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Leavenworth, Paul Gerald

**DIFFERENCES IN THE PSYCHOLOGICAL TYPES OF STUDENT LEADERS
AND NON-LEADERS AT A PRIVATE LIBERAL ARTS COLLEGE**

The College of William and Mary in Virginia

Ed.D. 1984

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STUDENT LEADERS AND NON-LEADERS
AT A PRIVATE LIBERAL ARTS COLLEGE

A Dissertation Presented to the
Faculty of the School of Education
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

by
Paul G. Leavenworth

May 1984

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ACKNOWLEDGMENTS

I would like to thank Dr. O. W. Lacy, Director of the College Health Services at Franklin and Marshall College, for allowing me to have research access to the College's Myers-Briggs Type Indicator (MBTI) data and for his advise, assistance, and encouragement throughout this project.

I would like to thank Ms. Karen Busler, Ms. Debra Luchanin, and Mr. Jack Roberts for their assistance in this study.

I would like to thank my committee chairman and advisor, Dr. Charles O. Matthews, and my committee members, Dr. Fred L. Adair and Dr. Kevin E. Geoffroy, for their guidance and assistance in this research project.

Most of all, I would like to thank my family members, my wife, Leslie A. Leavenworth, our daughter, Sarah Jean Leavenworth, my parents, Jack and Gloria Leavenworth, and my wife's parents, Ed and Jean Alexander. Their support, encouragement, and patience was invaluable.

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Chapter 1

Introduction

Need for the Study

Educators and counselors in higher education have long recognized the importance of leadership involvement in the growth and development of students. The importance of leadership in the education of students is well documented in the literature of the impact of college on students. Williamson (1952) emphasized the importance of extracurricular activities in the growth and development of college students. He wrote that the purpose of the extracurriculum is to "contribute to personal development of student participants. The developing personality, intellect as well as behavior, is the basic object to be achieved through the extracurriculum." (p. 230) More recently, Astin (1977) has suggested that extracurricular activities may be the foundation on which adult achievements are built. He stated that "in certain respects, these activities offer an opportunity to develop skills that are more relevant to later life than the knowledge and cognitive skills acquired in the classroom." (p. 115)

The benefits of involvement in out of classroom activities are many. Delworth, Sherwood, and Casaburri (1974) suggested several ways in which students benefit from leadership involvement. These benefits include a feeling of satisfaction;

increased feelings of self-worth; increased competence in specific skill areas; increased interest and participation in academics; increased contact with key persons in the college community; work experience; and skills and references that may prove helpful in career placement or graduate school admission.

The importance of leadership involvement for student growth and development is well established in the literature. Very little, though, is known about the characteristics of student leaders or the dynamics of growth and development that occurs from leadership involvement. Bowen (1977) wrote that:

Most of the leaders of our society in virtually all walks of life are college-educated, and it may be presumed that the cognitive and affective traits developed or strengthened in college would be useful to them; yet it is apparently not known whether higher education helps people to combine these traits in ways that produce the quality we call leadership. It may be safely asserted that higher education does provide abundant opportunities and incentives for students to develop their leadership potential, but the information to back this assertion is lacking. (p. 142-143)

This lack of information about whether higher education helps students to combine their cognitive and affective traits in "ways that produce the quality we call leadership" is of significant importance to counselors and educators who work with students.

Information about the characteristics of student leaders and the dynamics of leadership growth is important if counselors and educators are to help students reach their potential as student and leader. Brainard and Dollar (1971) wrote of the importance of understanding the characteristics of student leaders in maximizing their growth and development in college. They wrote that:

There is a tendency in student leadership-development programs and in advisory programs for student leaders and their groups to treat student leaders as if they were all alike. Awareness of the nature of diversities among student leaders should facilitate the selection of compatible advisors for them and their groups, and should assist in providing more appropriate student leadership-development activities in our colleges. (p. 202)

The need for understanding the characteristics, similarities and differences of student leaders is basic to sound program development; but little is known about them at this time.

Research needs to be conducted that will provide information about the characteristics of student leaders. This information may lead to better advising, better programming, and better communication and cooperation on the part of counselors, educators, and students.

Purpose of the Study

The need for research concerning the characteristics of student leaders has been established. The purpose of this study is to address this need. Specifically, the purpose of this study is to describe the psychological

types of student leaders at a private liberal arts college. The Myers-Briggs Type Indicator (MBTI) will be used to measure Jungian psychological types in the non-leader population, the leader population, and the leader subgroup populations. The leader population is comprised of six leader subgroups:

1. Intercollegiate Varsity Athletes
2. Communications Leaders
3. Fraternity and Sorority Leaders
4. Academic and Senior Honor Students
5. Resident Assistants
6. Student Government Leaders

Psychological type characteristics for the non-leader population and the leader populations will be described and compared to determine similarities and differences. Consequently, a number of questions will need to be investigated.

1. Are there differences between the non-leader population and the leader population with regard to psychological type?

2. Are there differences between the leader population and the leader subgroup populations with regard to psychological type?

3. Are there differences between male and female leaders with regard to psychological type?

Theoretical Rationale

C.G. Jung (1933, 1971) believed that there are individual and "typical" differences in human personalities. Typical differences or "psychological types" represent specific personality characteristics that describe one kind of person

as compared to another kind of person. (1971, p. 482)

Jung (1971) states:

In my practical medical work with nervous patients I have long been struck by the fact that besides the many individual differences in human psychology there are also typical differences. Two types especially become clear to me; I have termed them the introverted and the extraverted types. (p. 3)

Jung described introversion as an inward turning of libido and extraversion as an outward turning of libido.

Jung (1971) describes these two types as "attitude-functions" because they represent the direction of a person's psychic awareness in the conscious world. Introversion is energized by psychic movement from object to subject while extraversion is energized by psychic movement from the subject to the object. He believed that a person possesses both attitude functions but that a person has a predisposition to prefer one function to the other. He (1971) states that "everyone possesses both mechanisms, extraversion as well as introversion, and only the relative predominance of one over the other determines type." (p. 4) The process of developing a preference for one type over the other is called "differentiation." For Jung, one's differentiated attitude-function affects one's whole psychic process. He (1933) states that:

What struck me now was the undeniable fact that while people may be classed introverts or extraverts, these distinctions do not cover all the dissimilarities between the individuals in

either class. So great, indeed, are these differences that I was forced to doubt whether I had observed correctly in the first place. (p. 87)

In an attempt to address this problem of dissimilarities within the attitude-types, he (1971) theorized that there were also four "function-types": thinking, feeling, sensation, and intuition. The function-types represent the manifestation of libido in one's perception and judgment. Jung believed that one of the function-types combines with one of the attitude-types to form a person's psychological type.

Jung (1971) theorized that there were eight psychological types. Each type is characterized by a predominance of one of the two attitude-types and a predominance of one of the four function-types. These eight psychological types are divided into four "rational types" (thinking or feeling) and four "irrational types" (sensation or intuition). The rational types "function most perfectly when they are in the fullest possible accord with the laws of reason." (1971, p. 459) The irrational types are "forced to dispense with the rational (which presupposes the exclusion of everything that is outside of reason) in order to attain the most complete perception of the general flux of events." (1971, p. 459) The eight psychological types include: the Extraverted Thinking Type, the Extraverted Feeling Type, the Introverted Thinking Type, the Introverted Feeling Type (rational types), the Extraverted Sensation Type,

the Extraverted Intuition Type, the Introverted Sensation Type, the Introverted Intuition Type (irrational types).

Jung (1971) also suggests that each psychological type possesses a less differentiated function-type that is "present in consciousness and exerts a co-determining influence." (p. 405) He called this function the "auxiliary function." He (1971) suggests that:

Experience shows that the secondary (auxiliary) function is always one whose nature is different from, though not antagonistic to, the primary function. Thus, thinking as the primary function can readily pair with intuition or sensation, but, as already observed, never with feeling. (p. 406)

If the primary function is a rational type then the auxiliary is one of the irrational types, and vice versa if the primary function is an irrational function.

The importance of the auxiliary function has been described by Isabel Briggs Myers (1962, 1980). She believed that Jung's type theory failed to realize the importance of the auxiliary function for balanced type development. She (1980) states that:

Nowhere in Jung's book (Psychological Types) does he describe these normal, balanced types with an auxiliary process at their disposal. He portrays each process in sharpest focus and with maximum contrast between the extraverted and introverted forms; consequently, he describes the rare, theoretical "pure" types, who have little or no development of the auxiliary. (p. 17)



Briggs Myers believed that Jung's theory was limited in its ability to distinguish combinations of function-types and in its ability to describe the individual introverted types. She believed that the introverted types depend on their auxiliary process for their extraverted personalities.

Briggs Myers expanded Jung's theory to include the auxiliary process. Consequently, her theory includes sixteen psychological types as compared to Jung's eight. She (1962) developed an indicator which describes psychological type using four bipolar scales. These scales include a scale for introversion and extraversion (I-E), a scale for intuition and sensing (N-S), a scale for thinking and feeling (T-F), and a scale for judging and perception (J-P).

Briggs Myers (1962) developed the Myers-Briggs Type Indicator (MBTI) to measure psychological type. The MBTI measures a person's preference for one of the two polar processes on each of the four scales. The combination of preferences on the four scales determines one's type. The sixteen types include Introverted Sensing Types with thinking as auxiliary (ISTJ), Introverted Sensing Types with feeling as auxiliary (ISFJ), Introverted Intuition Types with feeling as auxiliary (INFJ), Introverted Intuition Types with thinking as auxiliary (INTJ), Introverted Thinking Types with sensing as auxiliary (ISTP), Introverted Thinking Types with intuition as auxiliary (INTP), Introverted Feeling Types with sensing as auxiliary (ISFP), Introverted Feeling

Types with intuition as auxiliary (INFP), Extraverted Sensing
 Types with thinking as auxiliary (ESTP), Extraverted Sensing
 Types with feeling as auxiliary (ESFP), Extraverted Intuition
 Types with feeling as auxiliary (ENFP), Extraverted Intuition
 Types with thinking as auxiliary (ENTP), Extraverted Thinking
 Types with sensing as auxiliary (ESTJ), Extraverted Thinking
 Types with intuition as auxiliary (ENTJ), Extraverted Feeling
 Types with sensing as auxiliary (ESFJ), and Extraverted
 Feeling Types with intuition as auxiliary (ENFJ).

