

**A STUDY OF PERSONALITY PROFILES
OF PEOPLE IN A COLLEGE LEADERSHIP TRAINING PROGRAM**

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A STUDY OF PERSONALITY PROFILES
OF PEOPLE IN A COLLEGE LEADERSHIP TRAINING PROGRAM

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Presented to
The Graduate Council of
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In Partial Fulfillment
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DEDICATION

This thesis is dedicated to my family and friends. My parents, Elaine and Eldred Kahn, who encouraged my pursuit of higher education, my husband, Jim, and daughter, Colleen, whose patience, love, and encouragement kept me going, and to my sister, Laurie, who convinced me to pursue a college education. This thesis is also dedicated to my many good friends who provided love and support during my college years, especially CeCe.

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ABSTRACT

The purpose of this study was to determine if relationships exist among personality types as defined by the Myers Briggs Type Indicator (MBTI) and behavior traits as defined by the Personal Profile System (PPS) for college students enrolled in a leadership training program. It was predicted that strong relationships exist between the two measures when used with this population. The subjects were thirty-five students accepted by Austin Peay State University to participate in the President's Emerging Leaders Program (PELP), 15 males, 20 females. Only those students who had previously completed both the MBTI and the PPS were chosen to participate. Results indicated that a statistically significant relationship exists between the descriptors defined by both instruments, with the exception of the PPS trait of Influencing, which did not correlate with any MBTI type category.

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CHAPTER I

INTRODUCTION

Scientific personality assessment began with the study of individual differences through psychological measurement (Lanyon & Goodstein, 1982). Personality assessment instruments are designed to measure emotional, behavioral, interpersonal, and attitudinal predispositions among individuals (Anastasi, 1976). Although personality assessment has a long history, usage of these instruments has increased markedly only in the past few decades (Henkel & Wilmoth, 1988).

Beginning with astrology in early Mesopotamia approximately 25 centuries ago, systematic efforts to understand and predict the behavior of individuals included such theories as palmistry, phrenology, and biorhythms. Darwin's work on evolution gave considerable impetus to the study of individual differences (Lanyon & Goodstein, 1971). In the 19th century, Sir Francis Galton initiated the measurement of nonintellectual faculties. James McKeen Cattell introduced the study of individual differences in the United States in 1888. Although his work was primarily in the areas of psychophysics, perception and reaction time, he had a strong influence on the development of personality tests (Boring, 1929). However, it was not until 1915 when an English scientist named Webb conducted a study to summarize important aspects of personality with a large

number of subjects using factor analysis (Lanyon & Goodstein, 1971). Personality inventories originated with attempts to identify emotional maladjustment and neurotic behavior (Anastasi, 1964). However, most of the newer inventories are concerned with personality traits and behaviors of normal individuals (Anastasi, 1976).

There are two basic types of self-report personality inventories. The first is based on personality types (typology) and the second is based on personality traits (trait theory). Typology refers to " . . . a scientific method of careful observation of similarities and differences among individual personalities in the everyday world. These similarities and differences are in turn grouped according to certain principles . . . " (Spoto, 1989, p. 1). Carl G. Jung, a prominent typologist, theorized that variations in behavior which seem random are actually consistent and orderly, owing to differences in people's perception and judgment (Myers & McCaulley, 1985). Jung's typology deals with the psychology of consciousness and distinguishes between attitude types and function types (Jung, 1921/1971). Jung describes four attitudes that are divided into pairs: extraversion or introversion, and judgement or perception. He also identifies four personality functions that are divided into pairs: the perceiving or irrational functions (sensation and

intuition), and the judging or rational functions (thinking and feeling).

The attitude of extraversion is typified by activity expressed outwardly toward events, people, and things, and an individual's relationship with and dependence on them. This type is influenced and motivated by the environment (Fordham, 1953/1966). The introverted attitude is typified by activity expressed inwardly toward subjective factors and inner attitudes. This type is influenced and motivated by personal thoughts and judgments (Fordham, 1953/1966).

Judgment and perception attitudes refer to an individual's orientation to the outer world (McCaulley, 1990). A perceptive attitude is typified by a curious and interested view of the environment, while a judgment attitude is typified by a need to agree or disagree with the outside world (Myers, 1969).

The perceiving personality function of sensation identifies what is perceived by the individual with the physical senses. Intuition identifies what is understood by the individual about past experience and future possibilities. The rational personality function of thinking identifies that which provides the individual with meaning and understanding, while feeling identifies an individual's values (Fordham, 1953/1966).

One widely used personality instrument based on Jung's theory of psychological types is the Myers-Briggs Type

Indicator (MBTI) (Watkins & Campbell, 1990; Murray, 1970). Developed by the mother-daughter team of Katharine Briggs and Isabel Briggs Myers, it is not intended to measure personality types (Myers & McCaulley, 1985), but to register basic preferences in regard to perception and judgment on four bipolar, theoretically dichotomous indices (McCaulley, 1990). The EI index reflects the attitude of extraversion or introversion. The SN index reflects the perceiving preference of sensing or intuition. The TF index reflects the judging preference of thinking or feeling, and the JP index reflects the attitude of judgment or perception. Each of the 16 types are denoted by the letters for the preferred pole (i.e., ISTJ, ENFP, etc.) (McCaulley, 1990). The instrument is a forced-choice, self-report inventory designed for use with normal subjects (Thompson & Borrello, 1986).

The MBTI is used in the areas of clinical, counseling, and personality testing in a variety of settings including business organizations, academic settings, and religious communities (DeVito, 1985). It has been used with groups within organizations to develop teamwork, improve communications, and facilitate understanding of and appreciation for individual differences (McCaulley, 1990). The MBTI has been used in counseling to help individuals understand themselves and contribute to their personal growth (Healy, 1989). In academic settings, it has been

employed as a predictor of choice of major study (Brooks & Johnson, 1979).

Some personality inventories are based on trait theory. Trait theory has been defined by Lanyon and Goodstein as, " . . . underlying dispositional determinants" (1982, p. 29). In his 1928 book, Emotions of Normal People, William Moulton Marston theorized that behavior could be studied on a two-axis model, process-oriented and product-oriented, in either a favorable or unfavorable environment. He identified four primary emotions that he believed were related to neurological results (Geier, 1979). The primary emotions Marston identified were: 1) Compliance, 2) Dominance, 3) Inducement and, 4) Submission. Marston also included over 140 adjectives that could be used to describe each of the four primary emotions (Marston, 1928/79). Marston defined primary emotions as "Nodal points of emotion series, where relationships of alliance, conflict and increase or decrease of motor self reach maximum, and begin to change toward opposite type of relationship" (p. 112). The emotion of compliance is identified as an implication that the individual is being moved by dictates of others. The emotion of dominance is identified as a superiority of the individual over an antagonist. The emotion of inducement is identified as the act of influencing others, and the emotion of submission is identified as the act of yielding or the state of obedience (Marston, 1928/79).

Marston also theorized that these primary emotions were subject to change depending on environmental factors affecting the individual.

In 1977, John G. Geier employed Marston's trait theory to produce a personality assessment tool called the Personal Profile System (PPS). In the development of this instrument, Geier retitled three of Marston's four primary emotions as: 1) Dominance (dominance), 2) influencing (inducement), 3) Cautiousness/ Compliance (compliance), and 4) Steadiness (submission). In the Personal Profile System Manual, dominance is defined as "Active positive movement in an antagonistic environment" (p. 27). Inducement of Others is defined as "Active positive movement in a favorable environment" (p. 27). Submission is defined as "Passive movement in a favorable environment" (p. 27), and Compliance is defined as a "Cautious, tentative response designed to reduce antagonistic factors in an unfavorable environment" (p. 27). Geier believes that this instrument allows a person to obtain a systematic and comprehensive perception of their behavioral tendencies and the behavioral tendencies of those in their environment (Henkel, 1988). The instrument is a forced-choice, self-report inventory designed for use with normal subjects.

The PPS is used in the areas of human resource development, training, and career counseling. It has been used in human resource development to identify primary work

styles of managers (PPS Manual, 1993). It has also been used to identify differences between populations in military training institutions (Rosebush & Antons, 1985), and in business organizations to assist in identifying stereotyping as a means of ordering an individual's social field (Geier, 1979).

While the MBTI and the PPS are theoretically different, they both attempt to identify individual differences in personality (Grigsby, 1982). Technically, type theory groups people according to a few select types and trait theory characterizes people according to a number of traits and the degree to which they exhibit those traits (Geier, 1979). The MBTI is based on Jung's type theory and does group people according to type. However, when the MBTI is scored, each of the four indices produces a "preference score" which determines the degree of intensity of a particular type (Myers, 1962). The PPS is based on Marston's trait theory and groups people according to primary emotions, or traits. The PPS scoring also determines the degree or intensity of a particular trait (PPS Manual, 1986).

