82	110
	12	91	64	68	71	61
	13	54	92	97	50	110
	14	81	62	69	69	59
	16	82	63	100	80	83
	20	80	66	59	70	94
	21	75	78	82	58	97
	24	80	73	63	70	92
	25	76	70	70	78	87
	26	48	77	68	84	108
	27	99	77	106	57	100
	28	78	99	83	76	94
	30	60	94	103	93	126
	31	66	99	95	77	104
	32	47	92	111	108	72
	35	84	69	70	62	86
	37	88	68	66	72	78
	38	74	76	75	73	76
	39	71	79	69	71	86
	46	88	81	99	70	79
	49	84	62	70	81	73
	51	79	67	86	55	106
	53	67	92	87	89	96
	54	103	92	112	73	66
	58	77	64	76	91	79
	59	88	68	97	73	121
	67	47	96	87	104	94
	68	44	67	103	74	113
	69	105	73	95	92	67
	70	105	63	70	71	76
	74	112	83	91	71	64
	76	76	82	83	74	101
	78	99	64	52	99	63
	79	88	83	94	76	87
	88	77	75	112	94	67

ID	Scale N	Scale E	Scale O	Scale A	Scale C
89	75	65	64	75	84
91	85	62	69	75	82
93	96	73	128	87	68
94	97	65	66	70	67
95	82	67	65	75	81
96	80	58	57	68	77
97	61	80	93	59	86
98	109	80	94	58	74
100	105	84	78	90	84
102	93	68	70	79	81
103	75	64	100	99	85
105	92	99	78	94	123
106	130	70	121	47	28
107	83	74	89	48	103
109	74	69	118	60	110
110	84	64	72	79	82
111	80	66	68	70	78
112	66	57	62	103	75
113	70	103	73	67	106
114	90	69	92	84	74
115	89	66	67	77	79
116	105	60	66	56	90
117	90	71	75	72	79
118	90	54	59	77	72
120	94	101	106	89	77
121	75	90	87	48	86
122	91	85	72	83	93
128	86	74	77	68	72
132	82	75	89	77	75
136	83	67	75	63	70
141	62	90	98	95	88
142	82	55	87	78	87
143	92	73	67	70	60
144	82	68	63	69	91
145	76	84	124	101	80
148	91	72	77	66	78
149	76	78	110	68	104
150	82	59	61	72	85
159	70	82	77	56	109
161	107	76	89	86	104
162	91	59	87	70	82

ID	Scale N	Scale E	Scale O	Scale A	Scale C
165	71	63	92	94	79
168	78	55	67	74	90
169	74	73	73	68	71
170	66	91	84	89	114
171	77	59	65	85	95
176	84	74	75	70	88
177	89	94	74	71	106
180	89	74	107	73	76
184	99	79	65	79	83
185	93	92	80	70	90
186	77	67	74	81	92
187	77	63	74	91	82
188	98	67	67	71	94
189	92	97	101	64	70
193	77	62	60	64	95
196	47	93	124	90	103
197	59	83	93	80	123
199	88	39	111	96	101
202	MISSING	MISSING	MISSING	MISSING	MISSING
203	96	66	66	99	85
204	69	97	91	81	130
209	98	76	76	93	122
212	65	71	70	84	106
213	83	70	69	76	67
218	98	74	94	72	82
219	85	73	65	83	80
220	91	80	73	50	97
222	71	59	71	71	103
223	95	82	66	60	82
224	84	77	75	71	80
226	107	89	64	74	52
236	50	86	101	90	89
237	78	79	87	113	111
238	80	63	73	79	77
240	112	36	105	119	81
241	84	65	77	69	86
244	66	108	102	42	90
245	83	63	76	68	81
248	65	99	86	90	108
249	68	74	68	89	75
250	94	53	65	70	85

ID	Scale N	Scale E	Scale O	Scale A	Scale C
251	75	69	68	77	84
252	56	53	64	89	62
253	87	64	74	73	86
256	91	88	84	77	93
257	77	82	85	73	99
258	72	79	79	70	121
265	97	57	60	75	80
273	46	92	107	110	128
277	82	77	66	77	80
278	83	76	73	82	86
279	77	72	80	72	84
282	78	68	62	78	68
284	75	79	106	91	74
287	67	76	112	33	82
289	76	97	66	71	75
290	79	59	83	67	111
292	70	65	69	70	90
MALE N 140	**139**	**139**	**139**	**139**	**139**
MALE MEAN	**81.0**	**74.6**	**81.5**	**76.4**	**87.3**
MALE SD	**14.9**	**13.2**	**16.6**	**14.2**	**17.6**
TOTAL N 289	**287**	**287**	**287**	**287**	**287**
TOTAL MEAN	**86.4**	**78.7**	**83.7**	**78.7**	**87.1**
TOTAL SD	**18.3**	**15.4**	**16.0**	**14.9**	**17.3**

APPENDIX N

APPENDIX N

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE PRINCIPALIZATION SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
5	**29**	-11	5	-22	-3	
10	**21**	-3	-2	-13	-5	
14	**28**	-38	26	-25	3	YES
18	**38**	-19	28	-40	1	
21	**29**	-24	38	-30	-14	YES
30	**11**	-5	7	-15	1	YES
32	**37**	-30	26	-25	-8	
40	**28**	-20	31	-21	-20	YES
43	**20**	-14	-6	-9	0	
50	**27**	-5	1	-16	-8	
54	**27**	-10	21	-22	-14	YES
59	**38**	-22	29	-31	-10	
64	**14**	-16	12	-14	-2	YES
68	**31**	-3	17	-23	-17	
74	**29**	-34	15	-31	16	
78	**27**	-35	18	-26	9	YES
85	**15**	-4	-9	-1	-11	
89	**34**	-21	17	-20	-14	
94	**35**	-21	30	-38	-2	YES
96	**5**	-5	3	-4	-9	YES
103	**28**	-24	9	-22	6	
106	**34**	-19	26	-38	1	YES
115	**32**	-26	24	-27	-5	YES
118	**18**	-15	23	-29	5	YES
125	**6**	-15	-4	-7	7	YES
129	**18**	-6	11	-22	-3	YES
132	**32**	-21	28	-25	-12	YES
139	**28**	-27	23	-16	-14	YES
141	**14**	-10	1	-18	9	
148	**31**	-23	21	-29	1	
152	**23**	-4	7	-23	0	
159	**26**	-13	15	-22	-6	

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
162	**11**	-15	11	-17	5	YES
170	**-1**	6	-6	7	-14	YES
172	**12**	-25	11	-11	2	YES
178	**16**	-13	5	-27	19	YES
182	**5**	-7	-9	-2	3	YES
186	**18**	0	5	-13	-12	
194	**43**	-6	34	-31	-31	
199	**40**	-16	17	-18	-27	

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX O

APPENDIX O

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE PROJECTION SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
1	-16	**22**	-8	17	-25	
7	-10	**6**	-12	7	0	YES
15	7	**12**	-2	-4	-18	
19	-12	**19**	-24	11	-2	YES
22	-10	**22**	-17	18	-24	YES
27	-7	**15**	-12	5	-6	
33	-19	**25**	-19	8	0	
36	-30	**42**	-32	29	-18	
42	-13	**6**	-22	10	7	YES
47	-10	**10**	-11	2	2	YES
52	-25	**23**	-19	11	0	
56	-14	**9**	-31	15	5	YES
65	-26	**34**	-22	31	-28	YES
69	-14	**31**	-7	7	-19	
71	-15	**25**	-2	13	-30	
79	-20	**26**	-20	14	-5	
82	-16	**13**	-9	14	-11	YES
86	-11	**31**	-21	12	-14	
93	-15	**24**	-14	13	-13	
99	-17	**13**	-25	14	2	YES
105	-6	**6**	-2	8	-17	YES
110	-30	**50**	-36	40	-34	
111	-5	**25**	-1	1	-22	
117	-36	**41**	-29	44	-35	YES
123	-9	**17**	-8	8	-13	
126	-1	**23**	-14	3	-12	
135	-12	**14**	-29	13	-3	YES
137	0	**22**	-15	-12	6	
144	-15	**15**	-13	9	-5	YES
149	-2	**7**	-17	9	-7	YES
155	-22	**21**	-20	11	-3	
156	-15	**12**	-26	28	-19	YES

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
161	4	**14**	-7	-2	-14	
169	-13	**13**	-13	12	-11	YES
173	9	**-4**	-6	-6	-2	YES
179	32	**-20**	15	-25	-4	YES
181	-32	**31**	-19	18	-8	
188	-2	**10**	-11	1	-1	YES
193	-17	**23**	-5	6	-10	
200	-26	**32**	-32	30	-17	YES