The J-P scale is designed to measure the dominant and auxiliary processes. The dominant and auxiliary processes are similar to Jung's primary and auxiliary functions. For the MBTI, if the J-P scale identifies the dominant process as a judging process (J for extraverts and P for introverts), then the auxiliary process is the preferred perceiving process. The opposite is true if the dominant process is a perceiving process. Introverts and extraverts are opposite on the J-P scale because the auxiliary process serves as the extraversion in the introvert's personality.

Jungian typology and the MBTI provide a simple and easy way to understand personality theory which explains differences and similarities in personality. The MBTI is suitable for this study because it is a valid descriptive instrument that measures Jungian psychological type.

Definition of Terms

Several terms and concepts need to be defined as they will be used throughout the study. It is important that these terms and concepts are understood at this time so that there will be no confusion about their meanings throughout the study. For the purpose of this study, the following definitions will be used.

Non-Leader Population

This term refers to the total student population who participated in the study and are not members of one of the six leader subgroups which compose the leader population.

Leader Population (LP)

This term refers to the students who were elected or selected to one or more of the six leader subgroups: intercollegiate varsity athletics; communications leaders; fraternity and sorority leaders; academic and senior honor students; resident assistants; and student government leaders.

Leader Subgroup Populations

This term refers to the students who are members of one of the six leader subgroups. Students who are members of more than one leader subgroup are included in each group of which they are a member.

Intercollegiate Varsity Athletes (A)

This term refers to the males and females who were selected for one or more of the intercollegiate varsity teams that are recognized by the College. Male teams include baseball, basketball, cross country, football, golf, lacrosse,

soccer, squash, swimming, tennis, track, and wrestling. Female teams include basketball, cross country, field hockey, lacrosse, softball, squash, swimming, tennis, track, and volleyball.

Communications Leaders (C)

This term refers to the students who were selected as leaders of College newspaper, The Reporter; the College radio station, WFNM; and the College yearbook, The Oriflamme.

Fraternity and Sorority Leaders (G)

This term refers to the elected leadership of the eleven national fraternities and the two national sororities recognized by the College.

Academic and Senior Honor Students (H)

This term refers to the students who were selected or elected to Phi Beta Kappa, Magna Cum Laude, Cum Laude, Departmental honors, or Senior honors.

Resident Assistants (R)

This term refers to the students who were selected by the Dean of Student Affairs Office to act as paid peer advisers in the College's residence halls.

Student Government Leaders (S)

This term refers to the students who were selected or elected to represent the student body in the governance process of the College. Government leaders include student senators and student committee members. Student senators are elected by the class they represent and student committee

members are selected by the student senators. The committees include the Senate Operating Committee, the Committee on Academic Status, the Budget Priorities Committee, the Committee on the Curriculum, the Committee on Grants, the Committee on the Library, the Committee on Fair Practices, the Committee on Student Activities, the Committee on Student Services, the Committee on Student Conduct, the Committee on Student Rules, and the Committee on Academic Computing.

Psychological Type or Type

This term is used to describe one of the sixteen Jungian personality types as measured by the Myers-Briggs Type Indicator (MBTI). Psychological type is determined by a person's preference for introversion or extraversion; sensing or intuition; thinking or feeling; and judgment or perception.

Introversion (I)

This term refers to an individual's preference toward the inner world of ideas and concepts. Introverts tend to create a life of contemplation and interaction with a small group of close friends and family.

Extraversion (E)

This term refers to an individual's preference toward the outer world of people and things. Extraverts tend to create a life of action, social contacts, and a wide circle of friends and acquaintances.

Sensing (S)

This term refers to an individual's preference to perceive the observable through the senses. Sensing types tend to rely on experience rather than theory, to trust the conventional or traditional way of doing things, and to systematically test new information to see if it is practical.

Intuition (N)

This term refers to an individual's preference for perceiving creative possibilities in life's situations. Intuitives tend to rely on inspiration rather than past experiences, to have an interest in the new and untried, and to enjoy the abstract, symbolic, or theoretical.

Thinking (T)

This term refers to an individual's preference for logical, systematic decision-making. Thinking types tend to be objective and impartial, to have a strong sense of fairness, and to possess skills in logical analysis.

Feeling (F)

This term refers to an individual's preference for making judgments on the basis of subjective feelings and personal values. Feeling types tend to be aware of their own and other's feelings, to desire personal and interpersonal harmony, and to possess the capacity for warmth and compassion.

Judgment (J)

This term refers to an individual's preference for closure and decisiveness. Judging types tend to want to

organize their lives and activities. They tend to want to control events more than they want to understand them.

Perception (P)

This term refers to an individual's preference for desiring to understand events rather than control them. Perceiving types tend to be open, curious, receptive, and flexible.

General Hypotheses

In order to address the purpose of this study, the following hypotheses will be tested:

Hypothesis #1

There will be statistically significant differences in the frequency of types in the leader and non-leader populations.

Hypothesis #2

There will be statistically significant differences in the frequency of types in the leader and leader subgroup populations.

Hypothesis #3

There will be statistically significant differences in the frequency of types in the male leader and female leader populations.

These hypotheses will be tested to determine the degree of differences and similarities in the populations described. These findings will be statistically tested to determine their significance.

Limitations of the Study

This study is a descriptive study of a specific population of college students and leaders at a private liberal arts college. This study is limited to describing "what is" as compared to explaining "how" or "why." Other limitations of this study include:

1. The first limitation of this study is the specialized nature of the College and its students. Franklin and Marshall College is a private residential co-educational liberal arts college with a student body of approximately 1950 full-time students. The College is rated by Barron's as being "highly selective" in its admissions. The SAT scores of entering freshmen average about 1200. The College houses about 1200 students on campus, with the remaining 750 students living in fraternity houses or off-campus apartments. The College's curriculum is liberal arts with a strong emphasis on pre-professional programs in medicine, law, and business. The College admits a class of about 540 freshmen out of an applicant pool of 3600. This study is designed to be descriptive of this College and its students. The data and results of this study will be limited to this institution and its students. Any relevance of the findings of this study for other institutions and student populations will need to be carefully examined.

2. The second limitation of this study is the nature of the data collection process. All freshmen are given

the opportunity to take the Myers-Briggs Type Indicator (MBTI) during the fall orientation for new students. The voluntary nature of the testing procedure makes data gathering of the total population difficult. During the seven years that the MBTI has been given there has been an approximately 80% response rate.

3. The third limitation of this study is the time frame of the study. Data for the MBTI will be collected for the classes of 1980 through 1986. The MBTI was given to these classes during the fall orientation of their freshmen years (1976 through 1982).

4. The fourth limitation of this study is the nature of the leader subgroups that are included in the study. The six subgroups were included in the study because they represent major leadership opportunities at the College. They were also chosen because they represent diverse groups at the College and because complete membership lists for the years of the study could be located. These six groups do not include all of the leader subgroups available for students to participate in at the College. Such groups as the performing arts groups and religious organizations were not included in the study because complete membership lists could not be located. Other groups were not included because of lack of size or incomplete membership information. Consequently, this study is limited to the description

and comparison of the characteristics of these six leader subgroups.

Overview of the Study

The purpose of this study is to describe the psychological types of student leaders at a private liberal arts college. The Myers-Briggs Type Indicator (MBTI) will be used to identify Jungian psychological types in the non-leader population, the leader population, and the six leader subgroup populations. These populations will be described and compared to determine similarities and differences in them.

In the following chapters this purpose will be addressed. In chapter 2, the related literature will be reviewed. This review of the literature will include sections that pertain to the use of the Myers-Briggs Type Indicator (MBTI) with college students; to studies that have been conducted to describe the characteristics of college student leaders; and to studies that have been conducted to determine characteristic differences between male and female student leaders.

In chapter 3, the methodology of the study will be described. The population and sample selection procedures will be explained; procedures for data gathering will be described; and statistical treatments of the data will be discussed. A description of the Myers-Briggs Type Indicator (MBTI) and an evaluation of its validity and reliability will be included. A discussion of the research design and the specific hypotheses will be included. Finally,

a discussion of the statistical analysis of the data with reference to the hypotheses will be included.

In chapter 4, the results of the data will be described. Each hypothesis will be examined to determine whether the hypothesis will be accepted or rejected based on statistical analysis.

In chapter 5, the results of the study will be discussed and conclusions will be drawn. The data will be examined to determine whether there are practical applications and/or areas of future research that result from the findings of the study.

Chapter 2

Review of Literature

This chapter contains a review of the literature which relates to the stated purpose of this study. ERIC, APT Bibliographic information, Psych Info, and Dissertation Abstract International resources were used to isolate relevant articles, abstracts, books, and presentations. ERIC and Psych Info computer searches were conducted using the descriptors "college student," "leader," "leadership," "psychological characteristics," "Myers-Briggs Type Indicator," and "MBTI."

The review of related literature will include reviews of the following general areas:

1. The use of the Myers-Briggs Type Indicator (MBTI) with college students;
2. Personality characteristics of college student leaders; and
3. The differences between male and female college student leaders.

The Use of the Myers-Briggs Type Indicator (MBTI) with College Students

The MBTI has been used as a research instrument with various populations of college students. Goldschmid (1967) used the MBTI and other personality instruments to determine whether significant personality characteristics corresponded

with college majors. Levy, Murphy, and Carlson (1972) used the MBTI to describe the psychological types of Negro college students. Stricker, Schiffman, and Ross (1965) used the MBTI to predict freshmen GPA and dropout rates. Mendelsohn and Kirk (1962) used the MBTI to determine type differences between clients and non-clients of a college counseling facility. McCaulley (1974) used the MBTI to determine teaching-learning styles of freshman at the University of Florida. Carskadon and Knudson (1978) used the MBTI to study the relationship between conceptual systems and psychological type. Wotruba (1969) used the MBTI to determine the personality characteristic of effective Resident Assistants (RAs) at Holy Cross College. Kalsbeek, Rodgers, Marshall, Denny, and Nicholls (1982) used the MBTI to assign suitemates to different challenge-support environments in a residence hall to determine whether student development could be influenced in predictable and helpful ways. Mehrotra (1971) used the MBTI to study behavioral cognition as it relates to interpersonal perception and personality traits in college students. Whittemore and Heimann (1965) used the MBTI to study originality responses in academically talented college students. Tyler (1968) used the MBTI to study the personality traits and values of a group of National Merit Scholars and Certificate of Merit recipients. Stalcup (1967) used the MBTI to describe personality traits and personality development in a group of college students

who participated in and a group of students who did not participate in campus activities at Auburn University. Smith, Irey, McCaulley (1973) used the MBTI to help in the design of a self-paced instruction course for engineering students. Sloan (1982) used the MBTI to help in the design of an experimental course for small group interpersonal and communication skills training. Robyak and Patton (1977) used the MBTI to study the effectiveness of a study skills course on different personality types.