Both instruments are forced-choice, opinion instruments that attempt to identify individual differences. Both instruments are purported to help individuals understand themselves and their relationship to others (Grigsby, 1982). Many research studies have examined various applications of

the MBTI and reported on its reliability and validity (Carskadon, 1977; Murray, 1990). Some research has been done using the PPS which examines its applications, reliability, and validity, but there is a lack of data surrounding its use (McGinnis, 1985). One study has been completed that questions whether a relationship exists between the two instruments and whether they can be used interchangeably. In 1982, James Grigsby completed a study comparing the personality measurements of both instruments. The subjects were 265 students drawn from two community colleges and two universities in central and south Florida. Grigsby describes his subjects as a "convenience sample" (p. 23) and states that he did not employ any procedure for selecting a random sample. He concluded that, " . . . a significant relationship exists between the measures of the descriptors produced by the Myers-Briggs Type Indicator and the Personal Profile System" (p. 46). Grigsby recommends that future research be conducted with other specific groups. The President's Emerging Leaders Program (PELP) at APSU constitutes one such specialized group with which to conduct similar research. Participation in this group is limited, as outlined in APSU's Application for the four year program, to the following:

High School Students

- (1) GPA of 3.0 or above
- (2) Evidence of participation in high school and community activities (church, 4-H, civic)
- (3) Evidence of leadership qualities as denoted by participation in activities and the successful completion of specified extracurricular projects or holding of leadership positions
- (4) Three (3) references, including at least one (1) from an academic person (principal, counselor, teacher) and one (1) from a person representing a community resource
- (5) Interviews may be requested

Community College Graduates/Rising Juniors at APSU

- (1) Hold an associate degree from a community college with a GPA of 3.0 or above
or
Hold junior status at APSU with a GPA of 3.0 or above
- (2) Evidence of commitment to community activities as indicated by academic and/or community involvement
- (3) Three (3) references, including at least one (1) from an academic person (principal, counselor, teacher) and one (1) from a person representing a community resource
- (4) Interviews may be requested

Students who meet these requirements and are admitted to the PELP program constitute an elite group at APSU. This research is being initiated in order to determine if relationships exist among personality traits as defined by the MBTI and the behavior traits as defined by the PPS for college students enrolled in a leadership training program. It is predicted that strong relationships exist among the two measures when used with this population.

CHAPTER II

REVIEW OF THE LITERATURE

The literature in personality assessment is replete with examples demonstrating its applicability to a wide variety of subjects and situations. This study is concerned with relationships among the MBTI and the PPS personality types when used with a group of college students enrolled in a college leadership training program. Therefore, this review will include related literature that contributes to a better understanding of the MBTI and the PPS as they relate to leadership.

Leadership has been researched for decades by sociologists and psychologists attempting to eliminate the ambiguity in the conceptualization of leadership (Vroom & Yetton, 1973). In the study of leadership over the last 50 years, the emphasis has gone from the study of basic personality traits, to a study of observable behaviors, to a contingency view of situationally dependent behaviors (Atwater & Yammarino, 1993).

In 1948, Stogdill reviewed research on emergent leadership and personality in unstructured groups. He concluded that the traits of dominance, extraversion, sociability, ambition or achievement, responsibility, integrity, self-confidence, mood and emotional control, diplomacy, and cooperativeness were positively related to emergent leadership. These findings were replicated by Mann

in 1959. However, in 1983, Muchinsky reported that there was ". . . little or no connection between personality and leader effectiveness" (p. 428). In 1986, Lord, De Vader and Allinger attributed these apparent inconsistencies to ". . . overgeneralization of the findings on personality and leadership . . . " (p. 402).

In 1994, Hogan, Curphy and Hogan defined leadership as persuasion and maintained that leadership occurs only when others willingly adopt the goals of a group as their own (1994). They also stated that, ". . . personality measures can predict leadership effectiveness. . ." (p. 501), which brings the emphasis in the study of leadership back to the study of basic personality traits or types.

The Myers-Briggs Type Indicator

Katharine Briggs and her daughter, Isabel Briggs Myers, designed the Myers-Briggs Type Indicator as a means to implement C. G. Jung's theory of psychological types (McCaulley, 1990). This instrument allows an individual to select preferences from four bipolar, theoretically dichotomous, preferences (Myers with Myers, 1980): Extraversion (E) or Introversion (I), Sensing Perception (S) or Intuitive Perception (N), Thinking Judgment (T) or Feeling Judgment (F), and Perception (P) or Judgment (J). A preference in each dimension forms the personality type for an individual (e.g., ESTJ). There are sixteen possible combinations or MBTI types (Grisby, 1982).

Isabel Myers (1962) estimated the prevalence of MBTI types in the general population of the United States to be:

- 75% of the population prefer E
- 75% of the population prefer S
- 65% of females prefer F
- 60% of males prefer T
- 55% to 60% of the population prefer J

The Center for Applications of Psychological Type, Inc. (CAPT) in Gainesville, Florida maintains the MBTI data bank, a bank of more than 250,000 MBTI records. This data bank reports that females have relatively more F types and males have relatively more T types. It is also reported that STJ types are more frequent among males and that SFJ types are more frequent among females (Myers & McCaulley, 1985).

MBTI answer sheets submitted to Educational Testing Service (ETS) for machine-scoring frequently contain the occupation of the individual being assessed. These occupations are coded according to the Dictionary of Occupations Titles (DOT) (Myers & McCaulley, 1985). Results recorded by CAPT indicate that specific MBTI personality types are more frequently found in leadership positions. Between 1971 and 1982, CAPT reported 7,436 individuals employed as Managers and Administrators, as defined by the DOT. Of those individuals, 17.04% were type ESTJ, 14.94% were ISTJ, and 10.06% were ENTJ. The remaining 57.96% of Managers and Administrators were divided between the other

13 personality types; the highest percentage, 7.32%, being ESFJ and the lowest, 2.53, being ISFP (Myers & McCaulley).

Similar results were reported in a study of 199 participants in project manager seminars (Mills, Robey, & Smith, 1985). The MBTI was administered to participants on the first day of the seminar without any reference to purpose or objective. Results showed that 29.6% of the project managers were type ISTJ and 21.1% were ESTJ. The remaining 50.7% of the subjects were distributed relatively evenly among the remaining 14 types.

In her book, Gifts Differing (Myers with Myers, 1980), Isabel Briggs Myers discusses the MBTI personality types in relation to occupation. She believes that the IST types enjoy organizing principles and facts and are at home in occupations such as economics and law. The EST types prefer to organize situations and implement strategies, making them more at home in business and industry. Briggs-Myers cites a study of 488 undergraduates at the Wharton School of Finance and Commerce at the University of Pennsylvania. The distribution of these students showed the highest number of students, 21.7%, fell into the ESTJ type, the second-highest, 12.9%, were ESTP types, and the third-highest, 9.0%, were ISTJ types. The remaining 56.4% fell into the other 13 personality types; the greatest number, 8.8%, being ESFJ, and the lowest, .2%, being INFJ.

The MBTI was applied to business in a 1978 study by Henderson and Nutt in an effort to measure cognitive styles using the MBTI and determine how that style influenced decision making behavior. They administered the MBTI to 124 subjects, most of whom held upper management or CEO positions in a business environment. Their findings indicated that ST's demand for analytic precision made them risk averse until all facts had been assessed, and that the SF's idea of sharing risk tended to make them risk tolerant. The authors stated that, "Cognitive style influenced the choices made by executives in this study" (p. 384).

Research has also been done on the applications of the MBTI to leadership, using military training installations. One such study, conducted by Roush and Atwater (1992) tested 90 midshipmen squad-leaders and 1,235 in-coming freshmen at the U.S. Naval Academy at Annapolis, Maryland. The author's intent was to demonstrate the usefulness of the MBTI in understanding how psychological preferences can provide insight into leadership behavior. The MBTI was used to identify transformational leaders, transactional leaders, and those individuals with self-perceptions of their leadership styles whose self-ratings agreed with their follower's ratings. Results indicated that use of the MBTI is appropriate to understand transformational leaders, those who persuade others to pursue a common goal, and

transactional leaders, those who clarify requirements and their contingencies, and a leader's accurate self-perception of leadership style. Roush and Atwater found IS sensing types to have the most accurate self-perceptions, and those leaders with ST preferences to exhibit more transformational leadership behaviors. The results of this study indicated that introverts' ratings by followers were as high as extraverts' on transformational leadership, suggesting that a preference for extraversion may not be essential to leadership ability.

Over 1500 studies of the MBTI are included in the Myers-Briggs Type Indicator Manual (Myers & McCaulley, 1985). The authors present data to show that the MBTI is related to personality measures, SAT performance, the Edwards Personal Preference Schedule, and the Jungian Type Survey. Correlations between corresponding dimensions on these instruments are reported to be statistically significant. Myers and McCaulley present reliability of the MBTI with particular attention paid to stability of continuous scores. They also emphasize split-half reliabilities, alpha coefficients, and split-half reliabilities based on opposing scores. DeVito (1985) suggests that the MBTI falls short of the criteria for being a psychological test due to the lack of normative data for continuous scores in the MBTI Manual.

Studies regarding the construction and evaluation of this instrument have been conducted by other researchers as well. Carlyn (1977) provided an extensive review of available intercorrelation studies, including type-category scores, with results that indicated only three typological dimensions exist: EI, SI, and TF. She found a significant correlation between the SN category and the JP category, indicating that sensors tend to be judging types and intuiters tend to be perceptive types. When investigating the intercorrelation of continuous scores on the MBTI, Carlyn found the EI, SN and TF scales to be independent of each other, the SN scale to correlate with the JP scale, and the TF scale to correlate with the JP scale.

Carlyn also examined the reliability of this instrument considering internal consistency and measures of stability. She found that, " . . . reliabilities of type categories appear to be satisfactory in most cases, although there is a rather wide range between conservative and liberal estimates of internal consistency" (p. 465).