Note: ***n*** = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX P

APPENDIX P

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVERSAL SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
2	11	-26	**21**	-30	19	YES
9	18	-20	**33**	-28	-3	
13	30	-34	**39**	-34	-1	
16	26	-28	**35**	-34	4	YES
23	6	-8	**5**	-4	-7	YES
26	31	-36	**46**	-41	1	
34	19	-18	**32**	-30	-2	
38	19	-34	**41**	-25	-7	
41	3	-10	**11**	-16	7	YES
48	17	-11	**36**	-26	-14	
53	17	-21	**22**	-22	0	YES
58	13	-16	**31**	-22	-8	
62	8	-39	**0**	-24	42	YES
66	29	-33	**38**	-39	6	
73	32	-38	**19**	-32	16	YES
80	26	-22	**30**	-27	-7	YES
83	6	-12	**15**	-17	0	
87	-2	-25	**32**	-19	4	
91	40	-35	**32**	-37	-3	YES
98	19	-28	**28**	-21	-5	
104	27	-35	**24**	-34	13	YES
107	8	-43	**30**	-23	15	
112	27	-34	**36**	-30	-5	
120	39	-44	**31**	-41	10	YES
124	26	-18	**11**	-25	5	YES
128	28	-16	**30**	-27	-13	YES
131	6	-3	**21**	-16	-12	
140	6	-12	**25**	-9	-18	
145	9	-26	**34**	-13	-12	
146	11	-24	**31**	-27	8	
154	25	-25	**32**	-19	-17	YES
157	9	-29	**36**	-19	-1	

ITEM	PRN	PRO	**REV**	TAO	TAS	REMOVED?
164	-10	15	**6**	10	-29	YES
168	8	1	**26**	-10	-26	
175	-6	15	**13**	7	-36	YES
176	-25	20	**2**	19	-29	YES
185	14	-15	**12**	-19	1	YES
189	26	-28	**38**	-27	-12	
192	6	-13	**20**	-17	3	
196	11	-41	**40**	-27	10	

Note: ***n*** = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX Q

APPENDIX Q

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE TURNING AGAINST OTHERS SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
3	-32	4	-25	**36**	-9	
6	-38	10	-36	**53**	-21	
12	-48	36	-37	**54**	-28	
20	-39	20	-33	**46**	-21	
24	-39	22	-31	**39**	-11	
28	-22	24	-36	**43**	-31	
31	-38	35	-31	**51**	-39	
37	-22	14	-34	**28**	-4	
44	-16	11	-13	**21**	-23	
49	-23	7	-30	**24**	0	
51	-29	14	-38	**32**	-3	
60	-24	22	-33	**34**	-18	
61	-14	19	-4	**20**	-35	
67	-53	27	-40	**58**	-21	
75	-45	30	-32	**44**	-19	
77	-18	27	-12	**30**	-41	YES
84	34	23	-27	**31**	-10	YES
88	29	23	-41	**37**	-12	
92	-41	32	-44	**46**	-15	
97	-09	12	-15	**07**	-04	YES
101	-38	48	-26	**42**	-38	YES
108	-19	15	-28	**28**	-13	
113	-43	32	-49	**54**	-16	
116	-16	8	-16	**18**	-8	
122	-18	18	-8	**21**	-29	YES
130	-36	13	-37	**41**	-9	
133	-18	15	-18	**30**	-23	
136	-33	19	-33	**39**	-16	
143	-21	18	-31	**30**	-16	
150	-22	32	-31	**27**	-23	YES
151	-23	16	-31	**30**	-10	
158	-24	35	-27	**20**	-14	YES

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
163	-24	10	-16	**30**	-19	
167	-5	-17	-10	**2**	11	YES
174	-20	2	-15	**15**	0	
180	-31	6	-27	**22**	8	
184	-2	6	-5	**10**	-20	YES
190	-43	24	-42	**46**	-12	
195	-43	28	-43	**50**	-16	
198	-23	21	-18	**24**	-17	YES

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX R

APPENDIX R

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE TURNING AGAINST SELF SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
4	-1	-5	-3	-15	**23**	
8	13	-7	15	-39	**24**	
11	-15	-2	-23	-5	**34**	
17	-13	-7	-9	0	**13**	YES
25	1	-23	-5	-25	**44**	
29	-17	-12	-7	-6	**27**	
35	4	-30	-7	-23	**47**	
39	-1	-13	-8	-19	**34**	
45	2	-13	28	-24	**5**	YES
46	-15	-13	0	4	**10**	YES
55	9	-19	15	-17	**7**	YES
57	-17	-7	-1	-6	**20**	
63	12	-8	6	-24	**13**	YES
70	10	-31	-9	-22	**44**	
72	-7	-3	-8	-4	**14**	YES
76	-23	-10	-22	-1	**41**	
81	17	-30	19	-34	**23**	YES
90	-6	-16	0	-15	**29**	
95	-25	-15	-8	0	**30**	
100	-14	-3	-4	0	**10**	YES
102	-14	-13	-14	-6	**36**	
109	4	-26	5	-23	**33**	
114	-15	-14	-15	-9	**43**	
119	-19	1	-21	3	**24**	
121	-12	-16	3	-13	**28**	
127	-9	-20	8	-13	**26**	
134	-14	-20	-11	-5	**39**	
138	-3	-20	0	-19	**35**	
142	9	-15	8	-22	**15**	YES
147	-18	-16	-2	2	**17**	
153	-6	-23	3	-12	**26**	
160	-7	-20	-5	-14	**35**	

ITEM	PRN	PRO	REV	TAO	TAS	REMOVED?
165	6	-31	-3	-23	**40**	
166	3	-13	-5	-20	**30**	
171	-6	-2	-11	-13	**27**	
177	3	-8	-6	-2	**4**	YES
183	8	-36	13	-19	**22**	YES
187	-1	-15	3	-24	**34**	
191	3	-37	-6	-17	**41**	
197	-19	-2	-20	-8	**40**	

Note: ***n*** = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX S

APPENDIX S

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED PRINCIPALIZATION SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS
5	**25**	-13	0	-23	-3
10	**20**	-6	-2	-13	-4
18	**30**	-10	17	-40	2
32	**28**	-25	23	-27	-12
43	**23**	-10	1	-9	0
50	**34**	-6	-4	-16	-8
59	**35**	-15	28	-34	-14
68	**31**	-7	13	-24	-16
74	**20**	-36	12	-28	19
85	**20**	-9	-15	2	-7
89	**37**	-24	9	-21	-17
103	**20**	-17	4	-21	6
141	**18**	4	-4	-19	9
148	**36**	-17	19	-27	2
152	**36**	0	5	-24	-3
159	**25**	-4	5	-21	-9
186	**22**	4	2	-14	-14
194	**47**	3	28	-34	-33
199	**43**	-10	9	-17	-26

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX T

APPENDIX T

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED PROJECTION SCALE OF THE DMI

ITEM	PRN	**PRO**	REV	TAO	TAS
1	-19	**25**	0	10	-24
15	9	**16**	2	-4	-21
27	-1	**19**	-10	1	-3
33	-13	**29**	-11	5	1
36	-17	**33**	-33	27	-16
52	-23	**30**	-12	10	4
69	-10	**31**	-9	2	-17
71	-7	**33**	1	6	-28
79	-13	**23**	-16	12	-5
86	-11	**31**	-21	10	-11
93	-6	**32**	-13	10	-10
110	-17	**43**	-33	38	-35
111	-1	**36**	-2	1	-22
123	-5	**18**	-5	7	-10
126	-2	**19**	-13	2	-9
137	9	**14**	-17	-11	8
155	-23	**9**	-23	8	-1
161	14	**16**	-4	-3	-14
181	-29	**37**	-13	17	-5
193	-24	**27**	-3	3	-15

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX U

APPENDIX U

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED REVERSAL SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS
9	9	-4	**30**	-28	-7
13	26	-21	**35**	-37	-2
26	27	-29	**44**	-39	-3
34	12	-13	**32**	-32	-3
38	13	-26	**44**	-25	-13
48	15	-2	**34**	-30	-14
58	5	-3	**27**	-24	-14
66	19	-31	**29**	-40	5
83	2	-2	**18**	-15	-1
87	-16	-13	**39**	-17	-1
98	16	-28	**25**	-18	-3
107	0	-27	**30**	-24	10
112	23	-34	**31**	-31	-7
131	3	13	**24**	-20	-14
140	-2	-5	**27**	-12	-21
145	0	-18	**38**	-11	-12
146	7	-8	**32**	-27	1
157	2	-17	**38**	-17	-4
168	8	6	**24**	-13	-29
189	22	-19	**40**	-27	-12
192	3	-8	**22**	-18	1
196	1	-35	**49**	-24	6

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX V

APPENDIX V

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED TURNING AGAINST OTHERS SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS
3	-33	-9	-15	**41**	-8
6	-34	2	-29	**55**	-19
12	-43	25	-31	**53**	-28
20	-35	17	-22	**47**	-18
24	-33	27	-26	**37**	-9
28	-10	9	-40	**43**	-28
31	-35	28	-34	**50**	-37
37	-22	4	-33	**30**	0
44	-21	8	-14	**22**	-17
49	-24	4	-28	**26**	6
51	-23	1	-33	**33**	4
60	-18	20	-31	**34**	-12
61	-10	20	0	**16**	-29
67	-48	21	-28	**58**	-20
75	-40	24	-23	**43**	-17
88	-25	5	-40	**37**	-6
92	-37	18	-37	**42**	-12
108	-11	-3	-26	**30**	-11
113	-36	14	-42	**54**	-16
116	-8	6	-8	**17**	-8
130	-23	0	-37	**42**	-5
133	-20	8	-22	**30**	-21
136	-22	7	-32	**37**	-12
143	-26	15	-30	**27**	-12
151	-24	13	-22	**28**	-9
163	-18	8	-13	**28**	-17
174	-17	-1	-15	**17**	-1
180	-32	2	-20	**26**	11
190	-47	18	-41	**44**	-12
195	-39	7	-43	**51**	-13