Goldschmid (1967) used the CPI, MMPI, MBTI, OPI, and SVIB to measure personality characteristics with reference to college major. The basic hypothesis of the study was that "significant personality traits will covary with choice of major." (p. 302) The battery of tests were given to entering freshmen. The results of these tests were compared to college major at the time of graduation. Goldschmid developed a 2 continual scale of 54 academic disciplines. One scale pertained to science and the other scale to humanities. Regression equations were used as the primary technique of analysis. 16 regression equations were developed; 11 gave significant results on cross-validation. The results of all five of the tests administered to the students were found to be in substantial agreement. Goldschmid found that "they identify similar personality characteristics as being correlated with each of the two continua of science and humanities." (P. 304) The results of the MBTI indicated

that for science majors there was a negative correlation for extraversion (E) for men and no significant type correlation for women. For the humanities majors there was a positive correlation for intuition (N) for men and women, a positive correlation for perception (P) in men, and a positive correlation for feeling (F) in women.

Levy, Murphy, and Carlson (1972) used the MBTI to describe psychological types in Negro college students. The authors compared their findings with findings of earlier studies with white college students. The authors' concern was that:

virtually all of the standardization, construct validation, and theoretical inquiry with this instrument has been based upon various white middle class subject samples. Thus, the potentialities of Jungian theory or the Myers-Briggs Type Indicator for describing ethnic personality patterns have remained unexplored to this time. (p. 642)

The MBTI was administered to 758 Negro undergraduates (311 males and 447 females) at Howard University. Two months later the MBTI was administered to 433 subjects (146 males and 287 females). Stability of the scores was tested with Pearson r 's and data for Negro and white college students were compared. Test-retest reliability for all four scales were found to be statistically reliable. The comparison of the data for Negro and white college students revealed some significant differences. 24.5% of the Negro males were ESTJ as compared to 9.3% in the white sample. 39.5%

of the Negro males were _STJ as compared to 16.6% in the white sample. 26.1% of the Negro females were _SFJ as compared to 12.6% of the females in the white sample. Overall differences between combined male/female Negro and white samples were not significant. The authors conclude that:

Sex differences, while significant on several dimensions, are over-shadowed by ethnic differences. Howard Negro subjects - male and female alike - are clearly more often sensing and judging types in comparison with their white undergraduate counterparts. (p. 646)

The authors suggest that these type differences can be explained by environmental factors. They also express concern about the high percentages of sensing types represented in Negro students. Sensing and judging types tend to need a high degree of concreteness and closure which appears to conflict with the creativeness and openness that is characteristic of the liberal arts curriculum.

Stricker, Schiffman, and Ross (1965) used the MBTI to predict freshmen GPA and dropout rates. 225 men at Wesleyan University and 1616 men (201 freshmen and 1415 men who applied but were not accepted) at the California Institute of Technology (Caltech) were given the MBTI. SAT-V, SAT-M, and high school rank were obtained and used as predictors. The predictors and criteria were intercorrelated separately for the two entering classes. The I-E scale and the J-P scale correlated significant with GPA for the

Wesleyan sample. There were no significant correlations between the MBTI scales and GPA for the Caltech sample. None of the MBTI scales correlated significant with dropout in the entering class at Caltech, but the S-N scale and the T-F scale were significantly correlated for the total Caltech group. The authors concluded that "the Indicator's scales had some ability to predict the two criteria that we studied, even in the selected samples, and this ability varied sharply with the criterion and the nature of the sample." (p. 1092) The MBTI seems to have some predictive validity but further research is necessary to determine the predictive value of the MBTI in relationship to freshmen GPA and dropout rate.

Mendelsohn and Kirk (1962) used the MBTI to determine type differences between clients and non-clients at a college counseling facility. The MBTI was given to 72 clients (31 males and 41 females) and 200 non-clients (97 males and 103 females). The data was analyzed for quantitative scores and for nominal classification. The analysis of the data indicated a higher proportion of clients being ENTJ and ENTP, with a higher proportion of non-clients being ESTJ when compared to the combined client/non-client population. The major contrast between clients and non-clients was the ESTJ type. There were 15 non-client ESTJs while there were zero client ESTJs. Two of the scales (N-S and J-P) discriminated most between the clients and the non-

clients. The authors suggest that "judgment (J) types may be less aware of problems since they are likely to be dissatisfied with unresolved situations and thus, strive for immediate resolutions." (p. 344-345) They suggest that judging (J) types do not like the ambiguity associated with early counseling and consequently, do not seek out counseling. The authors suggest that "perception (P) types may have greater difficulty in making decisions on their own, thus needing external help." (p. 345)

McCaulley (1974) used the MBTI to describe the teaching-learning process at a large university. The MBTI was administered to 3275 freshmen and transfer students entering the University of Florida in the Fall of 1972. The data was compared to MBTI data for other college students. Based on this comparative data, McCaulley concluded that:

Intuitive types, with their greater interest in, and developed skills with symbols, score higher on most aptitude tests which are designed (usually by intuition types) to test verbal skills, speed of comprehension, ability to draw inferences - those aspects of "intelligence" especially valued by intuition types. (p. 6)

She suggests that the higher one goes in academics, the greater the proportion of intuition (N) types who will be found in the population. McCaulley contrasts this information with research on the types of teachers and concludes that "type theory has given them (teachers) a powerful

tool in understanding why they can reach some students more easily than others." (p. 9)

Carskadon and Knudson (1978) used the MBTI to study the relationship between conceptual systems as described by O. J. Harvey and Jungian psychological types. 137 introductory psychology students at Mississippi State University participated in the study. All subjects were given Harvey's "This I Believe" test and the MBTI, Form F. 96 of the subjects met the requirements for classification of conceptual systems. Chi-square analysis was performed for each of the MBTI scales to determine whether individuals of the different types were nonrandomly distributed in the four conceptual systems. Significant results were found on the Sensing-Intuition scale of the MBTI. Sensing (S) types were found in the lower conceptual systems and intuition (N) types were found in the higher conceptual systems. The authors concluded that "sensing types were more likely to be found among individuals in the lower conceptual systems, while intuition types were more likely to be found among individuals in the higher conceptual systems... these results can be interpreted as supporting the construct validity of the Sensing-Intuition scale of the Myers-Briggs Type Indicator." (p. 486)

Wotruba (1969) used the MBTI to identify characteristics of the best student leaders. 300 sophomores and juniors at Holy Cross College who were applying for 60 Resident

Assistant (RA) positions were included in the study. The Edwards Personal Reference Schedule, The Bell Adjustment Inventory, and the MBTI were administered to each of the subjects. The 60 RAs were divided into three equal groups of 20 according to their degree of effectiveness. These three groups were compared to the overall candidate pool to identify similarities and differences based on the test data. Effective RAs had significantly higher mean scores than ineffective RAs on achievement, order, intraception, dominance, and nurturance on the Edwards Personality Preference Schedule. The effective RAs were more constant in their scores than the other two RA groups. They were more dominant, more emotionally secure, and less hostile than the ineffective RAs on The Bell Adjustment Inventory. RAs as a group tended to prefer intuition (N) and feeling (F) on the MBTI when compared to the candidate pool. The author concluded that "the RAs as a group tend to be people who prefer intuition and feeling rather than sensing and thinking, and focus their attention on possibilities rather than facts and handle these with personal warmth rather than impersonal analysis." (p. 110)

Kalsbeek, Rodgers, Marshall, Denny, and Nicholls (1982) used the MBTI to aid in the design of a residence hall environment that influenced developmental growth in students in a predictable and helpful way. 350 men and 350 women were randomly assigned to a high-rise residence hall at

Ohio State University in the Fall of 1979. These students were sent a letter during the previous summer asking them if they would be willing to be assigned to a suite based on MBTI type. Of the 137 men and 150 women who were willing and who returned a complete MBTI, 87 men and 95 women were chosen for suite assignments based on MBTI types. The subjects were assigned on the basis of one of five challenge-support strategies:

1. Pure - All four indicators are identical,
 2. Dominant - Dominant personality functions are identical,
 3. Auxiliary - Auxiliary personality functions are identical,
 4. External - Functions with which one deals with the outside world are identical.
 5. Random - Types are randomly assigned.
- (p. 435)

Additional information considered in suite assignments included smoking habits, study habits, and preference for coed or single sex floors. The University Residence Environment Scale (URES) was administered to the subjects at the end of the academic year. 2-factor ANOVA, Bartlett's t-tests, and Scheffe post hoc procedures were used to analyze the data. Analysis of the data revealed that for men the dominant group scored significant higher on the URES than the random group. For women, the pure group scored significant higher than the external group and the random groups. The dominant group also scored higher than the external group and the random groups. The authors concluded that "the statistical

results indicate that students assigned to suites by the MBTI reported a significantly greater sense of Involvement, Support, Order and Organization, and Student Influence than the students assigned to suites by the standard process." (p. 440)

Mehrotra (1971) used the MBTI to "determine the nature of the relationship of behavioral cognition factors with interests (social service, persuasive, artistic, and literary), values (social, political, and aesthetic) and personality variables (inclusion, control, affection, extraversion-introversion, sensing-intuition, judgment-perception, and thinking-feeling). (p. 145-146) 100 males and 100 females enrolled in an introductory course in educational psychology at The Ohio State University participated in the study. The subjects were given a series of tests which included Expression Grouping for cognition of behavioral classes (CBC); Missing Cartoons for cognition of behavioral systems (CBS); Social Translations for cognition of behavioral transformation (CBT); Cartoon Predictions for cognition of behavioral implications (CBI); the Kuder Preference Record; the Allport, Vernon, and Lindzey Study of Values; the FIRO-B, and the MBTI. Correlations were computed and multiple regression analysis was used to determine relationship and predictability. The results of the analysis of the data show that the four behavioral cognition factors were not independent of one another. The CBS measure had a

significant correlation with sensing-intuition and judging-perception on the MBTI. The author wrote that "those who obtain high scores on CBS also tend to do well on (a) sensing ... as opposed to intuition and (b) judging ... as opposed to perception." (p. 149) The Expression Grouping (CBC) was significantly correlated with introversion-extraversion on the MBTI. Extraverts do well on the CBC. The Social Translation (CBT) was not correlated to any of the personality variables of the MBTI and the Cartoon Prediction (CBI) was correlated with sensing-intuition.