In reviewing the data for test-retest reliability for MBTI type-category scores, Carlyn discovered that studies involving elementary teachers reported high test-retest correlations for teachers who remain in a district for at least six years. She suggested that stability of scores may be attributable to occupation or age.

Carlyn also examined content validity, predictive validity, and construct validity. In reviewing the content validity, she reported that the EI, SN, and TF scales were consistent with Jung's typological theory. In reviewing predictive validity, she concluded that this instrument, " . . . has moderate predictive validity in certain areas" (p. 469). In examining the construct validity, she found evidence to support the premise of a four-dimensional interlocking structure of personality for the MBTI. She concluded that the MBTI was reasonably valid and useful in a variety of settings.

Carskadon (1977), in a study of 134 college students, examined the test-retest reliabilities of continuous scores on the MBTI, using an eight week test-retest interval. He concluded that the reliabilities were satisfactory, but that the TF scale appeared relatively unstable in males.

Strickler and Ross (1964) examined the independence of the dichotomous MBTI type categories in a study of 41 male Amherst College students, using a 14 month test-retest interval. They reported satisfactory coefficients for all continuous scores except the TF scale.

Carlson (1985) reviewed studies examining the reliability and validity of split-half and test-retest reliability. He reported that both forms F and G of the instrument revealed generally satisfactory correlations on all four scales. He also observed that, while the MBTI did

not always define Jung's concepts well and the instrument often omitted conceptual steps, it appeared to be reasonably valid.

The Personal Profile System

John G. Geir designed the Personal Profile System as a means to implement W. M. Marston's theory of behavior traits (Geier, 1979). This instrument allows an individual to determine their behavioral responses along four dimensions: Dominance (D), Influencing (I), Steadiness (S), and Cautiousness/Compliance (C) (House, 1982). Individuals with D or I tendencies are defined as process oriented, and individuals with S or C tendencies are defined as product oriented. Scores are plotted on three graphs named: "Graph I: Behavior Expected by Others," "Graph II: Instinctive Response to Pressure," and "Graph III: Self-Perception Summary of Past and Present" (Henkel & Wilmoth, 1988). Three levels of interpretation are available: (1) Identification of primary behavior traits of D, I, S, and C in each of the three graphs, (2) Dimensional Intensity Index, and (3) Classical profile patterns. The Dimensional Intensity Index defines the degree to which an individual exhibits a behavior trait, and the Classical Profile Patterns are the 15 most commonly occurring patterns (Personal Profile System Manual, 1993).

The Personal Profile Manual (1993) provides a reasonable explanation of each of the 15 classical

personality patterns, but provides no information regarding distribution of these patterns within the general population. The Manual also provides examples of how some classical patterns may perform in some situations, but provides no information on distribution of these patterns in occupational fields.

Performax, Inc. presented a discussion of reliability of the PPS in the Personal Profile Manual (1993). The Manual states that the PPS shows good reliability and validity, but provides only vague references to studies performed, and no statistical references. One such study, conducted by Allan Lang in 1992, involved 192 adults who were assessed using both the PPS and the Adult Personality Inventory (API). Results suggest that each PPS scale (D, I, S, C) corresponds with at least four of the twenty-one descriptors on the API. From this information, the Manual concludes that, "The PPS can be used with confidence" (p. 55).

The Manual also cites a study by Rosenbush and Antons (1985), using 110 United States Air Force basic cadets from three different squadrons with a four week test-retest interval. The correlation coefficients for all four scales across all three graphs were moderate to high, with the highest coefficient on Graph I (Public Image). The highest reliability scores on Graph I were D and S; on Graph II, I; and Graph III, I and D. The C factor was reported to be

consistently unstable. The Manual suggests that the C trait is significantly related to higher grade point averages and leadership positions attained.

In another study cited in the Manual, Kostiuk (1981) studied perceptions of work behavioral styles using 45 chief executive officers of financial institutions and corporations. The PPS was measured against the Activity Perception System. Results indicated that predominant work behavioral styles exhibited by this group were D and S, except those officers who earned more than \$150,000/year, who were characterized as I on the PPS.

Performax, Inc. contracted Kaplan Associates in 1982 to examine the construct validity of the PPS. The Kaplan Report (1983) involved 103 adults and correlated the PPS to five other testing instruments: The Wechsler Adult Intelligence Scale (WAIS), the MBTI, The Cattell 16 Personality Factor Questionnaire (16PF), the Minnesota Multiphasic Personality Inventory (MMPI) and the Strong-Campbell Interest Inventory (SCII). Four of the five instruments were self-report instruments and administered to all subjects; the MMPI was administered by a licensed psychological examiner to only 10 of the 103 subjects. Results, published without an accompanying statistical report, indicated a significant correlation with the 16PF, MBTI, WAIS, SCII and MMPI. However, these correlations did not indicate that the PPS could duplicate results or be used

in place of the 16PF, MBTI, WAIS, SCII or MMPI (Henkel, 1988).

A subsequent report, The Winchester Report (Kaplan & Kaplan, 1984), was also provided for Performax, Inc. by Kaplan and Associates. This study compared child and adolescent performance using 184 students from third through twelfth grade in Winchester, Virginia. All subjects were administered the PPS, along with the Youth Development Profile (YDP), the Child's Profile (CP), and the Action Projection System (APS), which are all derivatives of the PPS. Additional criterion tests employed were the Wechsler Adult Intelligence Scale (WAIS) or the Wechsler Intelligence Scale for Children (WISC-R) depending on age, the Science Research Associates Tests (EAT), the House-Tree-Person Technique (HTP), the Children's Personality Questionnaire (CPQ) and the Jr.-Sr. High School Personality Questionnaire (HSPQ) depending on age, and the MBTI. The authors concluded that, "the experimental tests tend to correlate significantly with the criterion tests" (p. 27). They also stated that findings of The Kaplan Report (1983) were substantiated.

House (1982) reviewed the reliability and validity of the PPS and concluded that no evidence of reliability could be found. House questioned the meaning and validity of the measurement and scoring of the instrument and pronounced it, "unsound" (p.12). He also stated that, " . . . evidence

suggests that the PPS should be rated near the lower end of any validity scale. This reviewer has seen no objective evidence of the instrument's reliability" (p. 30).

Henkel and Wilmoth (1992) tested the construct validity of the PPS through factor analysis. In this study, the descriptor data from each of 1,045 PPS profiles obtained from senior noncommissioned Air Force officers was normalized. Results showed that all descriptors loaded on at least one factor at .30 or more, indicating four-factor relevance. The authors concluded that previous Personal Profile System publisher claims could not be completely justified.

Aamodt and Kimbrough (1982) examined the face validity of the PPS in a study using 48 students, half of whom received a copy of their actual PPS profile and half of whom received a counterfeit PPS profile. Results indicated that students who received their actual profile rated them as more accurate than did students who received the counterfeit profile. The authors concluded that PPS possesses at least a moderate degree of face validity.

McGinnis (1989) reviewed the PPS for the Boros Tenth Mental Measurements Yearbook. She commented repeatedly on the lack of statistical specifics provided by the reliability and validity studies cited in the 1993 Personal Profile System Manual. She states that, " . . . such vague and incomplete information regarding the construct or

convergent validities of the Personal Profile is unacceptable" (p. 150).

James Grigsby (1982) completed a study comparing the personality measurements of the PPS and the MBTI. The subjects were 265 students drawn from two community colleges and two universities in central and south Florida. Results indicated that each MBTI type related to a PPS scale over 60% of the time, and that six of the 16 MBTI types related to a PPS scale over 90% of the time. Specifically, D on the PPS tested as E on the MBTI 72.5% of the time and I on the PPS tested as I on the MBTI 89.5% of the time. S on the PPS tested as I on the MBTI 83.3% of the time and C on the PPS tested as I on the MBTI 92.1% of the time. The personality characteristic of S on the PPS was always ISTP on the MBTI, I on the PPS was always ESFP on the MBTI, and I on the PPS was always ENFP on the MBTI.

Grigsby stated that the validity of the PPS and the MBTI were reinforced by the high correlation of similar measurements of the two tests, but that the tests could not be used interchangeably. He concluded that, " . . . a significant relationship exists between the measures of the descriptors produced by the Myers-Briggs Type Indicator and the Personal Profile System" (p. 46), and recommended that future research be conducted with other specific groups.

CHAPTER III

METHODOLOGY

The purpose of this study is to determine if relationships exist among personality types as defined by the Myers Briggs Type Indicator (MBTI) and behavior traits as defined by the Personal Profile System (PPS) for college students enrolled in a leadership training program. It is predicted that strong relationships exist between the two measures when used with this population.

Subjects

The subjects were 35 students accepted by Austin Peay State University to participate in the President's Emerging Leaders Program (PELP), 15 males, 20 females. Only those students who had already completed both the MBTI and the PPS were chosen to participate.

Testing Procedure

The MBTI was sent by Austin Peay's Office of Planning and Institutional Effectiveness via U.S. Mail to each PELP student at the end of their Freshman year. Students were asked to return the test by a specific date. When the tests were received by the Office of Planning and Institutional Effectiveness, they were scored by graduate assistants. The tests were then distributed to each respective student at the Fall Semester PELP "orientation" session held for one afternoon the first Saturday following the start of Fall semester classes. Test results were discussed by the

Associate Vice President for Planning and Institutional Effectiveness and the Vice President for Student Affairs. The PPS was administered, scored, and interpreted during the Fall "orientation" by the Vice President for Student Affairs.