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX W

APPENDIX W

RESULTS OF A CONFIRMATORY FACTOR ANALYSIS WITH ITEMS COMPRISING THE REVISED TURNING AGAINST SELF SCALE OF THE DMI

ITEM	PRN	PRO	REV	TAO	TAS
4	-1	-4	-2	-15	**23**
8	12	-2	9	-40	**23**
11	-11	-11	-26	-3	**35**
25	2	-11	-3	-22	**46**
29	-25	-14	-6	-4	**26**
35	3	-40	-12	-19	**46**
39	-1	-13	-10	-17	**36**
57	-19	-1	-1	-3	**15**
70	6	-27	-14	-19	**40**
76	-17	-18	-19	4	**40**
90	-5	-11	-2	-15	**29**
95	-24	-14	-2	3	**29**
102	-15	-15	-15	-4	**37**
109	2	-25	1	-22	**36**
114	-10	-16	-19	-5	**46**
119	-15	-5	-16	5	**27**
121	-7	-13	5	-10	**28**
127	-9	-5	10	-15	**23**
134	-10	-20	-13	-2	**37**
138	-4	-18	-2	-17	**35**
147	-26	-9	0	4	**15**
153	-12	-22	6	-9	**27**
160	-7	-14	-9	-9	**36**
165	4	-39	-3	-20	**38**
166	5	-13	-6	-17	**30**
171	-6	4	-3	-15	**25**
187	6	-11	3	-22	**34**
191	-4	-36	-7	-14	**43**
197	-17	1	-27	-4	**41**

Note: n = 276. Decimals removed. Abbreviations refer to the Principalization (PRN), Projection (PRO), Reversal (REV), Turning Against Others (TAO) and Turning Against Self (TAS) scales.

APPENDIX X

APPENDIX X

RAW SCORES FOR REVISED DMI SCALES, BY GENDER

	ID	PRN	PRO	REV	TAO	TAS
FEMALE	1	22	14	16	42	34
	2	20	20	11	42	33
	3	17	23	8	45	32
	9	19	18	24	42	27
	15	19	26	16	32	33
	17	21	23	22	33	17
	18	25	22	22	36	19
	19	26	20	14	33	31
	22	28	21	17	26	30
	23	21	20	10	38	33
	29	23	18	26	22	29
	33	15	17	24	34	28
	34	17	17	24	37	30
	36	23	19	25	28	26
	40	24	20	20	24	37
	41	24	17	16	39	28
	42	28	18	12	32	33
	43	26	21	26	27	25
	44	27	26	17	25	28
	45	24	12	29	28	33
	47	19	21	7	44	30
	48	29	17	28	29	15
	50	22	18	20	35	28
	52	32	16	27	21	18
	55	26	21	24	24	25
	56	23	14	23	31	29
	57	27	18	16	28	38
	60	26	16	32	9	33
	62	21	13	19	29	39
	63	21	17	26	28	30
	64	21	14	28	32	25
	65	20	19	25	28	34
	66	27	8	33	22	26

ID	PRN	PRO	REV	TAO	TAS
71	25	14	28	24	33
72	23	21	21	30	36
73	19	20	15	36	29
75	29	18	21	33	29
77	23	24	20	28	26
80	20	17	20	38	27
81	24	14	23	30	33
82	24	16	27	30	20
83	MISSING	MISSING	MISSING	MISSING	MISSING
84	21	20	19	45	25
85	22	12	22	30	37
86	15	21	20	35	29
87	16	21	17	41	27
90	19	18	16	37	38
92	18	17	23	44	24
101	27	15	25	19	31
104	24	21	20	36	28
108	20	19	20	38	31
119	23	17	17	27	35
123	24	21	24	22	37
124	21	13	19	28	40
125	18	18	11	42	38
126	19	19	23	32	33
127	18	22	20	35	33
129	22	10	27	31	31
130	18	14	25	34	35
131	18	18	14	30	44
133	20	13	32	20	30
134	23	19	20	34	36
135	21	17	21	34	37
137	22	13	22	33	39
138	25	19	24	28	26
139	23	18	24	23	29
140	21	18	15	38	31
146	23	13	26	31	33
147	25	12	30	19	30
151	MISSING	MISSING	MISSING	MISSING	MISSING
153	19	19	21	37	27
154	19	25	11	48	17
155	18	13	22	36	29
156	30	19	16	34	24

ID	PRN	PRO	REV	TAO	TAS
157	22	21	22	27	38
158	20	28	8	47	27
160	MISSING	MISSING	MISSING	MISSING	MISSING
163	30	19	17	32	23
164	24	20	13	37	29
166	26	12	13	40	28
167	26	17	25	26	26
172	26	16	28	20	24
173	33	16	24	23	29
174	21	16	28	24	34
175	28	21	25	27	24
178	18	21	10	41	34
179	28	13	22	26	24
181	24	9	24	40	28
182	16	19	14	42	34
183	18	14	16	39	34
190	20	23	16	44	19
191	20	14	23	24	45
192	19	18	18	46	30
194	MISSING	MISSING	MISSING	MISSING	MISSING
195	26	17	17	32	26
198	27	13	32	24	31
200	26	15	20	29	39
201	26	16	17	34	28
205	27	19	22	24	27
206	13	18	24	31	34
207	23	20	22	30	29
208	17	21	20	41	30
210	17	15	23	34	37
211	22	19	26	25	36
214	19	23	14	MISSING	34
215	18	24	13	37	32
216	27	17	30	29	16
217	26	14	17	23	38
221	18	23	21	39	28
225	18	19	24	36	24
227	16	22	19	36	30
228	MISSING	MISSING	MISSING	MISSING	MISSING
229	21	15	21	39	37
230	19	13	24	28	33
231	22	15	19	37	33

ID	PRN	PRO	REV	TAO	TAS
232	25	18	17	28	28
233	19	21	22	34	30
234	23	18	10	36	37
235	21	19	18	37	28
239	22	12	22	22	47
242	18	17	21	38	31
243	18	26	16	47	22
246	23	19	29	27	25
247	23	21	25	23	27
254	27	13	19	32	28
255	28	12	22	32	26
259	14	21	19	40	30
260	18	15	19	27	45
261	26	12	16	30	36
262	26	21	25	15	34
263	30	13	28	25	24
264	27	19	12	32	27
266	25	15	24	26	27
267	23	15	25	25	35
268	16	25	21	44	21
269	24	17	24	23	33
270	21	20	15	37	34
271	18	15	23	26	38
272	18	25	16	47	16
274	30	20	18	17	40
275	30	20	18	17	40
276	24	13	22	34	29
280	21	19	15	39	28
281	22	23	21	31	22
283	20	16	26	34	20
285	27	21	19	27	29
286	27	17	21	27	23
288	24	18	16	28	38
291	31	17	21	22	24
FEMALE N 149	**144**	**144**	**144**	**143**	**144**
FEMALE MEAN	**22.5**	**17.8**	**20.6**	**31.7**	**30.2**
FEMALE SD	**4.1**	**3.7**	**5.3**	**7.5**	**6.1**

	ID	PRN	PRO	REV	TAO	TAS
MALE	4	24	22	24	27	28
	5	26	16	24	30	21
	6	20	31	25	32	16
	7	26	17	23	30	21
	8	MISSING	MISSING	MISSING	MISSING	MISSING
	10	19	16	23	40	24
	11	22	16	31	28	32
	12	22	25	25	22	27
	13	24	27	17	25	24
	14	23	20	18	40	20
	16	26	18	22	21	29
	20	28	16	24	23	25
	21	26	20	26	30	14
	24	26	22	24	39	16
	25	16	26	22	34	24
	26	26	15	19	32	32
	27	22	19	23	28	24
	28	13	18	12	53	24
	30	MISSING	MISSING	MISSING	MISSING	MISSING
	31	23	16	33	24	23
	32	28	13	33	18	25
	35	17	27	23	30	25
	37	17	26	24	32	31
	38	19	22	20	28	26
	39	24	25	24	27	29
	46	27	21	20	33	20
	49	26	21	20	40	18
	51	19	16	20	33	27
	53	28	24	19	27	22
	54	22	19	23	39	21
	58	25	24	23	24	25
	59	23	22	22	32	27
	67	33	18	28	24	12
	68	23	17	29	25	26
	69	25	22	26	13	28
	70	25	21	21	29	30
	74	23	19	18	47	23
	76	21	15	25	35	28
	78	27	16	18	36	29
	79	22	22	11	42	24
	88	23	25	12	39	22