Whittemore and Heimann (1965) used the MBTI to determine originality responses in academically talented male university freshmen. 80 freshmen males who had scored above 159 on the College Qualification Test (CQT) and who had asked for counseling were included in the study. These students were given The Minnesota Test of Creative Thinking; Part I to V of the Consequences Test; and the Anagrams Test to determine levels of originality. The 10 students receiving the highest composite scores and the 10 students receiving the lowest composite scores were given The Study of Values; the CPI; the MBTI; Beitell's Self-Description Test; the MMPI; and the Barron-Welsh Art Scale. The Fisher t pooled variance formula was used to determine significance. Significant differences were found between the two groups. The Original group scored higher on the social presence (Sp), dominance (Do), and capacity for status (Cs) scales of

the CPI. They scored lower on the tolerance (To) and self-control (Sc) on the CPI. The Original groups scored higher on the F, Hs, and Pd scales of the MMPI. The Original group preferred intuition and perceiving as measured by the MBTI. The non-original students preferred sensation and judgment.

Tyler (1968) used the MBTI to describe the personality traits and values of a group of National Merit Scholars and Certificate of Merit recipients. Data for this 4-year study was obtained from over 300 men and 150 women. The Omnibus Personality Inventory, the Allport-Vernon-Lindzey Study of Values, and an opinionnaire were administered to each student once a year for the four year period. The MBTI was administered only once during the student's senior year. For both sexes there were significant increases in the mean scores of the thinking introversion, complexity of outlook, and originality scales of the CPI. For both sexes there were significant increases on the theoretical and aesthetic scales of the Study of Values. There were also significant decreases on the economic and religious scales of the Study of Values for both sexes. There were significantly larger numbers of introverts and intuitives in the National Merit students than in the comparison group of 2000 liberal arts students.

Stalcup (1967) used the MBTI to determine whether there were type differences between students who participated

in and students who did not participate in campus activities. The MBTI was administered to 371 sophomore students at Auburn University. An "Activities Questionnaire" listing 229 campus activities and organizations was also completed by the subjects. 65 of the subjects indicated that they had not participated in any of the activities or organizations listed on the Questionnaire. A post-test (MBTI) was administered to 329 of the original subjects two years after the initial testing. The data from the pre- and post-tests and the Questionnaire were analyzed by computer. The analysis of the data revealed that over the two year period (fall 1964 to spring 1966) 10 subjects showed no change on the MBTI while 129 showed changes on one scale, 72 showed changes on two scales, and 24 showed changes on three scales. The largest change on the MBTI was from sensing (S) to intuition (N). This change occurred in 25.2% of the subjects. The highest percentages of types for the participants were ESFJ, ISFJ, ENFP, and ESTJ. The highest percentage of types in the non-participants were ESFJ, ESTJ, ISTJ, and ISFJ. Stalcup concluded that personality types of college students do change during college and that there are discernable differences between participants and non-participants in campus activities.

Smith, Irely, and McCaulley (1973) used the MBTI to help develop a self-paced instruction design for engineering students. 53 of 58 students in a self-paced course on

thermodynamics participated in the study. The course consisted of 18 self-paced instructional modules which included behavioral objectives and appropriate learning activities. Each module was tested with a pass/fail proficiency exam. Scores on the exams averaged 83 out of 100 as compared to 59 out of 100 for the same exam in a traditional course on thermodynamics. 69% of the students who participated in the study indicated that they felt that the self-paced instruction was more effective than the lecture paced course style. An evaluation of the data revealed that introversion (I) was associated with higher student GPAs. Feeling was associated with smaller course loads, while thinking was associated with larger course loads. Intuition and perception were associated with later course completion dates, while sensing and judging were associated with earlier completion dates. Feeling was associated with attendance at course "help sessions." The authors concluded that "from this study it would appear that relationships between personality types and student learning styles and attitudes may exist." (p. 440)

Sloan (1982) used the MBTI to help in the design of an experimental course to help engineering students develop increased interpersonal awareness and to increase communication skills. The 15 week course was designed to include three general segments:

1. An introduction to the design, decisionmaking process (two weeks),

2. An introduction to group dynamics and personality typing (two weeks), and
3. The design of industrial projects provided by companies in the Golden-Denver area (eleven weeks). (p. 38-39)

The MBTI is used during the second segment to give students information about group dynamics and personality differences. The class was divided into small groups on the basis of MBTI types for personal experience in group dynamics. Sloan concluded that "all students felt that they had increased their self knowledge and their interpersonal relations during the personality typing portion of the course." (p. 41)

Robyak and Patton (1977) used the MBTI to help determine the effectiveness of a study skills course for students with different psychological types. The authors hypothesized that "upon completion of the course, judgers who are provided with more course structure will show significantly different (a) knowledge of study skills, (b) use of study skills, (c) GPA, and (d) feelings of satisfaction than either judgers enrolled in classes with less structure or perceivers enrolled in classes with either more or less structure." (p. 201)

60 undergraduate students at the University of Utah who voluntarily enrolled in one of six study skills courses during the spring quarter of 1975 participated in the study. Complete records were available for 40 of these students. The Survey of Study Habits and Attitude (SSHA), the Study Habit Questionnaire (SHQ), and the MBTI were given to the participants in the study. Multivariate analyses of variance

were used to analyze the data. The predicted interaction between psychological type and course structure was not verified by the study results for measures of study skills knowledge, study skills use, GPA, or student satisfaction. The authors concluded that "however, the results indicated that judges and perceivers differ significant in their post-course use of study skills." (p. 205) Judges learned to use study skills more often than perceivers.

Personality Characteristics
of College Student Leaders

Research on the personality characteristics of college student leaders has been conducted by a number of researchers. Daniels and Wallace (1978) have conducted a follow-up study of leaders and non-leaders to determine the impact of academic preparation and extracurricular activities on their lives ten years after their graduation from college. Smith (1977) used the Student Development Task Inventory (SDTI) to describe the personality changes in college student leaders and non-leaders during one academic year. Kronovet (1965) studied five variables (age, GPA, ACE-L scores, ACE-Q scores, and ACE-Total scores) to determine whether certain characteristics could be identified which differentiate leaders from isolates among college freshmen. Hartshorn (1956) used the MMPI, Allport-Vernon Study of Values, the Minnesota T-S-E Inventory, and the ACE Psychological Examination for College Freshmen to determine whether there are identifiable

personality differences between leaders, members, and non-members of university recognized organizations. Hohman (1976) used the CPI and census data to describe and compare student activists and departmental, student government, fraternal, and residence hall leaders. Brainard and Dollar (1971) used the Stern Activities Index and the College Student Questionnaire (CSQ) to examine whether student leader subgroups had different personality characteristics when compared to each other. Larsen and Larsen (1969) studied leadership in service fraternities and sororities to distinguish similarities and differences between sociometric choice for real leader and best-liked person. Winborn and Jansen (1969) studied differences in demographic characteristics between socio-political action leaders and leaders of liberal and conservative socio-political action groups. Snell and Wakefield (1971) studied demographic characteristics of student leaders in instrumental or voluntary associations. Carson and Parker (1966) used the CPI and the MMPI to describe personality traits in leaders, non-leaders, and average leaders. Flaherty (1967) used the CPI to compare the personality characteristics of leaders and non-leaders. Hogan (1978) used the CPI to describe the personality characteristics of leaders and members of a college football team. Johnson and Frandsen (1962) used the CPI to differentiate student leaders from students in general and to develop a personality profile of student leaders. Harville (1969)

used the Sixteen Personality Factor Questionnaire (16FF) to describe the personality characteristics of potential leaders. Gough (1969) used the CPI to identify variables related to leadership in high school and college students. Flaherty and Reutzel (1965) used the CPI to describe personality traits of high and low achievers in college. Williamson and Hoyt (1952) used the MMPI to measure personality characteristics of college student leaders.

Daniels and Wallace (1978) did a follow-up study to determine the nature of the impact of leadership, academic preparation, and extracurricular activities on life satisfaction ten years after graduation from college. Subjects were selected from the class of 1967 at the University of Southern Mississippi. These subjects were classified as leaders (100 subjects) and non-leaders (472 subjects). The "Former Student Survey" was constructed to measure descriptive information, academic information, extracurricular activities, life satisfaction information, and additional comments. The Survey was mailed to a random sample of 50 leaders and 50 non-leaders. The Survey data was analyzed using chi squares to determine probability of significant differences. Analysis of the data revealed that leaders lived primarily out-of-state in comparison to non-leaders. Leaders received lower salaries than non-leaders. There was no significant differences in the GPAs of leaders and non-leaders. Leaders reported that extracurricular activities were an

important part of their college experience while non-leaders felt that they were not important at all. In summary the authors state that "leaders felt that leadership and extra-curricular activities were important to life satisfaction, while non-leaders, who primarily attended classes, viewed academic experience as important to their life satisfaction." (p. 172)

Smith (1977) used the SDTI to describe personality development in student leaders during one academic year at Kent State University. 41 student leaders were given the SDTI in October of 1975 and again in May of 1976. A control group of 41 non-leaders was also given the SDTI at the same times. All of the subjects were interviewed after the May post-test to determine what types of experiences, people, or activities had influenced their lives during the academic year. An analysis of the data revealed that leaders and non-leaders showed significant growth on the same four scales of the SDTI. Information gathered from the post-test interview with the leaders revealed that leadership experiences had been positive and negative in relation to personality development. Smith concludes that "for this group of student leaders, personality growth or regression did not proceed in any significantly different way than for students not occupying campus leadership positions." (p. 5325)

Kronovet (1965) compared leaders and isolates among college freshmen for age, GPA, ACE-L scores, ACE-Q scores, and ACE-Total scores to determine whether there were significant characteristics which differentiate the two groups. Leaders and isolates were identified during freshmen orientation at Hofstra University. These two groups were compared on the five variables. T-test analysis was used to determine the significance of differences. The results of the analysis of the data revealed that there were no differences between the two groups on the variables of age, ACE-L scores, ACE-Q scores, and ACE-Total scores. The leaders had significantly higher GPAs than the isolates (.01 level). Kronovet concludes that there are few differences between leaders and isolates in relation to aptitude and performance, but there may be differences in personality characteristics and interests.