The four basic personality preferences of the MBTI (Extraversion or Introversion, Sensing or Intuition, Thinking or Feeling, and Judgment or Perception) were studied against the four separate behavioral dimensions of the PPS (Dominance, Influencing, Steadiness, and Cautiousness/Compliance).

Instruments

A Myers-Briggs Type Indicator (MBTI) (Form G-Self-Scorable) questionnaire, consisting of 126 forced-choice items and a Personal Profile System (PPS), consisting of 24 forced-choice items, were administered to each subject.

Data Analysis

Characteristics of the Sample Population.

The characteristics of the PELP students were analyzed by inspecting a set of histograms depicting the distribution of scores derived from results of the MBTI and the PPS. For purposes of discussion, all percentages are rounded to the nearest integer value. These data are compared to norm groups established by previous studies.

Correlations Among Internal Test Variables.

Pearson correlation matrices were generated in order to

determine if there was any significant internal correlation among the test variables that had not been previously reported in the literature and may be specific to this population. Seven such matrices were generated, including:

- 1) MBTI variables with MBTI variables (8 x 8 matrix);
- 2) PPS Graph I variables with PPS Graph I variables (4 x 4 matrix);
- 3) PPS Graph I variables with PPS Graph II variables (4 x 4 matrix);
- 4) PPS Graph I variables with PPS Graph III variables (4 x 4 matrix);
- 5) PPS Graph II variables with PPS Graph II variables (4 x 4 matrix);
- 6) PPS Graph II variables with PPS Graph III variables (4 x 4 matrix);
- 7) PPS Graph III variables with PPS Graph III variables (4 x 4 matrix).

Since the relationships among the various combinations of MBTI variables are so well documented in the literature, only the principle variables were correlated with one another. The internal relationships of the variables of the PPS test were not extensively covered in the current literature and therefore a much closer examination was made of the possible combinations of variables.

Correlations were considered to be significant with a probability of less than 0.05. The derived correlations

were compared to those found in previous studies where appropriate and those unique to this sample population or previously not cited in the literature were identified.

Factor Analysis

Factor analysis is a commonly used technique for condensing many variables into a few underlying constructs (Hedderston, 1987). This technique has been widely used to examine the MBTI (Myers & McCaulley, 1985; Sipps & DiCaudo, 1988; Thompson & Borrello, 1986), but there is a paucity of results reported in the literature regarding the PPS. A principle components analysis followed by a varimax rotation, was used to determine if the results of the present tests are consistent with the constructs that have been previously established for the MBTI and to establish some baseline parameters for the PPS. Consideration was given to the factor pattern matrix and percent of the variance explained by each factor. Comparisons were made with previous results reported in the literature.

Correlations Between PPS Scores and MBTI Variables.

In order to determine if any significant correlations exist between the PPS scores and the MBTI, variables for Pearson correlation matrices were generated. The first matrix provides the correlation coefficients among the total PPS scores with each of the MBTI variables. The second matrix provides the correlation coefficients between the PPS scores for Graph I with each of the MBTI variables. The

third matrix gives the correlation coefficients for PPS scores for Graph II and each of the MBTI variables. The fourth correlation matrix shows the correlation coefficients for PPS scores for Graph III and each of the MBTI variables. Each matrix has a 32 x 8 array and is depicted graphically. Correlation coefficients were considered significant with a probability of less than 0.05.

RESULTS

Characteristics of the Sample Population

Examination of Figure 1 indicates that the PELP students, as identified by the MBTI, are primarily extroverts. Most prevalent is the ENFJ type (24%), followed by the ENFP, ESTJ, and ESFJ types (12% each). Of the PELP students identified by the MBTI as introverts, 14% are type INFP. These results are comparable to other studies (Henderson & Nutt, 1978; Mills, Robey, & Smith, 1985; Myers & McCaulley, 1985; Myers with Myers, 1980).

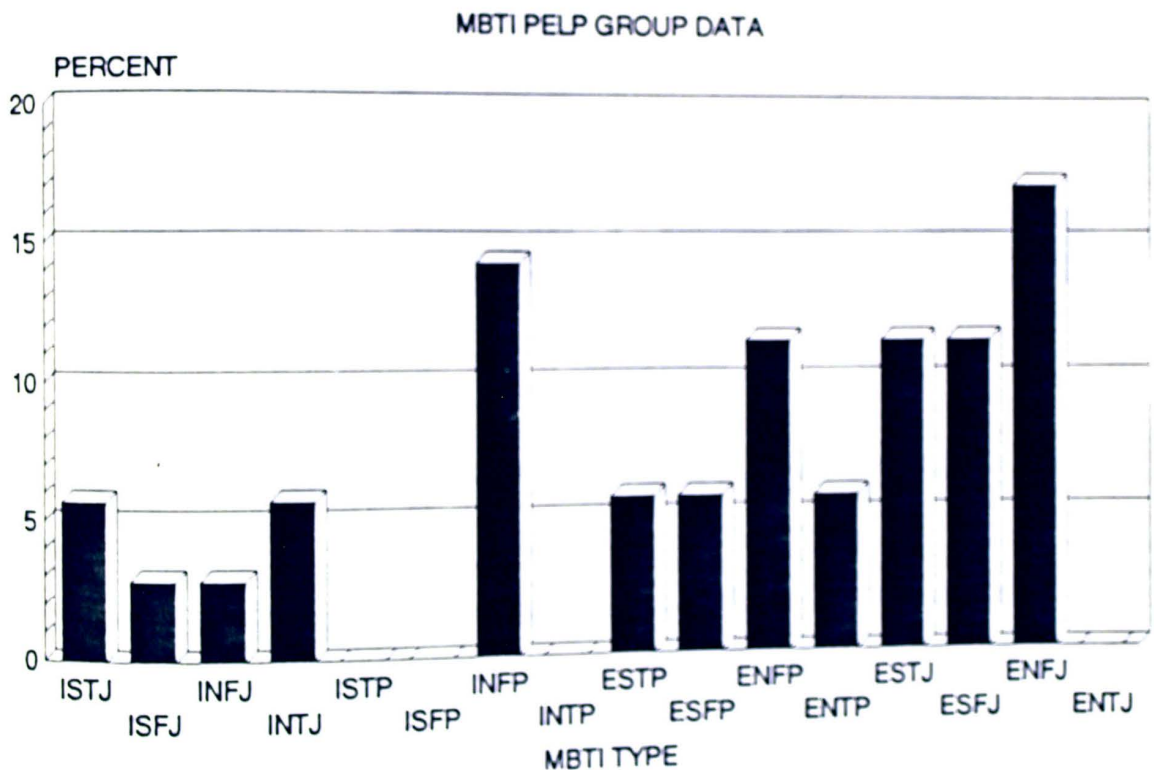


Figure 1. Distribution of PELP students by MBTI type

Inspection of the overall PPS scores depicted in Figure 2 shows that the majority of PELP students are type I personalities (54%), followed by type S (20%), type D (18%), and type C (8%).

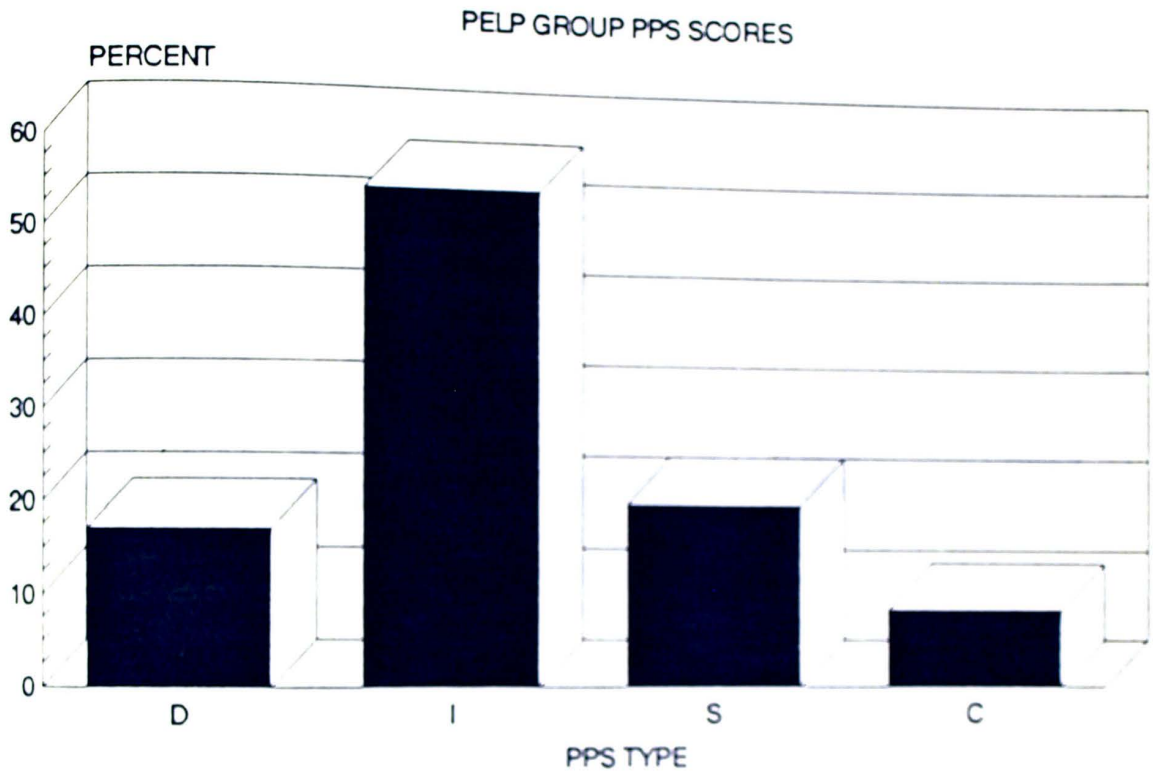


Figure 2. Distribution of PELP students by PPS type.