ID	PRN	PRO	REV	TAO	TAS
89	22	24	23	29	18
91	28	23	21	36	18
93	22	20	20	38	25
94	25	20	20	36	9
95	18	23	22	38	26
96	20	28	27	29	24
97	26	23	21	30	21
98	19	24	13	41	29
100	19	21	18	40	24
102	25	18	22	28	29
103	26	20	22	23	27
105	24	19	17	33	32
106	21	24	14	40	24
107	23	21	18	36	28
109	23	23	21	40	15
110	24	19	22	35	25
111	20	23	17	35	29
112	19	21	29	16	34
113	25	21	19	38	23
114	21	20	36	22	15
115	23	23	19	21	33
116	26	22	15	28	31
117	19	23	6	47	27
118	29	22	21	24	22
120	25	22	15	31	29
121	22	17	14	47	20
122	16	25	21	34	32
128	25	29	21	29	12
132	23	21	20	32	23
136	27	23	19	33	17
141	27	13	33	17	26
142	23	21	17	43	25
143	21	24	17	34	30
144	MISSING	MISSING	MISSING	MISSING	MISSING
145	23	20	28	17	34
148	16	20	20	41	27
149	25	16	28	26	19
150	19	20	22	37	26
159	MISSING	MISSING	MISSING	MISSING	MISSING
161	27	15	27	16	34
162	18	19	19	43	22

ID	PRN	PRO	REV	TAO	TAS
165	25	17	26	13	34
168	24	19	22	39	23
169	26	15	21	39	20
170	28	19	18	33	20
171	23	20	23	27	32
176	14	19	14	49	26
177	17	20	21	45	24
180	24	23	15	29	26
184	22	15	26	34	24
185	14	24	19	37	28
186	21	16	31	19	31
187	25	17	17	39	28
188	19	17	23	45	13
189	20	22	19	40	22
193	23	19	24	40	18
196	32	17	24	27	21
197	25	18	24	30	24
199	25	21	21	35	22
202	25	15	20	33	30
203	21	20	25	23	36
204	27	14	22	32	19
209	22	17	20	43	24
212	21	17	17	41	29
213	14	18	23	45	26
218	24	16	29	25	25
219	20	18	23	20	33
220	16	20	17	44	22
222	18	17	21	39	29
223	16	23	22	41	23
224	18	24	22	38	28
226	16	21	12	49	27
236	26	22	22	36	19
237	24	21	24	20	27
238	19	20	20	40	24
240	25	17	22	30	32
241	24	26	20	37	16
244	21	21	22	39	24
245	MISSING	MISSING	MISSING	MISSING	MISSING
248	28	20	20	29	22
249	24	20	25	34	26
250	20	21	18	37	34

	ID	PRN	PRO	REV	TAO	TAS
	251	17	21	20	37	29
	252	23	29	16	36	22
	253	18	16	21	38	26
	256	23	25	20	26	30
	257	26	18	22	38	15
	258	20	18	26	30	28
	265	MISSING	MISSING	MISSING	MISSING	MISSING
	273	21	13	19	37	35
	277	17	22	30	33	29
	278	21	17	20	36	23
	279	22	20	22	28	35
	282	17	20	20	40	25
	284	29	17	19	28	35
	287	20	21	22	45	16
	289	16	23	14	45	20
	290	MISSING	MISSING	MISSING	MISSING	MISSING
	292	MISSING	MISSING	MISSING	MISSING	MISSING
MALE N	**140**	**132**	**132**	**132**	**132**	**132**
MALE MEAN		**22.4**	**20.2**	**21.4**	**33.1**	**24.9**
MALE SD		**3.9**	**3.5**	**4.7**	**8.2**	**5.5**
TOTAL N	**289**	**276**	**276**	**276**	**275**	**276**
TOTAL MEAN		**22.5**	**18.9**	**20.9**	**32.4**	**27.7**
TOTAL SD		**4.8**	**4.0**	**5.3**	**7.8**	**6.4**

APPENDIX Y

APPENDIX Y

RAW SCORES FOR NSSQ SCALES, BY GENDER

	ID	Functional Support	Structural Support	Total Social Support
FEMALE	1	201	82	16482
	2	253	99	25047
	3	266	105	27930
	9	530	184	97520
	15	365	140	51100
	17	390	135	52650
	18	254	90	22860
	19	300	93	27900
	22	158	68	10744
	23	189	83	15687
	29	333	110	36630
	33	220	71	15620
	34	210	79	16590
	36	335	121	40535
	40	261	95	24795
	41	270	100	27000
	42	222	82	18204
	43	167	65	10855
	44	526	173	90998
	45	396	145	57420
	47	275	96	26400
	48	294	109	32046
	50	279	92	25668
	52	389	146	56794
	55	313	120	37560
	56	309	99	30591
	57	107	33	3531
	60	151	44	6644
	62	290	104	30160
	63	152	53	8056
	64	211	80	16880
	65	439	149	65411

ID	Functional Support	Structural Support	Total Social Support
66	291	96	27936
71	481	166	79846
72	486	156	75816
73	291	110	32010
75	434	153	66402
77	173	60	10380
80	231	77	17787
81	209	80	16720
82	387	135	52245
83	149	77	11473
84	419	181	75839
85	338	118	39884
86	157	62	9734
87	251	96	24096
90	317	106	33602
92	236	94	22184
101	196	59	11564
104	280	86	24080
108	209	87	18183
119	276	97	26772
123	160	53	8480
124	546	177	96642
125	346	141	48786
126	282	108	30456
127	398	147	58506
129	282	89	25098
130	228	70	15960
131	187	66	12342
133	319	116	37004
134	232	90	20880
135	211	83	17513
137	304	122	37088
138	163	64	10432
139	183	66	12078
140	274	99	27126
146	179	75	13425
147	308	123	37884
151	218	102	22236
153	328	129	42312
154	359	123	44157

ID	Functional Support	Structural Support	Total Social Support
155	364	120	43680
156	574	181	103894
157	249	97	24153
158	161	60	9660
160	574	199	114226
163	150	56	8400
164	369	128	47232
166	175	59	10325
167	214	70	14980
172	323	109	35207
173	162	66	10692
174	349	130	45370
175	259	87	22533
178	365	132	48180
179	365	131	47815
181	142	55	7810
182	212	86	18232
183	222	84	18648
190	374	125	46750
191	222	74	16428
192	267	84	22428
194	201	88	17688
195	284	115	32660
198	326	107	34882
200	447	173	77331
201	414	153	63342
205	505	191	96455
206	407	172	70004
207	340	117	39780
208	320	111	35520
210	218	76	16568
211	406	155	62930
214	470	149	70030
215	281	98	27538
216	308	106	32648
217	388	155	60140
221	417	178	74226
225	188	83	15604
227	344	124	42656
228	408	127	51816

ID	Functional Support	Structural Support	Total Social Support
229	263	124	32612
230	221	88	19448
231	301	108	32508
232	292	98	28616
233	247	80	19760
234	165	53	8745
235	185	74	13690
239	374	141	52734
242	422	137	57814
243	284	94	26696
246	487	175	85225
247	300	124	37200
254	347	120	41640
255	304	102	31008
259	443	179	79297
260	410	136	55760
261	337	127	42799
262	396	146	57816
263	238	94	22372
264	313	125	39125
266	53	22	1166
267	202	77	15554
268	291	109	31719
269	444	172	76368
270	230	83	19090
271	347	115	39905
272	226	79	17854
274	427	179	76433
275	272	101	27472
276	158	63	9954
280	132	50	6600
281	580	199	115420
283	287	101	28987
285	456	185	84360
286	490	172	84280
288	164	60	9840
291	166	53	8798
FEMALE N **149**	**149**	**149**	**149**
FEMALE MEAN	**298**	**108**	**36231**
FEMALE SD	**108**	**38**	**25074**

	ID	Functional Support	Structural Support	Total Social Support
MALE	4	219	73	15987
	5	143	65	9295
	6	239	83	19837
	7	334	157	52438
	8	215	95	20425
	10	285	99	28215
	11	262	101	26462
	12	136	62	8432
	13	309	114	35226
	14	489	161	78729
	16	258	87	22446
	20	151	53	8003
	21	196	77	15092
	24	150	47	7050
	25	118	41	4838
	26	237	101	23937
	27	228	82	18696
	28	252	98	24696
	30	289	92	26588
	31	207	72	14904
	32	144	49	7056
	35	198	84	16632
	37	86	28	2408
	38	100	44	4400
	39	133	50	6650
	46	248	92	22816
	49	501	187	93687
	51	193	102	19686
	53	294	111	32634
	54	295	110	32450
	58	122	44	5368
	59	284	117	33228
	67	228	85	19380
	68	125	50	6250
	69	355	142	50410
	70	232	96	22272
	74	192	67	12864
	76	324	91	29484
	78	268	97	25996
	79	253	85	21505