Hartshorn (1965) used the MMPI, the Allport-Vernon Study of Values, the Minnesota T-S-E Inventory, and the ACE Psychological Examination for College Freshmen to determine whether there are identifiable personality differences between leaders, members, and non-members of university-recognized organizations at the University of California at Los Angeles. 277 students accepted invitations to participate in the study (792 were invited to participate). 126 students (42 leaders, 42 members, and 42 non-members) were selected out of those who responded to the invitation. F ratios and the Tsao correction were used to determine

variance within and between groups. The results of the analysis of the data showed that there were significant differences between the three groups. Hartshorn states that "significant differences were found between leaders, members, and non-members on four variables: the Theoretical, Economic, and Political scales of the Allport-Vernon Study of Values, and the Social Introversion-Extraversion scale of the Minnesota T-S-E Inventory." (p. 521-522)

Hohman (1976) used demographic information from the American University Census and the CPI to describe and compare characteristics of student activist leaders and departmental, student government, fraternal, and residence hall leaders. 95 student leaders and 25 student non-leaders were given the CPI. One-way analysis of variance, Duncan's New Multiple Range Test, and discriminate analysis were used to analyze the data. The results of the analysis of the data revealed that the student activist leaders did not differ significantly from the four other leader groups and the non-leaders on the four broad categories of the CPI. Significant differences between activists, leaders, and non-leaders were found on the individual scales of Dominance, Self-Acceptance, and Good Impression. Student leaders as a group were different from non-leaders on Dominance, Self-Acceptance, and Achievement via Independence. Demographic data indicated that the activists and leader group were different from the non-leaders. They gained more recognition

for accomplishments in high school; they expected to attain a higher level of formal education; and they were more interested in joining leadership and social organizations.

Brainard and Dollar (1971) used the Stern Activities Index (AI) and the College Student Questionnaire (CSQ) to determine differences in personality characteristics between leaders who were identified with one of Clark and Trow's four types of student subcultures (Vocational, Academic, Collegiate, Non-Conformist). Presidents of 220 recognized organizations at the University of Missouri at Columbia were asked to participate. 152 returned the completed questionnaires. Three of the four subcultures had sufficient subjects to be included in the study. Only the non-conformist group did not have enough subjects to be included. The data was analyzed with t-test analysis to determine mean differences between the three remaining groups. Significant differences were found on five of the twelve personality factors measured by the AI. The Vocational Leaders scored higher than the Academic Leaders on Applied Interests. The Collegiate Leaders scored higher than the Vocational Leaders on Closeness, Friendliness, and Expressive-Constraint. The Academic Leaders scored higher than the Collegiate Leaders on Motivation and lower on Closeness and Friendliness.

Larsen and Larsen (1969) studied the correlation between sociometric choice for real leader and actual leadership; between real leader and best-liked person; and between

best-liked person and assessment of task activity in service fraternities and sororities. 169 subjects agreed to participate in this study. 63 men were from three fraternities and 106 women were from five sororities. All subjects were asked to fill out a questionnaire asking for three choices for "real leader" and "best-liked person." Leaders and service hours were identified and the results of the questionnaire were analyzed using the Pearson product-moment correlation. The correlation between real leader and actual leader was significant in six of the eight groups. The correlation between sociometric choice of real leader and best-liked person was significant in seven out of the eight groups. Correlation between best-liked person and group task activity was significant in four of the eight groups. The authors concluded that "in groups where the tasks are supported by group norms and salient for a majority of their members, task and socio-emotional leadership can evidently be maintained by the same individuals." (p. 542)

Winborn and Jansen (1969) studied the demographic characteristics of socio-political action leaders and compared them to liberal and conservative socio-political action leaders. 235 leaders (126 men and 109 women) were selected from a population of 559 elected leaders of recognized student organizations at Indiana University in the Spring of 1966. Each leader was categorized into one of five groups: Socio-political action leaders (S-P), religious

organization leaders (R), residence hall leaders (R-H), activities leaders (A), and fraternal leaders (F). All of the S-P and R subjects were included in the study and a one-third random sample of the R-H, A, and F groups were included. Demographic information was collected for each of the subjects from files at the University. The data was analyzed using analysis of variance, F ratios, Duncan's New Multiple Range Test, Chi squares, and t-tests. The results of the analysis of the data showed significant differences among student leaders for age, SAT-Verbal scores, and cumulative GPAs. S-P leaders differed from only the R-H leaders. S-P leaders tended to be older and to have higher SAT-V scores than the other leader groups.

Snell and Wakfield (1971) studied the demographic characteristics of student leaders in instrumental and voluntary associations. 84 association presidents (62 men and 22 women) out of 116 association presidents at a Midwestern state university participated in this study. Snell and Wakefield tested the following hypotheses:

1. Male students will have significantly higher numbers of leadership positions in instrumental associations than females.
2. Middle class students will have a significantly higher number of leadership positions in instrumental associations than working class members.
3. Protestant students will have a significantly higher number of leadership positions in instrumental associations than Roman Catholic students.

These three hypotheses were tested by chi-square analysis of the data for the .05 level. The analysis of the data lead to the rejection of all three of the hypotheses. There were no significant demographic differences between the members of instrumental and voluntary associations.

Carson and Parker (1966) used the CPI and the MMPI to study the differences in the mean profiles of leaders, non-leaders, and average leaders. 356 freshmen at Brigham Young University were given the two tests and a leadership questionnaire. Those who scored in the upper 25% on leadership were classified as leaders; those who scored in the lowest 25% were classified as non-leaders; and those who scored in the middle 50% were classified as average leaders. The CPI and MMPI were analyzed by t-ratios and the means for the three groups were compared. There were no significant differences between the mean scores of the leaders and average leaders. The mean scores for the leaders and average leaders were significant different from the means of the non-leaders. Leaders and average leaders scored higher on the Do, Sa, and Ai scales of the CPI. Leaders and average leaders scored higher on the D, Sc, and L scales of the MMPI. The results of this study indicate that the leaders and average leaders were more achievement oriented, more capable in academic subjects, and more independent in their approach to achievement than the non-leaders.

Flaherty (1967) used the CPI to compare the personality characteristics of leaders and non-leaders. 22 leaders and 22 non-leaders were selected from a graduating class of 139 at Mount Mercy College. Selection was made by sociometric rating. Freshmen CPI scores and pre-entrance data from the Scholastic Aptitude Test (SAT) were compared for the two groups. The results of the comparison revealed significantly higher scores for leaders on the Dominance (Do), Capacity for status (Cs), Sociability (Sy), Social presence (Sp), and Self-acceptance (Sa) scales of the CPI. Leaders also scored significantly higher than non-leaders on the Sat-Verbal.

Hogan (1978) used the CPI to test the hypothesis that there are stable CPI correlates of leadership. He also used the CPI to evaluate Gough's leadership regression equation. 50 members of the Johns Hopkins football team were given the CPI and an empathy scale. At the end of the football season each player was independently rated on a 7-point leadership scale by two full-time coaches. The players were also assigned scores on Gough's leadership regression equation. Mean scores, standard deviation, and t-scores were calculated and compared for the CPI, the 7-point leadership scale, and Gough's equation. The results indicate that the football players scored higher than men in general on the Dominance (Do), Social presence (Sp), Self-acceptance (Sa), and Empathy (Py) scales of

the CPI. Football players scored lower on Responsibility (Re), Self-control (Sc), and Good impression (Gi) scales on the CPI. Those players who were rated highest on the 7-point scale were described as "dominant, forceful, self-confident, outgoing, efficient, and organized." (p. 393) Scores on Gough's regression equation and the 7-Point scale were highly correlated (.62). The data supports both of the hypotheses. There does appear to be stable CPI correlates for leaders.

Johnson and Frandsen (1962) used the CPI to test whether the CPI is valid in differentiating student leaders from students in general. The authors hypothesized that the CPI profile of leader personality traits will include the traits of achievement-orientation, adjustment, confidence, dominance, extraversion, responsibility, and ingratiation. (p. 343) 50 past or present elected presidents of student organizations and 50 randomly selected non-leaders were included in the study. The sex ratios were evenly matched in each of the groups. The CPI was given to members of both groups at approximately the same time. The results of the CPI were compared for the two groups. Mean scores for the leaders were higher on 17 of the 18 scales of the CPI. Leaders were significantly higher than non-leaders on Self-acceptance (Sa), Capacity for status (Cs), Sense of well-being (Wb), intellectual efficiency (Ie), Social presence (Sp), Sociability (Sy), and Dominance (Do). The

data supports the author's hypothesis that certain personality traits are characteristic of leaders.

Harville (1969) used the Sixteen Personality Questionnaire (16 PF) to attempt to derive a formula for predicting early identification of leaders. 82 elected presidents and 79 randomly selected non-leaders were included in the study. Each participant was given the 16 PF and a leadership questionnaire to complete. Additional information was collected from official records at the University of South Carolina where the study was conducted. The data was analyzed using chi-square analysis. The data indicated that there were four independent variables that significantly predict leadership potential. These variables are group-dependence (GD), casualness (CAS), SAT-Verbal scores, and SAT-Math scores. Leaders were more group-dependent and controlled; and scored higher on the SAT-Verbal and lower on the SAT-Math.

Gough (1969) used the CPI to identify personality variables that relate to leadership in high school and college students. 179 high school leaders were contrasted with 2411 other high school students. The male leaders (90) scored significantly higher than the controls (1121 males) on 17 of the 18 scales on the CPI. The female leaders (89) scored significantly higher than the controls (1290 females) on 11 of the 18 scales. The resulting leadership index included higher scores for leaders on dominance, self-acceptance, well-being, and achievement via independence.

Cross-validation with data from 164 college students revealed a correlation ratio of $+0.34$. Conceptual analysis was used to isolate ten descriptions that were strongly associated with high scores on the leadership index: dominant, aggressive, self-confident, confident, rational, demanding, egotistical, logical, ambitious, and clear thinking. Ten descriptions were strongly associated with low scores on the leadership index: cautious, shy, unassuming, meek, timid, withdrawn, patient, peaceable, cooperative, and submissive. (p. 288)

Flaherty and Reutzel (1965) used the CPI to describe personality characteristics of high and low achievers in college. The CPI was administered to the freshman class (149 women) at Mount Mercy College. At the end of the freshman year the top 25% of the students in GPA (High Achievers) were compared with the bottom 25% of the students in GPA (Low Achievers). The t-test was used to determine significant differences between the means of the 18 variables on the CPI. Analysis of the data revealed that High Achievers scored significantly higher on 10 of the 18 scales on the CPI. All three scales (Ac, Ai, and Ie) in Class III were significantly higher for the High Achievers. The authors concluded that "the following traits were found to be significantly higher for the High Achievers: Do, Cs, Sy, Sa, Re, To, Ac, Ai, Ie, and Fe." (p. 410)

Williamson and Hoyt (1952) used the MMPI to measure personality characteristics of college student leaders.