More specifically, Graph I (Figure 3) of the PPS, Behavior Expected by Others, indicates that the students are primarily type I (42%), followed by type D (18%), S (12%), C (6%), and other less prevalent type combinations.

PELP GROUP PPS SCORES - GRAPH I

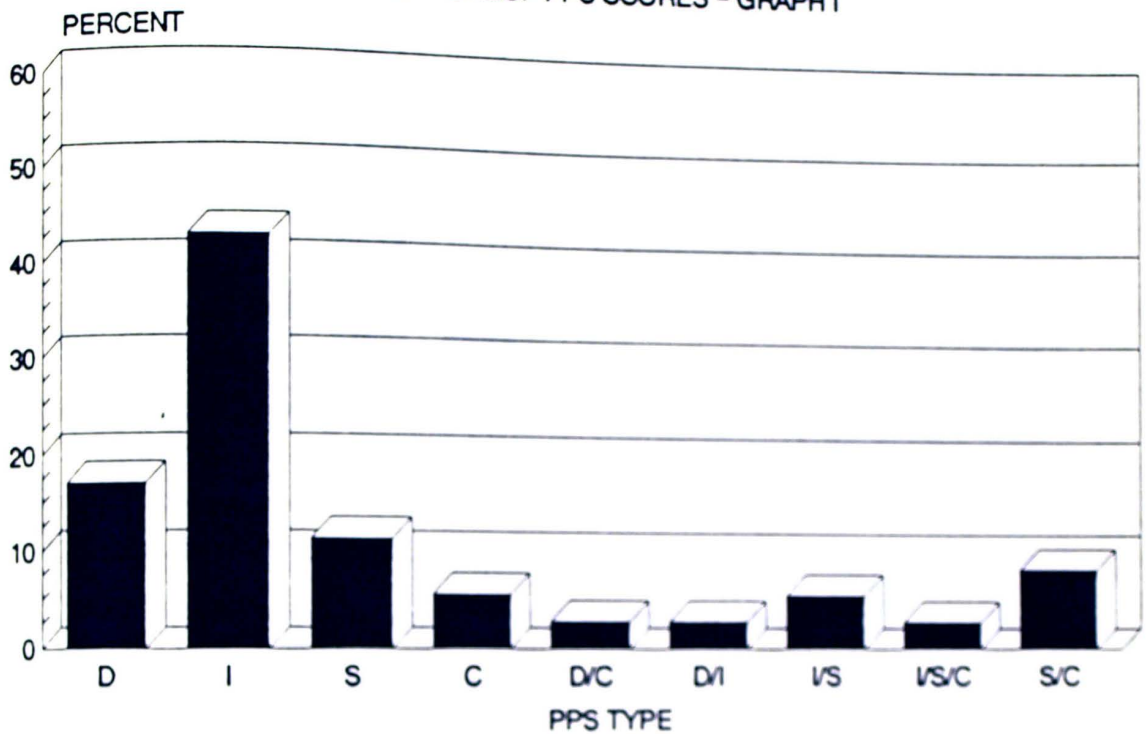


Figure 3. Distribution of PELP students by PPS type:

Graph I: Behavior Expected by Others

Figure 4 depicts the distribution of personality types associated with Graph II of the PPS, Instinctive Response to Pressure; type D (44%) is most prevalent, followed by I (18%), C (12%), D (8%), and other combinations. Figure 5 indicates that, in terms of self-perception, type I (44%) personalities are most prevalent, followed by type S (20%), D (8%), C (2%), and other combinations.

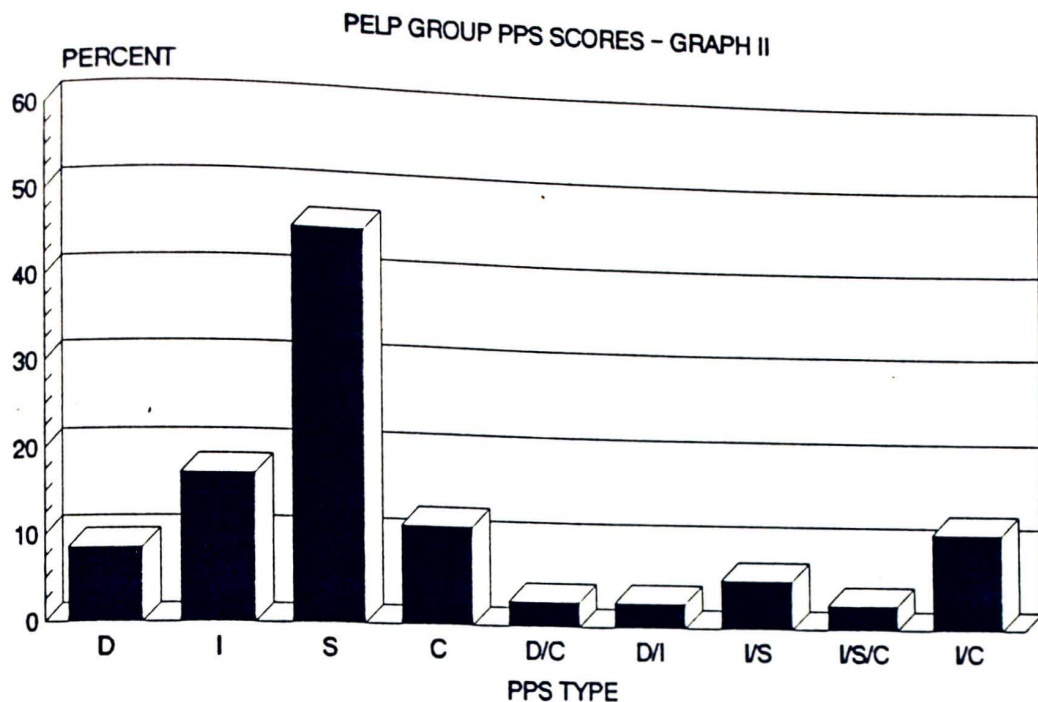


Figure 4. Distribution of PELP students by PPS type:Graph II: Instinctive Response to Pressure Graph III of the PPS measures Self-Perception: Summary of Past and Present.

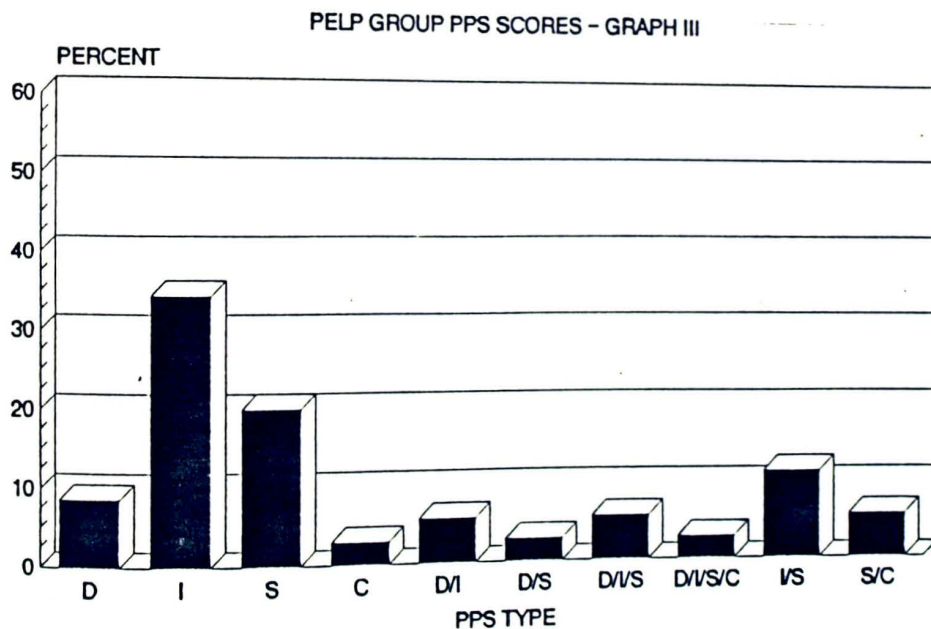


Figure 5. Distribution of PELP students by PPS Type:Graph III: Self-Perception: Summary of Past and Present.

The distribution of the personality types as indicated by the results of the PPS test are comparable to results obtained by Kostuik in 1981.

Correlations Among Internal Test Variables MBTI Variables with MBTI Variables:

The Pearson correlation matrix generated for the MBTI variables (Table I) indicates that there is a highly significant negative correlation between the variables EI, SN, TF, and JP. Since these variables indicate opposite types, such high negative correlations are expected and are consistent with previous studies (Carlyn, 1977; Carskadon, 1977; Strickler & Ross, 1964). However, significant negative correlations between EP and JN were not expected and may be unique to this sample.