ID	Functional Support	Structural Support	Total Social Support
88	427	142	60634
89	227	100	22700
91	438	154	67452
93	313	115	35995
94	106	33	3498
95	137	50	6850
96	159	64	10176
97	421	161	67781
98	214	99	21186
100	194	75	14550
102	132	62	8184
103	223	102	22746
105	131	45	5895
106	250	131	32750
107	85	30	2550
109	131	49	6419
110	198	93	18414
111	476	190	90440
112	185	92	17020
113	227	98	22246
114	193	97	18721
115	242	89	21538
116	206	81	16686
117	327	130	42510
118	250	81	20250
120	234	86	20124
121	261	98	25578
122	226	79	17854
128	173	64	11072
132	185	86	15910
136	258	112	28896
141	465	183	85095
142	106	56	5936
143	310	110	34100
144	403	177	71331
145	554	163	90302
148	242	83	20086
149	267	75	20025
150	364	163	59332
159	193	71	13703

ID	Functional Support	Structural Support	Total Social Support
161	266	93	24738
162	214	75	16050
165	228	72	16416
168	214	77	16478
169	180	79	14220
170	319	94	29986
171	224	97	21728
176	263	128	33664
177	186	66	12276
180	278	106	29468
184	232	80	18560
185	178	65	11570
186	231	91	21021
187	283	110	31130
188	357	105	37485
189	417	124	51708
193	166	60	9960
196	456	164	74784
197	333	101	33633
199	165	70	11550
202	186	67	12462
203	388	151	58588
204	279	91	25389
209	238	84	19992
212	164	66	10824
213	354	118	41772
218	350	133	46550
219	216	86	18576
220	406	145	58870
222	117	38	4446
223	52	18	936
224	485	167	80995
226	275	103	28325
236	457	156	71292
237	439	128	56192
238	344	167	57448
240	289	105	30345
241	513	166	85158
244	315	108	34020
245	245	91	22295

ID	Functional Support	Structural Support	Total Social Support
248	526	179	94154
249	329	109	35861
250	170	70	11900
251	200	66	13200
252	108	42	4536
253	252	99	24948
256	324	118	38232
257	227	90	20430
258	321	98	31458
265	279	111	30969
273	296	87	25752
277	158	63	9954
278	MISSING	MISSING	MISSING
279	191	76	14516
282	211	87	18357
284	230	89	20470
287	244	81	19764
289	85	40	3400
290	373	131	48863
292	472	174	82128
MALE N	**139**	**139**	**139**
MALE MEAN	**257**	**96**	**28294**
MALE SD	**106**	**37**	**22198**
TOTAL N	**288**	**288**	**288**
TOTAL MEAN	**278**	**102**	**32400**
TOTAL SD	**109**	**38**	**24019**

APPENDIX Z

APPENDIX Z

RAW SCORES FOR SCALES DERIVED FROM SECOND ORDER FACTOR ANALYSES, BY GENDER

	ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
FEMALE	1	137	273	38	84
	2	195	243	31	91
	3	176	243	25	97
	9	181	241	43	92
	15	160	239	35	86
	17	143	273	43	99
	18	178	232	47	101
	19	194	233	40	84
	22	173	261	45	77
	23	154	222	31	85
	29	122	303	49	73
	33	113	260	39	86
	34	154	280	41	84
	36	167	209	48	82
	40	168	240	44	66
	41	157	250	40	90
	42	217	245	40	76
	43	151	235	52	83
	44	139	292	44	85
	45	160	295	53	69
	47	209	287	26	95
	48	112	268	57	91
	50	168	232	42	84
	52	161	293	59	82
	55	107	279	50	84
	56	159	280	46	78
	57	154	213	43	71
	60	186	240	58	57
	62	248	232	40	62
	63	184	269	47	76
	64	135	252	49	81

ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
65	206	249	45	74
66	153	220	60	69
71	169	263	53	66
72	208	292	44	76
73	119	271	34	89
75	145	272	50	81
77	130	239	43	86
80	250	280	40	90
81	160	239	47	73
82	135	210	51	87
83	141	224	MISSING	MISSING
84	170	203	40	99
85	120	279	44	67
86	181	217	35	87
87	221	226	33	95
90	155	290	35	78
92	144	219	41	100
101	172	265	52	65
104	162	271	44	90
108	170	251	40	87
119	154	272	40	68
123	154	228	48	67
124	161	196	40	62
125	MISSING	MISSING	29	83
126	147	245	42	81
127	118	276	38	82
129	140	282	49	72
130	139	233	43	72
131	206	293	32	64
133	142	291	52	67
134	170	224	43	74
135	176	282	42	75
137	197	280	44	68
138	142	244	49	85
139	152	240	47	73
140	194	280	36	85
146	146	265	49	71
147	141	270	55	63
151	165	212	MISSING	MISSING
153	165	209	40	91

ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
154	138	274	30	119
155	183	320	40	82
156	48	261	46	91
157	152	250	44	69
158	173	207	28	110
160	157	223	MISSING	MISSING
163	136	213	47	91
164	160	261	37	90
166	140	263	39	85
167	155	243	51	78
172	172	238	54	75
173	173	235	57	73
174	156	290	49	65
175	152	255	53	85
178	203	241	28	89
179	128	278	50	77
181	156	216	48	82
182	184	216	30	86
183	216	225	34	81
190	157	216	36	109
191	160	197	43	55
192	167	221	37	94
194	170	260	MISSING	MISSING
195	152	221	43	86
198	117	279	59	70
200	176	276	46	68
201	151	257	43	84
205	115	294	49	78
206	170	234	37	76
207	188	292	45	81
208	198	258	37	93
210	189	244	40	72
211	183	277	48	67
214	175	176	33	MISSING
215	218	237	31	88
216	159	261	57	91
217	213	259	43	60
221	161	218	39	95
225	163	196	42	92
227	193	243	35	86

ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
228	163	197	MISSING	MISSING
229	231	207	42	77
230	183	260	43	68
231	203	230	41	79
232	152	207	42	82
233	184	253	41	86
234	232	190	33	79
235	138	206	39	89
239	173	282	44	47
242	162	209	39	86
243	132	253	34	112
246	107	252	52	83
247	141	267	48	78
254	122	278	46	78
255	126	291	50	81
259	191	279	33	92
260	166	280	37	56
261	135	174	42	68
262	168	246	51	63
263	133	286	58	78
264	162	228	39	86
266	124	203	49	76
267	164	264	48	65
268	172	207	37	110
269	146	221	48	69
270	205	257	36	84
271	205	221	41	64
272	161	262	34	117
274	199	305	48	56
275	131	261	48	56
276	144	265	46	78
280	156	236	36	92
281	119	233	43	96
283	117	295	46	91
285	161	217	46	80
286	160	227	48	81
288	148	273	40	71
291	120	301	52	78
FEMALE N	**148**	**148**	**144**	**143**
FEMALE MEAN	**162.3**	**248.7**	**43.1**	**81.0**
FEMALE SD	**29.9**	**30.6**	**7.2**	**13.3**

	ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
MALE	4	116	278	48	81
	5	139	245	50	89
	6	135	205	45	109
	7	139	250	49	87
	8	166	207	MISSING	MISSING
	10	175	241	42	95
	11	123	238	53	76
	12	187	203	47	82
	13	102	239	41	90
	14	180	200	41	101
	16	156	243	48	72
	20	143	195	52	75
	21	136	218	52	100
	24	146	206	50	107
	25	147	218	38	98
	26	98	229	45	78
	27	156	240	45	86
	28	141	258	25	109
	30	93	290	MISSING	MISSING
	31	118	271	56	80
	32	131	311	61	70
	35	156	201	40	94
	37	168	206	41	90
	38	157	224	39	86
	39	142	219	48	83
	46	167	250	47	97
	49	171	213	46	104
	51	131	208	39	83
	53	128	268	47	91
	54	196	277	45	98
	58	157	231	48	85
	59	125	238	45	86
	67	112	287	61	94
	68	89	244	52	80
	69	195	260	51	69
	70	186	204	46	82
	74	204	245	41	104
	76	134	239	46	85
	78	194	215	45	83
	79	158	253	33	100

ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
88	168	281	35	104
89	151	204	45	97
91	162	206	49	102
93	186	288	42	96
94	189	201	45	109
95	159	207	40	98
96	162	183	47	95
97	132	232	47	97
98	192	232	32	98
100	179	252	37	99
102	169	217	47	79
103	149	263	48	76
105	126	271	41	81
106	258	238	35	103
107	137	211	41	89
109	122	247	44	111
110	161	215	46	92
111	159	204	37	91
112	148	222	48	65
113	121	243	44	98
114	173	245	57	88
115	168	210	42	75
116	172	182	41	79
117	170	218	25	105
118	177	190	50	84
120	175	296	40	85
121	146	225	36	108
122	155	240	37	87
128	172	219	46	109
132	163	241	43	93
136	171	205	46	102
141	131	283	60	68
142	152	220	40	102
143	189	210	38	89
144	149	200	MISSING	MISSING
145	152	309	51	63
148	170	215	36	94
149	129	256	53	89
150	157	192	41	94
159	118	215	MISSING	MISSING

ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
161	160	251	54	59
162	166	216	37	101
165	151	249	51	59
168	145	196	46	97
169	161	214	47	98
170	109	264	46	94
171	139	209	46	76
176	154	219	28	103
177	139	239	38	103
180	170	254	39	85
184	172	223	48	87
185	159	242	33	95
186	145	222	52	66
187	153	228	42	89
188	160	205	42	112
189	178	262	39	102
193	140	186	47	105
196	100	307	56	88
197	93	256	49	85
199	144	246	46	97
202	MISSING	MISSING	45	79
203	168	231	46	70
204	98	269	49	91
209	134	245	42	98
212	118	225	38	90
213	175	215	37	98
218	173	240	53	79
219	163	221	43	68
220	152	203	33	104
222	128	201	39	91
223	170	208	38	103
224	163	223	40	95
226	213	227	28	104
236	118	277	48	102
237	124	279	48	75
238	160	215	39	97
240	191	260	47	75
241	155	211	44	108
244	132	252	43	97
245	160	207	MISSING	MISSING

ID	NEO-PI-R/ Internalizing	NEO-PI-R/ Externalizing	DMI/ Internalizing	DMI/ Externalizing
248	114	275	48	92
249	152	231	49	90
250	168	188	38	85
251	149	214	37	90
252	150	206	39	103
253	157	211	39	90
256	157	249	43	83
257	136	240	48	105
258	109	228	46	84
265	177	192	MISSING	MISSING
273	77	309	40	76
277	159	220	47	86
278	154	231	41	93
279	152	224	44	75
282	169	208	37	96
284	158	276	48	72
287	142	221	42	111
289	158	234	30	111
290	128	209	MISSING	MISSING
292	140	204	MISSING	MISSING
MALE N	**139**	**139**	**132**	**132**
MALE MEAN	**152.2**	**232.5**	**44.6**	**90.1**
MALE SD	**27.2**	**28.8**	**7.0**	**12.7**
TOTAL N	**287**	**287**	**276**	**275**
TOTAL MEAN	**157.3**	**241.3**	**43.6**	**85.7**
TOTAL SD	**29.2**	**31.0**	**7.3**	**13.2**

LIST OF REFERENCES

LIST OF REFERENCES

Allport, G. (1937). Personality: A psychological interpretation. New York: Holt.

American Psychiatric Association (1987). Diagnostic and statistical manual of mental disorders; Third edition, Revised. Washington, D.C.: Publisher.

Anderson, T., & Leitner, L. M. (1991). The relationship between defense mechanisms and reported symptomatology in college females. Personality and Individual Differences, 12, 967-969.

Bandura, A., & Walters, R. (1963). Social learning theory and personality development. New York: Holt, Rinehart, Winston.

Barrera, M. (1981). Social support in the adjustment of pregnant adolescents: Assessment issues. In B. H. Gottlieb (Ed.), Social networks and social support (pp. 69-96). Beverly Hills: Sage.

Barrera, M. (1986). Distinctions between social support concepts, measures, and models. American Journal of Community Psychology, 14, 413-445.

Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. Personnel Psychology, 44, 1-26.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). Cognitive therapy of depression. New York: Guilford Press.

Benjamin, L. S. (1974). Structural analysis of social behavior. Psychological Review, 81, 392-425.

Ben-Porath, Y. S., & Waller, N. G. (1992). "Normal"personality inventories in clinical assessment: General requirements and the potential for using the NEO Personality Inventory. Psychological Assessment, 4, 14-19.

Bergeman, C. S., Chipuer, H. M., Plomin, R., Pedersen, N. L.,McClearn, G. E., Nesselroade, J. R., Costa, P. T. Jr.,& McCrae, R. P. (1993). Genetic and environmental effects on Openness To Experience, Agreeableness, and Conscientiousness: An adoption/twin study. Journal of Personality, 60, 159-179.

Bettelheim, B. (1982). Freud and man's soul. New York: Vintage Books.

Bond, M. H., Nakazato, H., & Shiraishi, D. (1975).Universality and distinctiveness in dimensions of Japanese person perception. Journal of Cross-Cultural Psychology, 15, 346-357.

Borkenau, P. (1988). The multiple classifications of acts and the Big Five factors of personality. Journal of Research in Personality, 22, 337-352.

Bradlee, P. M., & Emmons, R. A. (1992). Locating narcissism within the interpersonal circumplex and the Five-Factor model. Personality and Individual Differences, 13, 821-830.

Broadhead, W. E., Kaplan, B. H., James, S. A., Wagner, E. H., Schoenbach, V. J., Grimson, R., Heyden, S., Tibblin, G., & Gehlback, S. H. (1983). The epidemiological evidence for a relationship between social support and health. American Journal of Epidemiology, 117, 521-537.

Bruhn, J. G., & Phillips, B. U. (1984). Measuring social support: A synthesis of current approaches. Journal of Behavioral Medicine, 7, 151-169.

Burnham, J. C. (1968). Historical background for the study of personality. In E. F. Borgatta & W. W. Lambert (Eds.), Handbook of personality theory and research. Chicago: Rand McNally.

Buss, D. M. (1992). Manipulation in close relationships: Five personality factors in interactional context. Journal of Personality, 60, 493-499.

Byers, P. H., & Mullis, M. R. (1987). Reliability and validity of the Norbeck Social Support Questionnaire in psychiatric inpatients. Educational and Psychological Measurement, 47, 445-448.

Campbell, D. T., & Stanley, J. C. (1966). Experimental and quasi-experimental designs for research. Chicago: Rand McNally.

Carlson, R. (1971). Where is the person in personality research? Psychological Bulletin, 75, 203-219.

Cattell, R. B. (1943). The description of personality:Basic traits resolved into clusters. Journal of Abnormal and Social Psychology, 38, 476-506.

Cattell, R. B. (1947). Confirmation and clarification of primary personality factors. Psychometrika, 12, 197-220.

Cattell, R. B. (1957). Personality and motivation structure and measurement. New York: World Book.

Cobb, S. (1976). Social support as a moderator of life stress. Psychological Medicine, 38, 300-314.

Cohen, S., & Syme, S. (Eds.) (1985). Social support and health. Orlando, FL: Academic Press.

Cohen, S., & Wills, T. A. (1985). Stress, social support,and the buffering hypothesis. Psychological Bulletin, 98, 310-357.

Connell, C. M., & D'Augelli, A. R. (1990). The contribution of personality characteristics to the relationship between social support and perceived physical health. Health Psychology, 9, 192-207.

Cooper, C., & Kline, P. (1982). A validation of the Defense Mechanisms Inventory. British Journal of Medical Psychology, 55, 209-214.

Costa, P. T., Jr. (1991). Clinical use of the five-factor model: An introduction. Journal of Personality Assessment, 57, 393-398.

Costa, P. T., Jr., Busch, C. M., Zonderman, A. B.,& McCrae, R. R. (1986). Correlations of the MMPI factor scales with measures of the five factor model of personality. Journal of Personality Assessment, 50, 640-650.

Costa, P. T., Jr., & McCrae, R. R. (1976). Age differences in personality structure: a cluster analytic approach. Journal of Gerontology, 31, 564-570.

Costa, P. T., Jr., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. Journal of Personality and Social Psychology, 38, 668-678.

Costa, P. T., Jr., & McCrae, R. R. (1985). The NEO Personality Inventory. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., Jr., & McCrae, R. R. (1988a). From catalog to classification: Murray's needs and the five-factor model. Journal of Personality and Social Psychology, 55, 258-265.

Costa, P. T., Jr., & McCrae, R. R. (1988b). Personality in adulthood: A six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. Journal of Personality and Social Psychology, 54, 583-863.

Costa, P. T., Jr., & McCrae, R. R. (1992). NEO-PI-R Professional Manual. Odessa, FL: Psychological Assessment Resources.

Costner, H. L. (1989). The validity of conclusions in evaluation research: A further development of Chen and Rossi's theory-driven approach. Evaluation and Program Planning, 12, 345-353.

Cramer, P. (1988). The Defense Mechanisms Inventory: A review of the research and discussion of the scales. Journal of Personality Assessment, 52, 142-164.

Digman, J. M. (1988). Classical theories of trait organization and the Big Five Factors of personality. Presented at the Annual Meeting of the American Psychological Association, Atlanta.

Digman, J. M. (1989). Five robust trait dimensions: Development, stability and utility. Journal of Personality, 57, 195-214.

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. Annual Review of Psychology, 41, 417-440.

Digman, J. M. & Inouye, J. (1986). Further specification of the five robust factors of personality. Journal of Personality and Social Psychology, 50, 116-123.

Dollinger, S. J., & Orf, L. A. (1991). Personality and performance in "personality": Conscientiousness and Openness. Journal of Research in Personality, 25, 276-284.

Dunkel-Schetter, C., Folkman, S., & Lazarus, R. S.(1987). Correlates of social support receipt. Journal of Personality and Social Psychology, 53, 71-80.

Dye, D. A. (1991). Construct validity of the Individual Achievement Record: Phase II - A clarification of the underlying factors. (Technical Report PRD-91-04). Washington D.C.: Office of Personnel Management.