MMPI data for fraternity and sorority leaders, religious group leaders, student government leaders, political activity leaders, and publications leaders was analyzed to test the follow hypotheses:

- a. When classified by type of activity or organization, students holding positions of "formal" leadership differ significantly with respect to personality characteristics.
- b. Students holding certain positions of "formal" leadership differ significantly with respect to personality characteristics from "students in general." (p. 66)

For the first hypothesis, analysis of the data shows that:

- (1) men student leaders in political activities differ markedly especially on the Pd-Pa-Ma scales, and women leaders differ on the Pd-Pa scales;
- (2) other groups of men leaders appear to be less significantly different from each other except on scattered scales;
- (3) sorority leaders differ in important respects from other types of leaders;
- (4) fraternity leaders do not differ markedly from other types of leaders... (p. 71-72)

For the second hypothesis, the data showed that all five groups of male leaders scored significantly higher on the K, Hy, and Mf scales than the students in general. For women, they scored higher on the K, Hs, Hy, and Ma scales than the students in general. The authors concluded that "as groups, student leaders engaged in political activities, especially those of 'liberal' or 'radical' cast, are characteristically different in personality makeup from the student

leaders engaged in other types of activities..." and "fraternity and sorority leaders tend to be 'just students,' in that they differ relatively little from other types of students-in-general..." (p. 77-78)

Differences between Male and
Female College Student Leaders

Research has been conducted to examine the differences between male and female leaders. Jacobson and Effertz (1974) studied sex role stereotypes and their effect on the ways in which groups perceived male and female leaders. Megargee (1969) studied the relationship between sex role prescriptions and the expression of leadership by high Dominant (measured by the CPI) males and females. Vale and Riker (1979) studied the differences between male and female perceptions of leadership styles. Welsh (1979) examined differences in attitudes of male and female leaders and how they are perceived by male and female group members. Britton and Elmore (1978) used the Attitudes Toward Feminist Issues Scale (ATFI) and the Leadership and Self-Development Scale to describe pre- and post-test differences in female students who participated in a leadership skills workshop designed for women.

Jacobson and Effertz (1974) investigated the affect of traditional sex roles on group perceptions of male and female leaders. The authors hypothesized that "leaders of either sex will be more critical of female followers

than of male followers; male leaders will perceive a lesser degree of success on the group task than will women leaders, and will perceive themselves as having been less effective as leaders than will females; and males will enjoy being leader more than females, since it is consistent with their sex role." (p. 384-385) 36 males and 36 females volunteered from an Introduction to Psychology course at the University of Dayton. The subjects were assigned to four types of groups (MMM, FFF, MMF, MFF). The groups were given a task to accomplish and at its completion were asked to fill out a questionnaire about the group experience. The results of the task and the questionnaire were analyzed relative to the three hypotheses. The first hypothesis was accepted. Leaders tended to rate the performance of female followers as being less effective than male followers. The second hypothesis was also accepted. Male leaders were more critical of the group's performance and of their own effectiveness. The third hypothesis was rejected. There were no significant differences between male and female leaders' enjoyment of the leadership role.

Megargee (1969) investigated situational factors which influence the manifestation of Dominance (Do) in male and female leaders. The CPI was given to 600 students in Introduction to Psychology classes at the University of Texas at Austin. Four groups of twenty pairs were selected from the total subject pool. Group #1 consisted of high Do

men paired with low Do men. Group #2 consisted of high Do men paired with low Do women. Group #3 consisted of high Do women paired with low Do men. Group #4 consisted of high Do women paired with low Do women. Group activities were conducted and data about leadership roles was collected. In Group #1 and #4, 75% of the high Do men and 70% of the high Do women took the leadership role in their group. In Group #2, 90% of the high Do men assumed the leadership role. In Group #3, only 20% of the high Do women assumed the leadership role. Magargee concluded that "these results clearly indicate that social role conflict could seriously inhibit the expression of leadership by high Do women." (p. 378-379)

Vale and Riker (1979) used the Personality Research Form, the Interpersonal Orientation Scale, and the Facilitative Communication Vignettes to determine whether a training course could significantly improve student leaders' self-awareness, regard for others, and facilitative communication. 146 students were in the experimental group and 51 students in the control group. Each group was given the battery of tests near the end of the training course. Two-way analysis of variance was used to determine levels of confidence at the .05 level. Analysis of the data revealed that there were no significant differences between the experimental group and the control group on the three variables tested. However differences were found between the effects of the

course on men and women. Women showed less awareness of their need for dominance, aggressiveness, exhibition, affiliation, and nurturance. They overrated their need for nurturance and affiliation and underrated their need for dominance, aggression, and exhibition. The authors concluded that "there is the possibility, however, implied by this study that male and female student leaders utilize different leadership styles and hence, emphasize different personal qualities in exercising leadership." (p. 59)

Welsh (1979) studied male and female attitudes toward sex roles in leadership. 28 males and 28 females were given the Attitudes Toward Women Scale and the Women as Managers Scale. The subjects were shown a 10 minute video tape of either a male or a female leading a mixed-sex triad. The subjects were given a questionnaire after their viewing of the video tape. The analysis of the data from the two scales and the questionnaire revealed significant differences. The mean scores for the Women as Managers Scale were higher for females than for males. This suggests that the males defined leadership in more conservative terms for females than for males. Data from the leadership triad questionnaire revealed that the group with the male leader was rated more successful than the female leader even though the male and female leaders accomplished the task in the exact same manner. In the triad, the female was rated higher on communication skills than the male. Welsh concluded

that the "males' perception of females as leaders is somewhat more traditional or conservative than females' perception of that role." (p. 21)

Britton and Elmore (1978) studied the impact of a leadership skills workshop for women on student leaders. The 25 women who enrolled in the workshop were given pre- and post-test of the Attitudes Toward Feminist Issues Scale (ATFI) and the Leadership and Self-Development Scale. The data was submitted to one-tail t-test analysis. The analysis of the data revealed significant changes on the ATFI total score and on the Leadership and Self-Development Scale total score. The data reveals that the participants changed in attitudes and skills during the workshop. The authors concluded that "the participants in the Leadership and Self-Development Workshop for Women exhibited more leadership qualities and more liberal feminist attitudes after the workshop than before the workshop." (p. 13)

Summary of Research and

Relationship to Purpose

This chapter contains a review of the literature which relates to the purpose of this study. The review of the literature covered three general areas: the use of the MBTI with college students; personality characteristics of college student leaders; and differences between male and female college student leaders.

The review of the literature about the use of the MBTI with college students showed that several studies have been conducted. The primary use of the MBTI was in descriptive studies of personality characteristics. Goldschmid (1967) used the MBTI to describe psychological type correspondence with college majors. Levy, Murphy, and Carlson (1972) used the MBTI to describe the psychological types of Negro college students. Mendelsohn and Kirk (1962) used the MBTI to describe the type characteristics of effective Resident Assistants. Tyler (1968) used the MBTI to describe psychological type characteristics of a group of National Merit Scholars and Certificate of Merit recipients. Stalcup (1967) used the MBTI to describe the types of students who participated in recognized campus activities. The use of MBTI in descriptive research is well established in the literature.

Of the studies conducted with the MBTI and college students, very few have addressed the problem of describing the psychological types of college student leaders. Only wotruba (1969) and Stalcup (1967) have attempted to describe types in student leaders. Both of these studies are limited to a single area of leadership participation. There appears to be little research on psychological types and student leaders.

Research has been conducted to describe personality characteristics of student leaders. The primary instrument

used in this research has been the CPI. Hohman (1976) used the CPI and census data to compare personality and demographic characteristics of student activists with departmental, student government, fraternal, and residence hall leaders. Carson and Parker (1966) used the CPI and the MMPI to describe personality traits in leaders, non-leaders, and average leaders. Flaherty (1967) used the CPI to compare the personality characteristics of leaders and non-leaders. Hogan (1978) used the CPI to describe the personality characteristics of leaders and members of a college football team. Johnson and Frandsen (1962) used the CPI to differentiate between student leaders and students in general. Gough (1969) used the CPI to identify variables for a "Leadership Index" for high school and college leaders. Flaherty and Reutzel (1965) used the CPI to describe personality traits of high and low achievers in college. Research with the MMPI (Hartshorn, 1956; Carson and Parker, 1966; and Williamson and Hoyt, 1952), the SDTI (Smith, 1977), the Study of Values (Hartshorn, 1956), the Stern AI (Brainard and Dollar, 1971), and the 16 PF (Harville, 1969) has been conducted, but without the scope of the CPI research. Research with the CPI has consistently revealed significant personality trait differences between leaders and non-leaders. Leaders score significantly higher than non-leaders on the dominance (Do), capacity for status (Cs), sociability (Sy), social

presence (Sp), and self-acceptance (Sa) scales of the CPI (Flaherty, 1967).

The CPI leadership research has been an important data resource for those interested in the personality characteristics of student leaders. Although the CPI research findings appear to be consistent in a variety of populations, research from other theoretical rationales is needed to provide information about the personality traits of student leaders from another point-of-view.

Research on the differences between male and female student leaders has shown that sex roles and stereotypes have an impact of leadership effectiveness and leadership opportunities. Jacobson and Effertz (1974) found that sex roles influenced how male and female leaders perceived the effectiveness of group members. They found that male leaders tended to rate the performance of female followers as less effective than male followers. Megargee (1969) found that high dominant (Do) male and female leaders were influenced by the sex make-up of the group they were assigned to. In the group with a high Do female with low Do men only 20% of the high Do females assumed the leadership role. Vale and Riker (1979) found that male and female student leaders utilize different leadership styles. Welsh (1979) found that male perceptions of female leaders was more traditional or conservative than the female perceptions of that role. Although the research literature is limited

in the area of male and female leader characteristics, the studies reviewed indicate that sex roles and stereotypes do have an effect on the perception of leadership effectiveness and possibly on leadership opportunities. Further research in this area may help to assess the validity of these findings.