Table I. Correlation Matrix of MBTI Variables

---	E	S	T	J	I	N	F	P
E	1.000	-.215	-.109	-.047	-.916	.190	-.094	0.045
S	---	1.000	.214	.435	.275	-.890	-.159	-.439
T	---	---	1.000	-.028	.050	-.202	-.655	.008
J	---	---	---	1.000	.084	-.519	.061	-.968
I	---	---	---	---	1.000	-.176	-.014	-.041
N	---	---	---	---	---	1.000	-.176	-.041
F	---	---	---	---	---	---	1.000	-.041
P	---	---	---	---	---	---	---	1.000

PPS Graph I Variables with PPS Graph I Variables:

The Pearson correlation matrix generated for PPS Graph I variables with PPS Graph I variables (Table II) shows two significant but weak negative correlations. These were for DS and IC combinations. These relationships have not been previously identified in the literature and are not considered significant for the present study.

Table II. Correlation Matrix of Variables PPS Graph I with PPS Graph I

---	D	I	S	C
D	1.000	-.226	-.475	-.282
I	---	1.000	-.021	-.471
S	---	---	1.000	.014
C	---	---	---	1.000

PPS Graph I Variables with PPS Graph II Variables:

The Pearson correlation matrix generated for PPS Graph I variables and PPS Graph II variables (Table III) indicates three significant relationships.

Table III. Correlation Matrix of Variables PPS Graph I with PPS Graph II

---	D	I	S	C
D	0.683	-0.244	-0.589	-0.121
I	-0.086	0.257	0.289	-0.261
S	-0.45	-0.066	0.455	0.258
C	-0.621	0.112	0.313	0.225

Two positive relationships are found in DD and SS and are not unexpected (Henkel & Wilmoth, 1992, Personal Profile System Manual, 1993). However, an unexpected, weak negative relationship was revealed for the DS combination that has not been previously indentified in the literature. It may also be unique to this population.

PPS Graph I Variables with PPS Graph III Variables:

The Pearson correlation matrix generated for Graph I variables with Graph III variables (Table IV) shows three strong positive and three strong negative correlations. The positive correlations for the DD, II, and SS combinations is expected and has been previously identified in the literature (Henkel & Wilmoth, 1992; Personal Profile System Manual, 1993). However, the relatively strong negative correlations between DS, IC, SD, and CD have not been previously identified in the literature and may be unique to this sample.

Table IV. Correlation Matrix of Variables PPS Graph I with PPS Graph III

---	D	I	S	C
D	.857	-.241	-.647	-.231
I	-.216	.831	.008	-.443
S	-.546	-.052	.809	.181
C	-.588	-.251	.324	.225

PPS Graph II Variables with PPS Graph II Variables:

The Pearson correlation matrix generated for Graph II variables with Graph II variables (Table V) shows two strong negative correlations, DS and DC. These relationships have been previously identified in the literature (Henkel & Wilmoth, 1992; Personal Profile System Manual, 1993).

Table V. Correlation Matrix of Variables PPS Graph II with PPS Graph II

---	D	I	S	C
D	1.000	-.248	-.532	-.658
I	---	1.000	-.043	-.134
S	---	----	1.000	.242
C	---	---	---	1.000

PPS Graph II Variables with PPS Graph III Variables:

The Pearson correlation matrix generated for Graph II variables with Graph III variables (Table VI) shows six strong positive and four strong negative correlations.

Table VI. Correlation Matrix of Variables PPS Graph II with PPS Graph III

---	D	I	S	C
D	.858	-.230	-.591	-.688
I	-.248	.657	-.122	-.011
S	-.655	.081	.778	.440
C	-.565	-.345	.404	.797

The positive relationships among DD, II, SS, and CC combinations were expected and have been previously identified (Henkel & Wilmoth, 1992; Personal Profile System Manual, 1993). The positive relationships for the SC and CS combinations have not been previously identified. The negative relationships for the SD and CD combinations have not been previously identified and may be unique to this sample.

PPS Graph III Variables with PPS Graph III Variables:

The Pearson correlation matrix generated for PPS Graph III variables with PPS Graph III variables (Table VII) shows two strong negative correlations. These are for the DS and DC combinations, and have been previously identified in the literature (Personal Profile System Manual, 1993).

Table VII. Correlation Matrix of Variables PPS Graph III
with PPS Graph III

---	D	I	S	C
D	1.000	-.262	-.739	-.549
I	---	1.000	-.100	-.387
S	---	---	1.000	.484
C	---	---	---	1.000

Factor Analysis

MBTI.

The factor pattern matrix for the MBTI (Table VIII) provides the regression coefficients for each factor produced.

Table VIII. Varimax Factor Pattern Matrix for MBTI

Variable	Factor 1	Factor 2	Factor 3
E	.060	-.970	-.019
S	-.753	.264	-.305
T	-.069	.066	-.888
J	-.892	.053	.153
I	-.079	.964	-.012
N	.831	-.190	.198
F	-.038	.075	.888
P	.906	-.072	-.158

Factor 1: Perceiving, Judging, Intuition

Factor 2: Extravert, Introvert

Factor 3: Thinking, Feeling

These coefficients can be used to identify general characteristics of each of the factors. The MBTI factor analysis produced three significant factors. Factor 1 generalizes the JP and N variables into a common term and accounts for 38.2% of the variance explained by the model (Table IX). Factor 2 generalizes the EI variables into a common term and accounts for 23.5% of the variance explained by the model (Table IX). Factor 3 generalizes the T-F variables into a common term and accounts for 21.3% of the variance explained by the model (Table IX). In factoring these scores, three factors with an eigenvalue greater than 1 were isolated, accounting for approximately 80% of the variance. These findings are consistent with previous research (Myers & McCaulley, 1985; Sipps & DiCaudo, 1988; Thompson & Borrello, 1986).

Table IX. Percent of Variance Explained by Each Factor for Factor Analysis of MBTI Data

Factor	Percent of Variance Explained
Factor 1	38.2
Factor 2	23.5
Factor 3	21.3

PPS.

The factor pattern matrix for the PPS (Table X) provides the regression coefficients for each factor

produced. These coefficients can be used to identify general characteristics of each of the factors.

Table X. Varimax Factor Pattern Matrix for PPS

Variable	Factor 1	Factor 2	Factor 3
Graph I - D	.837	-.067	-.244
Graph I - I	-.144	.803	.371
Graph I - S	-.719	.070	-.502
Graph I - C	-.274	-.665	.121
Graph II - D	.891	-.162	-.070
Graph II - I	-.144	.702	-.344
Graph II - S	-.676	-.189	-.382
Graph II - C	-.729	-.158	.516
Graph III - D	.954	-.140	-.050
Graph III - I	-.117	.940	.184
Graph III - S	-.837	-.115	-.430
Graph III - C	-.687	-.561	.335

Factor 1: Dominance and Self Perception/Steadiness

Factor 2: Influencing

Factor 3: Behavior Expected by Others/Steadiness and
instinctive Response to
Pessure/Cautiousness/Compliance

The PPS factor analysis produced three significant factors with eignenvales greater than 1, which accounted for approximately 85% of the variance (Table XI).

Table XI: Percent of Variance Explained by Each Factor for Factor Analysis of PSS Data

Factor	Percent of Variance Explained
Factor 1	43.5
Factor 2	24.2
Factor 3	11.1

Factor 1 generalizes Graph I - D, Graph II - D, Graph III - D, and Graph III - S variables into a common term, representing dominance on all 3 of the first graphs and steadiness on the final graph, and accounts for 43.5% of the variance explained by the model (Table XI). Factor 2 generalizes Graph I - I, Graph II - I, and Graph III - I variables into a common term, representing influencing for each graph, and accounts for 24.2% of the variance explained by the model (Table XI). Factor 3 generalizes Graph I - S, Graph II - C, and Graph III - S variables into a common term representing steadiness, compliance and steadiness respectively and accounts for 11.1% of the variance explained by the model (Table XI). These findings are in keeping with the only previous research to date using factor analysis with this instrument (Henkel & Wilmoth, 1992).

Correlations Between PPS Scores and MBTI Variables

The Pearson correlation coefficients generated for PPS test scores and MBTI variables are depicted in Figures 6 through 9. Figure 6 provides information regarding the

correlations between total PPS test scores and MBTI variables. Total scores for D of the PPS and the MBTI variables show two pairs of significant correlations. These are between PPS-D and MBTI SN, TF, and JP combinations. The correlations are positive with T, N, and P and negative with S, F, and J. For PPS-I, no significant relationships exist with any set of variables, but there is a weak positive relationship with MBTI variable T. PPS-S correlates significantly with MBTI combinations TF and JP. The correlations are positive for F and J and negative F and P. For PPS-C there is a significant correlation with the MBTI JP combination. There is a positive correlation with J and a negative correlation with P. These findings are somewhat in keeping with results reported by Kaplan and Kaplan (1983). Except for the PPS-C with the MBTI JP combination correlations, all significant r values are below 0.50.

The correlation coefficients found between PPS Graph I scores and the MBTI variables are presented in Figure 7. PPS-D has significant correlations with the MBTI pairs SN and JP. Positive correlations are found with N and P and negative correlations with S and J. For PPS-I, there exists only a weak correlation with MBTI T. PPS-S has significant correlations with the MBTI pairs TF and JP. Positive correlations are found with J and F, while negative correlations occur with T and P. PPS-C has significant

correlations with the MBTI SN and JP pairs. Positive correlations occur with S and J and negative correlations with N and P. For all combinations occurring between the variables of PPS Graph I and the MBTI variables, there is only one correlation coefficient above 0.50; this is for the PPS-D with MBTI N. These results are similar to those obtained by Kaplan and Kaplan (1984).