Eaton, W. W. (1978). Life events, social supports, and psychiatric symptoms: A reanalysis of the New Haven data. Journal of Health and Social Behavior, 19, 230-234.

Elliott, T. R., & Gramling, S. E. (1990). Personal assertiveness and the effects of social support among college students. Journal of Counseling Psychology, 37, 427-436.

Eysenck, H. J. (1960). Experiments in personality. London: Routledge & Kegan Paul.

Fagan, P. J., Wise, T. N., Schmidt, C. W., Ponticas, Y. (1991). A comparison of five-factor personality dimensions in males with sexual dysfunction and males with paraphilias. Journal of Personality Assessment, 57, 434-448.

Fisher, J. D., Silver, R. C., Chinsky, J. M., Goff, B., Klar, Y., & Zagieboylo, C. (1989). Psychological effects of participation in a large group awareness training. Journal of Consulting and Clinical Psychology, 57, 747-755.

Fiske, D. W. (1949). Consistency of the factorial structures of personality ratings from different sources. Journal of Abnormal Social Psychology, 44, 329-344.

Florian, V., & Krulik, T. (1991). Loneliness and social support of mothers of chronically ill children. Social Science and Medicine, 32, 1291-1296.

Freud, S. (1905). Three essays on the theory of sexuality. The Standard Edition. London: Hogarth Press.

Freud, S. (1915). Instincts and their vicissitudes. The Standard Edition. London: Hogarth Press.

Freud, S. (1920). Beyond the pleasure principle. The Standard Edition. London: Hogarth Press.

Freud, S. (1923). The ego and the id. The Standard Edition. London: Hogarth Press.

Freud, S. (1926). Inhibitions, symptoms, and anxiety. The Standard Edition. London: Hogarth Press.

Freud, S. (1936). The problems of anxiety. New York: Norton.

Galinsky, M. D. (1971). Relationship among personality, defense, and academic failure. Journal of Personality Assessment, 35, 359-363.

Gleser, G. C., & Ihilevich, D. (1969). An objective instrument for measuring defense mechanisms. Journal of Consulting and Clinical Psychology, 33, 51-60.

Gleser, G. C., & Ihilevich, D. (1979). Personality factors and ego defenses. Academic Psychology Bulletin, 1, 171-179.

Goldberg, L. R. (1990). An "alternative description of personality": The big five-factor structure. Journal of Personality and Social Psychology, 59, 1216-1229.

Goldberg, L. R. (1992). The development of markers of the Big-Five factor structure. Psychological Assessment, 4, 26-42.

Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), Review of personality and social psychology (Vol. 2, pp. 141-166). Beverly Hills: Sage.

Goldberg, L. R. (1993). The structure of phenotypic personality traits. American Psychologist, 48, 26-34.

Goplerud, E. N. (1980). Social support and stress during the first year of graduate school. Professional Psychology, 11, 283-290.

Gordon, N. G. (1979). Defense mechanism preference and dimensions of psychopathology. Psychological Reports, 44, 188-190.

Graziano, W. G., & Ward, D. (1992). Probing the Big Five in adolescence: Personality and adjustment during a developmental transition. Journal of Personality, 60, 425-439.

Greenberg, J. R., & Mitchell, S. A. (1983). Object relations in psychoanalytic theory. Cambridge: Harvard University Press.

Greenberg, R. P., & Fisher, S. (1984). Menstrual discomfort, psychological defenses, and feminine identification. Journal of Personality Assessment, 48, 643-648.

Guilford, J. P. (1957). Personality. New York: McGraw-Hill.

Guilford, J. P. (1975). Factors and factors of personality.Psychological Bulletin, 82, 802-814.

Guntrip, H. (1963). Four phases of psychodynamic theory.In Guntrip, H., Schizoid phenomena, object relations and the self. Madison, CT: International Universities Press, Inc.

Henderson, A. S. (1984). Interpreting the evidence on social support. Social Psychiatry, 19, 49-52.

House, J., & Kahn, R. (1985). Measures and concepts of social support. In S. Cohen & S. L. Syme (Eds.), Social Support and Health. Orlando, FL: Academic Press.

Hunter, J. E. (1987). Multiple dependent variables in program evaluation. In M. M. Mark & R. L. Shotland (Eds.), Multiple methods in program evaluation: New directions for program evaluation, Number 35. San Francisco: Jossey-Bass.

Hunter, J. E., & Gerbing, D. W. (1982). Unidimensional measurement, second order factor analysis, and causal models. Research in Organizational Behavior, 4, 267-320.

Ihilevich, D., & Gleser, G. C. (1986). Defense mechanisms: Their classification, correlates, and measurement with the Defense Mechanisms Inventory. Owosso, MI: DMI Associates.

Ihilevich, D., & Gleser, G. C. (1991). Defenses in psychotherapy: The clinical application of the Defense Mechanisms Inventory. Owosso, MI: DMI Associates.

John, O. P. (1989). Towards a taxonomy of personality descriptors. In D. M. Buss and N. Cantor (Eds.), Personality psychology: Recent trends and emerging directions (pp. 261-271). New York: Springer-Verlag.

Jung, J. (1988). Toward a social psychology of social support. Basic and Applied Social Psychology, 8, 57-83.

Juni, S. (1992). Familial dyadic patterns in defenses and object relations. Contemporary Family Therapy, 14, 259-268.

Kelly, G. A. (1955). The psychology of personal constructs:A theory of personality. New York: Norton.

Kessler, R. C., & McLeod, J. D. (1985). Social support and mental health in community samples. In S. Cohen & S. L. Syme (Eds.), Social support and health (pp. 219-240). Orlando: Academic Press.

Kincaid, S. B., & Caldwell, R. A. (1991). Initiator status and family support during marital separation: A test of an interaction hypothesis. American Journal of Community Psychology, 19, 71-79.

Kincaid, S. B., & Caldwell, R. A. (in press). Marital separation: Cause, coping and consequences. Journal of Divorce and Remarriage.

Klusman, L. E. (1982). The Defense Mechanisms Inventory as a predictor of affective responses to threat. Journal of Clinical Psychology, 38, 151-155.

Lakey, B., & Cassady, P. B. (1990). Cognitive processes in perceived social support. Journal of Personality and Social Psychology, 59, 337-343.

Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal,and coping. New York: Springer.

Leary, T. (1957). Interpersonal diagnosis of personality. New York: Roland Press.

Leavy, R. (1983). Social support and psychological disorder:A review. Journal of Community Psychology, 11, 3-21.

Leong, F. T. L., & Dollinger, S. J. (1991). In D. J. Keyser& R. C. Sweetland (Eds.), Test critiques, Volume VIII (pp. 527-539). Austin, TX: Pro-Ed.

Levine, R. L., & Hunter, J. E. (1983). Regression methodology, correlation, meta-analysis, confidence intervals, and reliability. Journal of Leisure Research, 15, 323-343.

Lin, N., & Ensel, W. M. (1984). Depression-mobility and its social etiology: The role of life events and social support. Journal of Health and Social Behavior, 25, 176-188.

Lorr, M., Youniss, R. P., & Kluth, C. (1992). The Interpersonal Style Inventory and the five-factor model. Journal of Clinical Psychology, 48, 202-206.

Maddi, S. R. (1980). Personality theories: A comparative evaluation. Homewood, IL: Dorsey.

McAdams, D. P. (1992). The five-factor model in personality:A critical appraisal. Journal of Personality, 60, 329-361.

McCrae, R. R. (1987). Creativity, divergent thinking,and openness to experience. Journal of Personality and Social Psychology, 52, 1258-1265.

McCrae, R. R., & Costa, P. T., Jr. (1984). Personality is transcontextual: A reply to Veroff. Personality and Social Psychology Bulletin, 10, 175-179.

McCrae, R. R., & Costa, P. T., Jr. (1985). Personality in adulthood. New York: Guilford.

McCrae, R. R., & Costa, P. T., Jr. (1985). Comparison of EPI and psychoticism scales with measures of the five-factor model of personality. Personality and Individual Differences, 6, 587-597.

McCrae, R. R., & Costa, P. T., Jr. (1986). Clinical assessment can benefit from recent advances in personality psychology. American Psychologist, 41, 1001-1003.

McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. Journal of Personality and Social Psychology, 52, 81-90.

McCrae, R. R., & Costa, P. T., Jr. (1989a). The structure of interpersonal traits: Wiggins' circumplex and the five-factor model. Journal of Personality and Social Psychology, 56, 586-595.

McCrae, R. R., & Costa, P. T., Jr. (1989b). Reinterpreting the Myers-Briggs type Indicator from the perspective of the five-factor model of personality. Journal of Personality, 57, 17-40.

McCrae, R. R., Costa, P. T., Jr., & Busch, C. M. (1986). Evaluating comprehensiveness in personality systems: The California Q-Set and the five-factor model. Journal of Personality, 54, 430-446.

McCrae, R. R., Costa, P. T., Jr., & Piedmont, R. L. (1993). Folk concepts, natural language, and psychological constructs: The California Psychological Inventory and the five-factor model. Journal of Personality, 61, 1-26.

McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. Journal of Personality, 60, 175-215.

Minskoff, S., & Curtis, J. M. (1984). Comparison of defense mechanisms utilized in perception by congenitally blind and sighted respondents. Psychological Reports, 55, 228-230.

Mischel, W. (1968). Personality and assessment. New York: Wiley.

Mischel, W. (1973). On the interface of cognition and personality: Beyond the person-situation debate. American Psychologist, 34, 740-754.

Monroe, S. M., & Steiner, S. C. (1986). Social support and psychopathology: Interrelations with preexisting disorder, stress and personality. Journal of Abnormal Psychology, 95, 29-39.

Morelli, G., & Andrews, L. (1982). Cognitive irrationality and defensiveness. Psychological Reports, 51, 387-393.

Noam, G. G., & Recklitis, C. J. (1990). The relationship between defenses and symptoms in adolescent psychopathology. Journal of Personality Assessment, 54, 311-327.

Norbeck, J. S., Chaftez, L., Skodol-Wilson, H., & Weiss, S. J.(1991). Social support needs of family caregivers of psychiatric patients from three age groups. Nursing Research, 40, 208-213.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1981).The development of an instrument to measure social support. Nursing Research, 30, 264-269.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1983).The further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. Nursing Research, 32, 4-9.

Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. Journal of Abnormal and Social Psychology, 66, 574-583.

Ostendorf, F. (1990). [Language and personality structure:Toward the validation of the five-factor model of personality.] Regensburg: S. Roderer.

Peabody, D., & Goldberg, L. R. (1989). Some determinants of factor representations of trait adjectives. Journal of Personality and Social Psychology, 57, 552-567.

Pedersen, N. L., McClearn, G. E., Plomin, R., & Nesselroade,J. R. (1988). Neuroticism, extraversion and related traits in adult twins reared apart and reared together. Journal of Personality and Social Psychology, 55, 950-957.

Peglar, M., & Borgen, F. H. (1984). The defense mechanisms of coronary patients. Journal of Clinical Psychology, 40, 669-679.

Phares, E. J. (1984). Introduction to personality. Columbus, OH: Merrill Publishing Co.

Piersma, H. L. (1986). The factor structure of the Millon Clinical Multiaxial Inventory (MCMI) for psychiatric inpatients. Journal of Personality Assessment, 50, 578-584.

Primomo, J., Yates, B. C., & Woods, N. F. (1990). Social support for women during chronic illness: The relationship among sources and types to adjustment. Research in Nursing and Health, 13, 153-161.

Quittner, A. L., Glueckauf, R. L., & Jackson, D. N. (1990).Chronic parenting stress: Moderating versus mediating effects of social support. Journal of Personality and Social Psychology, 59, 1266-1278.

Rader, G. E., DeMoyne-Bekker, L., Brown, L., &Richardt, C. (1978). Psychological correlates of unwanted pregnancy. Journal of Abnormal Psychology, 87, 373-376.

Revelle, W. (1987). Personality and motivation; sources of inefficiency in cognitive performance. Journal of Research in Personality, 21, 436-452.

Rogers, C. R. (1961). On becoming a person: A therapist's view of psychotherapy. Boston: Houghton Mifflin.

Rotter, J. B. (1982). The development and application of social learning theory: Selected papers. New York: Praeger.

Sarason, I., Ganzer, N. J., & Singer, M. (1972). Effects of modeled self-disclosure on the verbal behavior of persons differing in defensiveness. Journal of Consulting and Clinical Psychology, 39, 483-490.

Sarason, I., & Sarason, B. (1982). Concomitants of social support: Attitudes, personality characteristics, and life experiences. Journal of Personality, 50, 331-344.

Schill, T., & Bekker, D. (1976). Sexual responsivity and ego defenses. Journal of Clinical Psychology, 32, 79-80.

Schill, T., Rader, G., Evans, R., and Segall, S. (1976).Defense preferences of high- and low-hostility subjects. Journal of Consulting and Clinical Psychology, 44, 867.

Scholz, J. A. (1973). Defense styles in suicide attempters. Journal of Consulting and Clinical Psychology, 41, 70-73.

Shapiro, D. (1965). Neurotic styles. New York: Basic Books.

Shapiro, D. (1981). Autonomy and rigid character. New York: Basic Books.

Shapiro, D. (1989). Psychotherapy of neurotic character. New York: Basic Books.

Skinner, B. F. (1938). The behavior of organisms. New York: Appleton.

Smith, T. W., & Williams, P. G. (1992). Personality and health: Advantages and limitations of the five-factor model. Journal of Personality, 60, 395-423.

Tett, R. P., Jackson, D. N., & Rothstein, M. (1991).Personality measures as predictors of job performance: A meta-analytic review. Personnel Psychology, 44, 703-742.

Thurstone, L. L. (1934). The vectors of the mind. Psychological Review, 41, 1-32.

Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjectives Scale to include the Big Five dimensions of personality. Journal of Personality and Social Psychology, 59, 781-790.

Trull, T. J. (1992). DSM-III-R personality disorders and the five-factor model of personality: An empirical comparison. Journal of Abnormal Psychology, 101, 553-560.

Vaillant, G. E. (1966). A twelve year follow-up of New York narcotic addicts. IV: Some characteristics and determinants of abstinence. American Journal of Psychiatry, 123, 573-584.

Vaillant, G. E. (1986). Empirical studies of ego mechanisms of defense. Washington D.C.: American Psychiatric Press, Inc.

Vickers, R. R., & Hervig, L. K. (1981). Comparison of three psychological defense mechanism questionnaires. Journal of Personality Assessment, 45, 630-638.

Vickers, R. R., Hervig, L. K., Rahe, R. H., & Rosenman, R. H.(1981). Type A behavior pattern and coping and defense. Psychosomatic Medicine, 43, 381-396.

Viney, L. L., & Menton, M. (1974). Defense mechanism preferences and the expression of anxiety. Social Behavior and Personality, 2, 50-55.

Vinokur, A., Schul, Y., & Caplan, R. (1987). Determinants of perceived social support: Interpersonal transactions, personal outlook, and transient affective states. Journal of Personality and Social Psychology, 53, 1137-1145.

Wade, J. B., Dougherty, L. M., Hart, R. P., & Cook, D. B. (1992). Patterns of normal personality structure among chronic pain patients. Pain, 48, 37-43.

Waller, N. G., & Ben-Porath, Y. (1987). Is it time for clinical psychology to embrace the five-factor model of personality? American Psychologist, 42, 887-889.

Watson, D., & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. Journal of Personality, 60, 441-476.

Watson, J. B. (1930). Behaviorism. Chicago: University of Chicago Press.

Weissman, H. N., Ritter, K., & Gordon, R. M. (1971). Reliability study of the Defense Mechanisms Inventory. Psychological Reports, 29, 1237-1238.

Widiger, T. A., & Trull, T. J. (1992). Personality and psychopathology: An application of the five-factor model. Journal of Personality, 60, 363-393.

Wiggins, J. S. (1968). Personality structure. Annual Review of Psychology, 19, 293-350.

Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. Journal of Personality and Social Psychology, 37, 395-412.

Wiggins, J. S. (1982). Circumplex models of interpersonal behavior in clinical psychology. In Kendall, P. C., and Butcher, J. N. (Eds.), Handbook of Research Methods in Clinical Psychology. New York: Wiley.

Wiggins, J. S., & Pincus, A. L. (1992). Personality: Structure and assessment. Annual Review of Psychology, 43, 473-504.

Wiggins, J. S., & Trapnell, P. D. (1992). Personality structure: The return of the Big Five. In Briggs, S. R., Hogan, R., Jones, W. H. (Eds.), Handbook of Personality Psychology. Orlando, FL: Academic.

Wilcox, B. (1981). The role of social support in adjustment to marital disruption: A network analysis. In B. Gottlieb (Ed.), Social networks and social support. Beverly Hills: Sage.

Wilson, J. F. (1982). Recovery from surgery and scores on the Defense Mechanisms Inventory. Journal of Personality Assessment, 46, 312-319.

Wise, T. N., Fagan, P. J., Schmidt, C. W., Ponticas, Y. (1991). Personality and sexual functioning of transvestitic fetishists and other paraphliacs. Journal of Nervous and Mental Disease, 179, 694-698.

Wolfe, M. M. (1978). Social validity: The case for subjective measurement, or how applied behavior analysis is finding its heart. Journal of Applied Behavioral Analysis, 11, 203-214.

Yang, K. S., & Bond, M. H. (1990). Exploring implicit personality theories with indigenous or imported constructs: The Chinese case. Journal of Personality and Social Psychology, 58, 1087-1095.

Zuckerman, M., Kuhlman, D. M., & Camac, C. (1988). What lies beyond E and N? Factor analysis of scales believed to measure basic dimensions of personality. Journal of Personality and Social Psychology, 54, 96-107.

Zuroff, D. C. (1986). Was Gordon Allport a trait theorist? Journal of Personality and Social Psychology, 51, 993-1000.