The review of the relevant literature has shown the need for further research in the area of personality characteristics of college student leaders. The purpose of this study is to address this need by describing the psychological types of student leaders at a private liberal arts college.

Chapter 3

Methodology

Chapter 3 contains a detailed description of the research methodology used in this study. Descriptions of the following research procedures and methods are included: (a) population, (b) procedures, (c) instrumentation, (d) design and hypotheses, and (e) statistical analysis.

Population

Students from the Classes of 1980 through 1986 at Franklin and Marshall College in Lancaster, Pennsylvania, will be included in the population of this study. Franklin and Marshall college is a private liberal arts college with an enrollment of approximately 1950 students. Students at Franklin and Marshall College are traditional college students.

Franklin and Marshall College is a "highly selective" college which enrolls approximately 540 students in its freshman class out of 3600 applicants. The average student SAT score is approximately 1200. Approximately 35% of the freshman class comes from Pennsylvania, 62% come from other states (especially New Jersey and New York), and 3% come from foreign countries. About 70% of the freshman class graduated from public high schools. About 50 transfer students are accepted each year. Only about 4% of the

freshman class drops out each year. 54% of the graduates pursue further study: 10% enter law school, 8% enter medical school, and 1% enter dental school. Approximately 25% of the graduates pursue careers in business. (Barron, 1980)

Procedures

Students from the classes of 1980 through 1986 were given the opportunity to take a battery of tests during fall orientation for new students. The Myers-Briggs Type Indicator (MBTI) was one of the tests included in this battery. The test results were stored in individual student files in the Counseling Center for counseling and research purposes. Hand and computer lists of the members of each class and their MBTI results will be collected for the non-leader population, the leader population, and the leader subgroup populations.

Members of the leader population and the leader subgroup populations will be compiled from official College records of the membership of the six leader subgroups to be included in this study. These official lists will be collected from annual reports, department files, and the College archives. These lists will include complete membership records from the 1976-77 academic year through the 1982-83 academic year.

The class lists will provide the data for the non-leader population; the leader subgroups lists will provide the data for the leader population and the leader subgroup

populations. For the leader population, MBTI data will be included only once per leader even though some may have been involved in more than one leadership position. For the leader subgroup populations, MBTI data will be included only once per leader per subgroup even though some may have been involved in more than one leadership position in the subgroup.

The MBTI was administered to the students by members of the College Counseling Center. The MBTI was given on a voluntary basis. Those who administered the battery of tests explained that the purpose of the tests were for use in individual counseling and career planning and in research. Confidentiality of results is guaranteed.

Permission to use MBTI data was obtained from the Director of the Counseling Center who has supervised all aspects of the data gathering to assure confidentiality and conformity of use for research purposes. Access to class lists and leader subgroup membership lists was obtained through permission of the Dean of Student Affairs Office.

Instrumentation

The Myers-Briggs Type Indicator (MBTI), Form F was used in this study. The Form F includes 166 questions and word pairs. The Form F is a paper and pencil forced answer questionnaire that measures Jungian psychological types on four bipolar scales: introversion (I) or extraversion (E), sensing or intuition (N), thinking (T) or feeling

(F), and judging (J) or perceiving (P). The MBTI measures sixteen different combinations of psychological type: Introverted Sensing with thinking (ISTJ), Introverted Thinking with sensing (ISTP), Introverted Sensing with feeling (ISFJ), Introverted Feeling with sensing (ISFP), Introverted Intuition with feeling (INFJ), Introverted Feeling with intuition (INFP), Introverted Intuition with thinking (INTJ), Introverted Thinking with intuition (INTP), Extraverted Sensing with thinking (ESTP), Extraverted Thinking with sensing (ESTJ), Extraverted Sensing with Feeling (ESFP), Extraverted Feeling with sensing (ESFJ), Extraverted Intuition with feeling (ENFP), Extraverted Feeling with intuition (ENFJ), Extraverted Intuition with thinking (ENTP), and Extraverted Thinking with intuition (ENTJ).

The MBTI was developed by Isabel Briggs Myers to measure Jungian psychological types. The MBTI was first published in 1962 by Educational Testing Service of Princeton, New Jersey. In 1975 the publication of the MBTI was transferred to the Consulting Psychologists Press in Palo Alto, California. The Manual for the MBTI was first published in 1962. Normative data and a bibliography of MBTI research is available through the Center for Application of Psychological Type in Gainesville, Florida.

Several studies have been conducted to test the validity and reliability of the MBTI. Stricker and Ross (1963) tested the MBTI scales' "intercorrelations and internal-

consistency reliability in terms of type categories and continuous scores." (p. 288) The authors concluded that the E-I, S-N, and T-F scales were independent of each other, while the J-P scale was moderately related to the S-N and T-F scales. Stricker and Ross reported internal-consistency reliability of continuous scores in the .70's and low .80's and type category reliability in the .40's and .50's. (p.292)

Steele and Kelly (1976) studied the correlation between the E-I scale of the MBTI and the extraversion-introversion scale on the Eysenck Personality Questionnaire (EPQ). The authors reported a .74 correlation between the two scales and concluded that "despite the difference in the theoretical orientations of Jung and Eysenck, the high correlation of the MBTI and EPQ Extraverted-Introverted scales demonstrates an area of equivalency at the self-report questionnaire level in dealing with extraversion-introversion." (p. 691)

Carlyn (1977) conducted a comprehensive assessment of the MBTI and its four personality scales. The author reported that the E-I, S-N, and T-F scales are relatively independent of each other and seem to measure personality dimensions which are similar to those described by Jung in his psychological type theory. Carlyn concluded that "the numerous studies of construct validity summarized above suggest that the individual scales of the Myers-Briggs Type Indicator measure important dimensions of personality which seem to be quite similar to those postulated by Jung....

The Indicator appears to be a reasonably valid instrument which is potentially useful for a variety of purposes." (p. 471)

Cohen, Cohen, and Cross (1981) tested the construct validity of the MBTI. They found consistency with the findings of previous research for the E-I, S-N, and T-F scales. The authors concluded that "these three scales, E-I, S-N, and T-F therefore received construct validation support. The Judgement-Perception dimension is perhaps less unitary, and less well translated...." (p. 890)

There have also been studies that have been critical of the validity and reliability of the MBTI (Stricker and Ross, 1964 and Omizo, 1978) but the MBTI is viewed by many as the leading instrument for measuring Jungian psychological type (Keirsey and Bates, 1978, Prendergast, 1983, and Yoe, 1984). Coan (1978) wrote in the Eight Mental Measurement Yearbook (Buros, 1978) that "it would be fair to say that the group difference and correlations are broadly supportive of the construct validity of the scales.... On the whole, the test clearly merits further research and use." (p. 975)

Design and Hypotheses

The design of this study is self-report descriptive research. The MBTI, Form F is used to determine self-reported psychological type preferences for the general student population, the leader population, and the leader subgroup populations. Type frequencies are tabulated in Type Tables

for comparison. Statistical analysis is used to determine significance in relation to the following hypotheses:

Hypothesis #1

There will be statistically significant differences in the frequency of types in the leader and non-leader populations.

Hypothesis #2A

There will be statistically significant differences in the frequency of types in the leader population (LP - A) and the leader subgroup of athletes (A).

Hypothesis #2B

There will be statistically significant differences in the frequency of types in the leader population (LP - C) and the leader subgroup of communications leaders (C).

Hypothesis #2C

There will be statistically significant differences in the frequency of types in the leader population (LP - G) and the leader subgroup of fraternity and sorority leaders (G).

Hypothesis #2D

There will be statistically significant differences in the frequency of types in the leader population (LP - H) and the leader subgroup of academic and senior honor students (H).

Hypothesis #2E

There will be statistically significant differences in the frequency of types in the leader population (LP - R) and the leader subgroup of Resident Assistants (R).

Hypothesis #2F

There will be statistically significant differences in the frequency of types in the leader population (LP - S) and the leader subgroup of student government leaders (S).

Hypothesis #3

There will be statistically significant differences in the frequency of types in the male leader and female leader populations.

These hypotheses will be tested to determine the degree of similarities and differences in the populations described. Chi-square analysis will be computed to determine the level of statistical significance of the data.

Statistical Analysis

The statistical methods used in the analysis of the data were designed to:

1. determine the frequency of types in each of the populations described in this study, and
2. determine whether the similarities and differences in frequencies of types for the various populations are statistically significant at the .001 level.

The first statistical procedure involves tabulating the observed frequency (O_f), the expected frequency (E_f),

and the difference between the observed frequency and the expected frequency ($O_f - E_f$). The difference between the observed frequency and the expected frequency will be used to determine similarities and differences in the frequency of types in the populations being compared.

The second statistical procedure involves the tabulation of chi-squares. Chi-square analysis was chosen because it provides a way to analyze nominal data in contingency tables when the data is mutually exclusive, outcomes are independent, and the sum of the observed frequency is equal to the sum of the expected frequency. (Galfo, 1975)

The .001 level of confidence was chosen to determine statistical significance because chi-square values are influenced by the number of subjects in a sample. The larger the sample size, the greater the probability of statistical significance at lower levels of confidence. Consequently, the .001 level was chosen to minimize the influence of sample size on the data.

Summary of Methodology

The purpose of this study is to describe the psychological types of student leaders at a private liberal arts college. The Myers-Briggs Type Indicator (MBTI) was used to identify Jungian psychological types in the leader population, the non-leader population, and the six leader subgroup populations. These populations will be described and compared to determine

whether there are similarities of differences in the frequency of types.

Three hypotheses have been formulated. Hypothesis #1 states that there will be significant differences in the frequency of types in the non-leader population and the leader population. Hypothesis #2 states that there will be significant differences in the frequency of types in the leader population and the leader subgroup populations. Hypothesis #3 states that there will be significant differences in the frequency of types in the male leader population and the female leader population.

These three hypotheses will be tested to determine whether there are statistically significant similarities or differences in the frequency of types in the various populations. Chi-square analysis will be used to determine statistical significance and relationship between the variables.

Chapter 4

Results

This chapter includes the results of the data collection and the statistical analysis of the data pertaining to the hypotheses of this study. Each hypothesis will be evaluated separately to determine whether there are statistically significant relationships between the frequency of types in the populations described. Chi-square analysis is used to determine statistical significance and relationship between variables.

Hypothesis #1

The first area of investigation involves the relationship between the frequency of types in the leader and non-leader populations. Hypothesis #1 states that there will be statistically significant differences in the frequency of types in the leader and non-leader populations. Table #1 lists the data pertaining to this hypothesis.