The correlation coefficients for PPS Graph II scores and the MBTI variables are depicted graphically in Figure 8. PPS-D has significant correlations with the MBTI pairs TF and JP. Positive correlations are found with T and P and negative correlations with F and J. For PPS-I, no significant correlation exists with MBTI pairs and there is only a weak correlation with MBTI T. PPS-S has no significant correlations with any pairs of MBTI variables, but there is a weak negative correlation with MBTI F. For PPS-C, there is a significant correlation with the MBTI pair JP. The correlations are in the positive direction for J and in the negative direction for P. None of the correlation coefficients between the scores of PPS Graph II and the MBTI variables are above 0.50. These results are similar to those obtained by Kaplan and Kaplan (1984).

The correlation coefficients for PPS Graph III scores and the MBTI variables are depicted graphically in Figure 9. PPS-D has significant correlations with the MBTI pairs SN, TF, and JP. The correlations are positive with N, T, and P

and negative with S, F, and J. For PPS-I, no significant correlations occur with MBTI pairs; however, there is a weak negative correlation with T. For PPS-S, there are significant correlations with the MBTI pairs TF and JP. The correlations are in the positive direction for F and J and in the negative direction for T and P. PPS-C scores have a significant correlation with the MBTI pair JP. The relationship is positive with J and negative with P. There is also a negative correlation with MBTI N. The only correlation coefficient above 0.50 found for the PPS scores of Graph III and the MBTI variables is between PPS-C and MBTI P. These findings differ from those of Kaplan and Kaplan (1984).

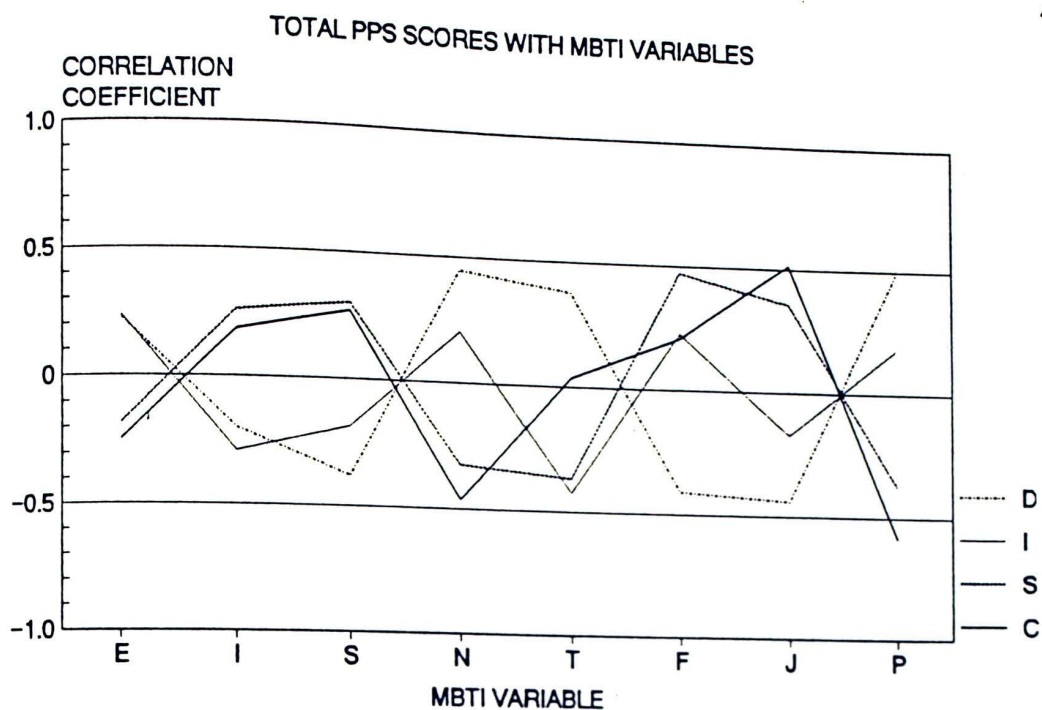


Figure 6: Correlations Between Total PPS Test Scores and MBTI Variables.

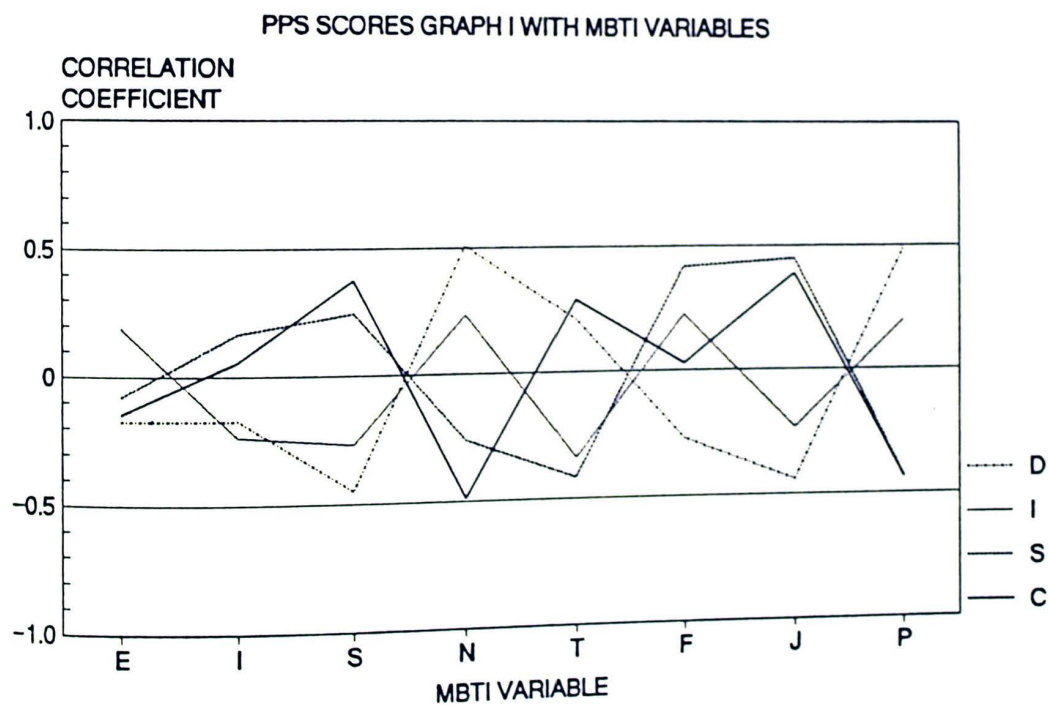


Figure 7: Correlations Between PPS Graph I: Behavior Expected by Others and MBTI Variables.

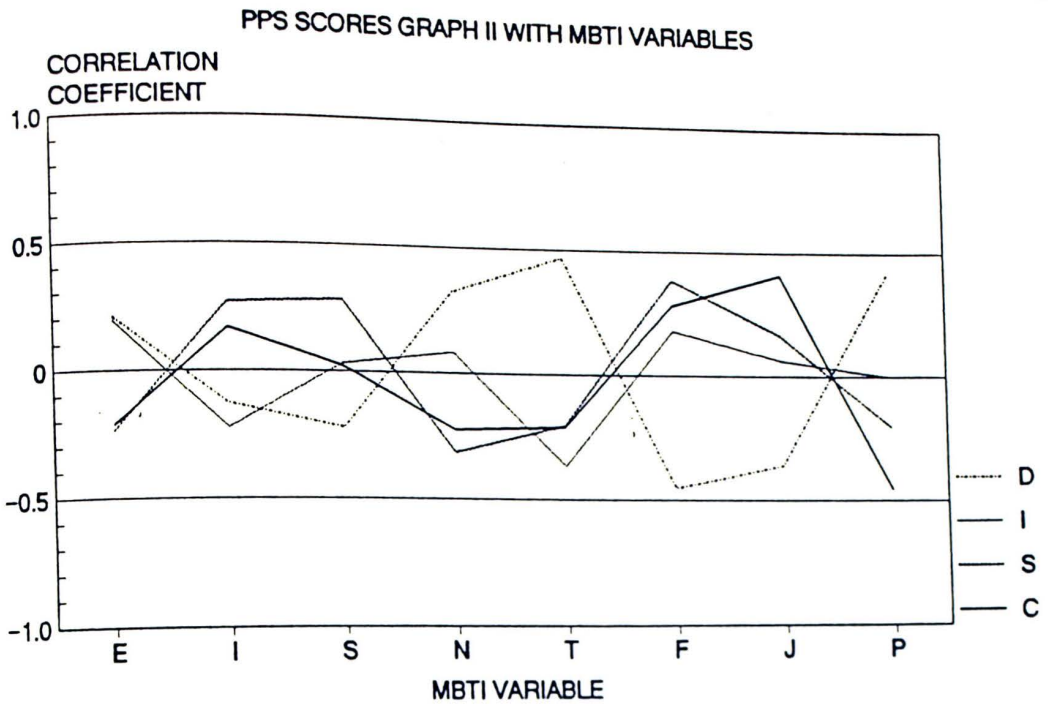


Figure 8: Correlations Between PPS Graph II: Instinctive Response to Pressure, and MBTI Variables.

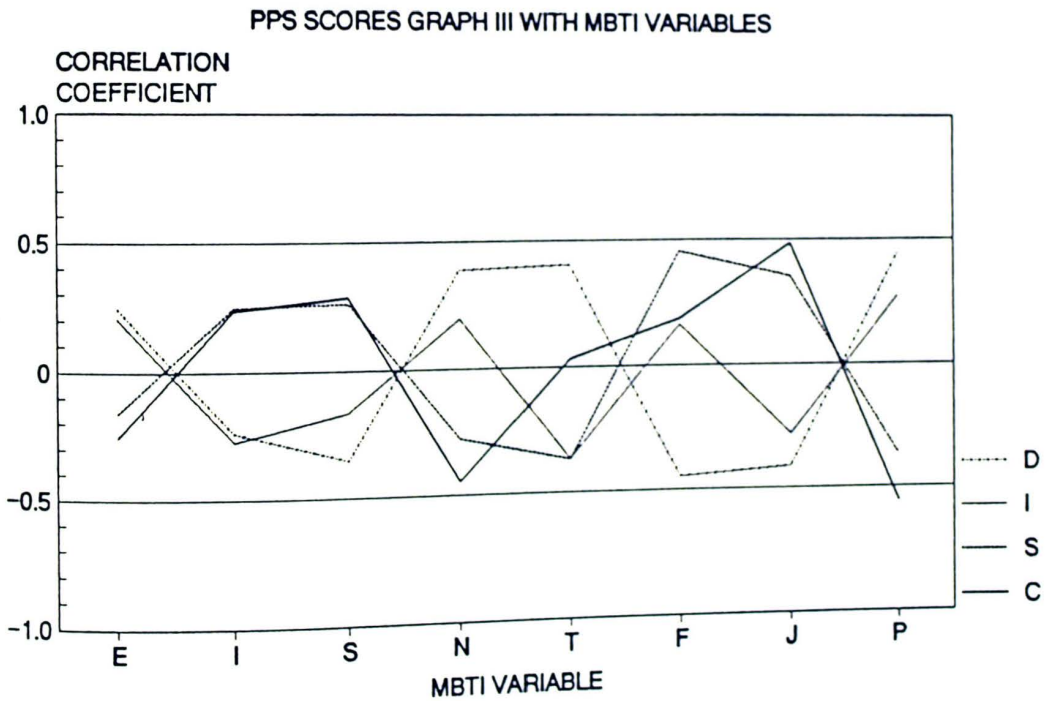


Figure 9: Correlations Between PPS Graph III: Self-Perception, Summary of Past and Present, and MBTI Variables.

CHAPTER V

SUMMARY AND DISCUSSION

Summary

The purpose of this study was to determine if relationships exist among personality traits as defined by the MBTI and behavior traits as defined by the PPS for college students enrolled in a college leadership training program. It was predicted that strong relationships exist between the two instruments when used with this population.

Seven Pearson correlation matrices were generated and interpreted. The correlations derived were compared to those found in previous studies and those correlations unique to this population were identified.

A principle components analysis followed by a varimax rotation was also employed to determine if relationships exist between the two instruments, with consideration given to the factor pattern matrix and percent of variance explained by each factor. Comparisons were made to previous studies and results unique to this population were identified.

Results suggest that a statistically significant relationship exists between the descriptors defined by both instruments. This finding supports previous studies concerning the PPS and MBTI (Grigsby, 1982, Kaplan & Kaplan, 1983; Kaplan & Kaplan, 1984).

discussion

The sample size in this study is too small to be considered adequate for purposes of reliability and this study has been undertaken for heuristic purposes only. However, conclusions can be drawn and implications for future study can be discussed.

The majority of the relationships defined between the PPS and the MBTI descriptors are what would be expected given the types, scales, and dimensions of the instruments employed by the test developers. MBTI type categories that are similar to PPS trait categories correlate strongly with one another. However, the PPS trait of Influencing did not correlate with any MBTI type category. Significant correlation coefficients ranged from r values of .35 to .50, which are low.

The only other study producing statistical reports (Grigsby, 1982) employed the non-parametric Chi-square statistic. The current study employed the parametric Pearson correlation which is a more robust test. Therefore, comparisons in this study appear to be less significant than results obtained by Grigsby due to the nature of the statistical analyses performed. Use of the Pearson correlation also allows the direction of the relationship between descriptors to be identified.

Future research involving the PPS and MBTI should be conducted with larger samples involving similar groups or

different occupational groups. Since the PSS Influencing trait did not correlate with any MBTI type category, future research involving leadership groups comprised of larger samples should be undertaken to determine if the PSS Influencing trait may correlate with some MBTI type category or if it is an independent factor, as implicated by this study.

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APPENDIXES



Office of Student Affairs
P.O. Box 4598
Clarksville, Tennessee 37044
Phone: (615) 648-7341
Fax: (615) 648-6304

April 20, 1995

Dear Student:

I am pleased to inform you that, as a member of the President's Emerging Leaders Group, you have been selected to take part in a study being conducted by Betty McCluskey. Ms. McCluskey is a graduate student at Austin Peay who is completing her master's thesis in psychology. As the basis of her thesis work, she would like to record your Myers-Briggs Type Indicator (MBTI) score and your Personal Profile System (PPS) score, both of which are already in your PELP file, to determine how the two tests are related. You will not be identified in any way in her research or final paper.

Please assist Ms. McCluskey in her work by completing the attached Informed Consent Statement and returning it in the enclosed envelope before May 5, 1995. Should you have any questions or concerns regarding this study, please contact Ms. McCluskey at 615-647-8124.

Thank you for your cooperation in this important work.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Philip G. Weast', written over a light-colored, possibly lined, background.

Philip G. Weast, Director
President's Emerging Leaders Program and
Vice President for Student Affairs

Appendix B

INFORMED CONSENT STATEMENT

The purpose of this investigation is to determine whether a relationship exists between the Myers-Brigg Type Indicator (MBTI) and the Personal Profile System (PPS).

Your responses to these tests will be kept confidential. At no time will you be identified nor will anyone other than the investigators have access to your scores. The information collected will be used only for purposes of analysis. Your participation is completely voluntary, and you are free to terminate your participation at any time without penalty.

Thank you for your time and cooperation.

I agree to participate in the present study being conducted under the supervision of Dr. Garland Blair of the Department of Psychology at Austin Peay State University. I have been informed, either orally or in writing or both, about the procedures to be followed and about any discomforts or risks which may be involved. The investigator has offered to answer any further inquiries that I may have regarding the procedures. I understand that I am free to terminate my participation at any time without penalty or prejudice and to have all data obtained from me withdrawn from the study and destroyed. I have also been told of any benefits that may result from my participation.

Name (please print)

Signature

Date

Appendix C

AUSTIN PEAY STATE UNIVERSITY

CHECKLIST FOR RESEARCH INVOLVING HUMAN SUBJECTS

TITLE: A Qualitative Study of Personality Profiles of People in a College Leadership Training Program

FUNDING SOURCE: Not Applicable

PRINCIPAL INVESTIGATOR: Elizabeth J. Kahn/McCluskey
DEPT.: Psychology

SPONSOR (if student research): Dr. Garland Blair

1. Give a brief description or outline of your research procedures as they relate to the use of human subjects. This should include a description of the subjects themselves, instructions given to them, activities in which they engage, special incentives, and tests and questionnaires. If new or non-standard tests or questionnaires are used, copies should be attached to this form. Make notation if the subjects are minors or "vulnerable" (i.e. children, prisoners, mentally or physically infirm, etc.).

Subjects are 35 students accepted by APSU to participate in the President's Emerging Leaders Program, 15 males, 20 females. Students who have completed the Myers-Briggs Type Indicator and the Personal Profile System are the only participants. Personality types as identified by the MBTI and the PPS will be recorded for each subject.

2. Does this research entail possible risk to psychological, legal, physical, or social harm to the subjects? Please explain. What steps have been taken to minimize these risks? What provisions have been made to insure that appropriate facilities and professional attention necessary for the health and safety of the subjects are available and will be utilized?

Subjects will sign an Informed Consent Statement permitting use of their scores. Subjects will not be identified in any way in the research.

3. The potential benefits of this activity to the subjects and to mankind in general outweigh any possible risks. This opinion is justified by the following reasons:

A relationship between the MBTI and PPS will be studied in this research, contributing to the body to knowledge surrounding personality assessment.

4. Will legally effective, informed consent be obtained from all subjects or their legally authorized representative? **Yes**
5. Will the confidentiality/anonymity of all subjects be maintained? How is this accomplished? (If not, has a formal release been obtained? Attach.) (a) If data will be stored by electronic media, what steps will be taken to assure confidentiality/anonymity? (b) If data will be stored by non-electronic media, what steps will be taken to assure confidentiality/anonymity?

Confidentiality will be maintained by identifying subjects only by a randomly assigned numeric code. Data will be stored by electronic media on a personal computer at the researcher's home. Files will be protected by a password.

6. Do the data to be collected relate to illegal activities? If yes, explain. **No**
7. Are all subjects protected from the future potentially harmful use of the data collected in this investigation? How is this accomplished? **Yes.**
Subjects will be identified only by numeric code.

I have read the Austin Peay State University Policies and Procedures on Human Research and agree to abide by them. I also agree to report to the Human Research Review Committee any significant and relevant changes in procedures and instruments as they relate to subjects.

Elizabeth D. Kuhl/ McCluskey
Student Signature

4/15/95
Date

Student Research directed by faculty should be co-signed by faculty supervisor.

Sarland E. Blair
Faculty Signature