The leader population includes 1543 subjects from the classes of 1980 through 1986, while the non-leader population includes 1772 subjects from the same classes. 46.5% of the subjects involved in this study were identified as leaders while 53.5% of the subjects in this study were identified as non-leaders.

Table #1

Frequency of Types in the
Leader and Non-Leader Populations

Type	Leader			Non-Leader		
	O_f	E_f	$(O_f - E_f)$	O_f	E_f	$(O_f - E_f)$
ISTJ	119	131.3	-12.3	163	150.7	12.3
ISFJ	139	136.8	2.2	155	157.2	- 2.2
INFJ	80	97.7	-17.7	130	112.3	17.7
INTJ	68	77.3	- 9.3	98	88.7	9.3
ISTP	60	48.9	11.1	45	56.1	-11.1
ISFP	81	72.1	8.9	74	82.9	- 8.9
INFP	95	133.6	-38.6	192	153.4	38.6
INTP	62	72.6	-10.6	94	83.4	10.6
ESTP	54	46.5	7.5	46	53.5	- 7.5
ESFP	101	77.7	23.3	66	89.3	-23.3
ENFP	167	175.5	- 8.5	210	201.5	8.5
ENTP	68	71.2	- 3.2	85	81.8	3.2
ESTJ	124	103.8	20.2	99	119.2	-20.2
ESFJ	141	123.8	17.2	125	142.2	-17.2
ENFJ	109	103.8	5.2	114	119.2	- 5.2
ENTJ	75	70.3	4.7	76	80.7	- 4.7
Total	1543	1543.0		1772	1772.0	

A comparison of the frequency of types for the leader and non-leader populations reveals that there are differences in the frequency of types for the two populations. The leader population is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISFJ (2.2), ISTP (11.1), ISFP (8.9), ESTP (7.5), ESFP (23.3), ESTJ (20.2), ESFJ (17.2), ENFJ (5.2), and ENTJ (4.7). The non-leader population is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (12.3), INFJ (17.7), INTJ (9.3), INFP (38.6), INTP (10.6), ENFP (8.5), and ENTP (3.2).

The most prevalent types in the leader population are ENFP (167), ESFJ (141), and ISFJ (139). These types represent the largest observed frequency in the leader population but they do not necessarily represent the largest difference between observed frequency and expected frequency for the leader population. The greatest differences between the observed and expected frequency are ESFP (23.3), ESTJ (20.2), ESFJ (17.2), INFP (-38.6), and INFJ (-17.7). Thus, the types that show the greatest statistical over-representation in the leader population include ESFP, ESTJ, and ESFJ. The types that show the greatest statistical under-representation include INFP and INFJ.

The most prevalent types in the non-leader population are ENFP (210), INFP (192), and ISTJ (163). Again, the large observed frequency does not necessarily represent

the largest differences between the observed frequency and the expected frequency. The greatest differences in the observed and expected frequency are INFP (38.6), INFJ (17.7), ESFP (-23.3), ESTJ (-20.2), and ESFJ (-17.2). Thus, the types that show the greatest statistical over-representation in the non-leader population include INFP and INFJ. The types that show the greatest statistical under-representation include ESFP, ESTJ, and ESFJ.

Chi-square analysis was used to determine whether these differences in the frequency of types are statistically significant at the .001 level. The chi-square for the leader and non-leader populations is 70.0 with 15 degrees of freedom. This means that the difference between the frequency of types in the leader and non-leader populations are statistically significant at the .001 level (37.697). Thus, the differences in the frequency of types appears not to be a result of chance or sampling error.

Hypothesis #1 is accepted. There are significant differences in the frequency of types in the leader and non-leader populations. The chi-square value of 70.0 is statistically significant at the .001 level of confidence. The leader population tends to be over-represented by ESFP, ESTJ, and ESFJ. The non-leader population tends to be over-represented by INFP and INFJ.

Hypothesis #2A

The second area of investigation involves the relationship between the frequency of types in the leader population and the leader subgroup of intercollegiate varsity athletes. Hypothesis #2A states there will be statistically significant differences in the frequency of types in the leader population (LP - A) and the leader subgroup of athletes (A). Table #2 lists the data pertaining to this hypothesis.

The leader population (LP-A) includes 585 subjects, while the leader subgroup of athletes (A) includes 958 subjects. The athlete subgroup (A) represents 62.1% of the entire leader population (LP).

A comparison of the frequency of types for the leader population (LP-A) and the leader subgroup of athletes (A) shows that there are differences in the frequency of types for the two populations. The leader population (LP-A) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (8.9), ISFJ (9.3), INFJ (8.7), INTJ (6.2), INFP (4.0), INTP (3.5), ENFP (4.7), ESFJ (1.5), and ENFJ (1.7). The leader subgroup of athletes (A) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTP (6.7), ISFP (3.7), ESTP (7.5), ESFP (17.3), ENTP (2.8), ESTJ (9.0), and ENTJ (1.4).

Table #2
 Frequency of Types in the
 Leader Population (LP-A) and the Leader Subgroup
 Population of Varsity Athletes (A)

Type	Leader (LP-A)			Athletes (A)		
	O _f	E _f	(O _f -E _f)	O _f	E _f	(O _f -E _f)
ISTJ	54	45.1	8.9	65	73.9	- 8.9
ISFJ	62	52.7	9.3	77	86.3	- 9.3
INFJ	39	30.3	8.7	41	49.7	- 8.7
INTJ	32	25.8	6.2	36	42.2	- 6.2
ISTP	16	22.7	-6.7	44	37.3	6.7
ISFP	27	30.7	-3.7	54	50.3	3.7
INFP	40	36.0	4.0	55	59.0	- 4.0
INTP	27	23.5	3.5	35	38.5	- 3.5
ESTP	13	20.5	- 7.5	41	33.5	7.5
ESFP	21	38.3	-17.3	80	62.7	17.3
ENFP	68	63.3	4.7	99	103.7	- 4.7
ENTP	23	25.8	- 2.8	45	42.2	2.8
ESTJ	38	47.0	- 9.0	86	77.0	9.0
ESFJ	55	53.5	1.5	86	87.5	- 1.5
ENFJ	43	41.3	1.7	66	67.7	- 1.7
ENTJ	27	28.4	- 1.4	48	46.6	1.4
Total	585	585.0		958	958.0	

The largest observed frequency of types in the leader population (LP-A) includes ENFP (68), ISFJ (62), ESFJ (55), and ISTJ (54). The largest difference between the observed frequency and the expected frequency in the leader population (LP-A) includes ISFJ (9.3), ISTJ (8.9), INFJ (8.7), ESFP (-17.3), and ESTJ (-9.0). Thus, the types that show the greatest statistical over-representation in the leader population (LP-A) are ISFJ, ISTJ, and INFJ. The types that show the greatest statistical under-representation are ESFP and ESTJ.

The largest observed frequency of types in the leader subgroup of athletes (A) are ENFP (99), ESTJ (86), ESFJ (86), and ESFP (80). The largest difference between the observed frequency and the expected frequency in the athlete subgroup (A) include ESFP (17.3), ESTJ (9.0), ISFJ (-9.3), ISTJ (-8.9), and INFJ (-8.7). The types that show the greatest statistical over-representation in the athlete subgroup (A) are ESFP and ESTJ. The types that show the greatest statistical under-representation are ISFP, ISTJ, and INFJ.

Chi-square analysis was calculated to determine whether these differences in the frequency of types are statistically significant at the .001 level. The chi-square for the leader population and the leader subgroup of athletes (A) is 38.5 with 15 degrees of freedom. This means that there is a statistically significant relationship between the

variables at the .001 level (37.697). Thus, the differences in the frequency of types appears to be the result of type differences in the two populations and not a result of chance or sampling error.

Hypothesis #2A is accepted. There are significant differences in the frequency of types in the leader population (LP-A) and the leader subgroup of intercollegiate varsity athletes (A). The chi-square value of 38.5 is statistically significant at the .001 level of confidence. The leader population (LP-A) tends to be over-represented by ISFJ, ISTJ, and INFJ. The athlete subgroup (A) tends to be over-represented by ESFP and ESTJ.

Hypothesis #2B

The third area of investigation involves the relationship between frequency of types in the leader population and the leader subgroup of communications leaders. Hypothesis #2B states that there will be statistically significant differences in the frequency of types in the leader population (LP - C) and the leader subgroup of communications leaders (C). Table #3 lists the data that pertains to this hypothesis.

The leader population (LP-C) includes 1428 subjects, while the leader subgroup of communications leaders (C) includes 115 subjects. The communications leaders (C) represents 7.5% of the entire leader population (LP).

Table #3
 Frequency of Types in the
 Leader Population (LP-C) and the Leader Subgroup
 Population of Communication Leaders (C)

Type	Leader (LP-C)			Communications (C)		
	O_f	E_f	$(O_f - E_f)$	O_f	E_f	$(O_f - E_f)$
ISTJ	109	110.1	- 1.1	10	8.9	1.1
ISFJ	130	128.6	1.4	9	10.4	- 1.4
INFJ	71	74.0	- 3.0	9	6.0	3.0
INTJ	63	62.9	0.1	5	5.1	- 0.1
ISTP	57	55.5	1.5	3	4.5	- 1.5
ISFP	74	75.0	- 1.0	7	6.0	1.0
INFP	86	87.9	- 1.9	9	7.1	1.9
INTP	62	57.4	4.6	0	4.6	- 4.6
ESTP	50	50.0	0.0	4	4.0	0.0
ESFP	95	93.5	1.5	6	7.5	- 1.5
ENFP	148	154.6	- 6.6	19	12.4	6.6
ENTP	63	62.9	0.1	5	5.1	- 0.1
ESTJ	121	114.8	6.2	3	9.2	- 6.2
ESFJ	133	130.5	2.5	8	10.5	- 2.5
ENFJ	99	100.9	- 1.9	10	8.1	1.9
ENTJ	67	69.4	- 2.4	8	5.6	2.4
Total	1428	1428.0		115	115.0	

A comparison of the frequency of types for the leader population (LP-C) and the communications leaders (C) shows that there are differences in the frequency of types for the two populations. The leader population (LP-C) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISFJ (1.4), INTJ (0.1), ISTP (1.5), INTP (4.6), ESFP (1.5), ENTP (0.1), ESTJ (6.2), and ESFJ (2.5). The leader subgroup of communications leaders (C) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (1.1), INFJ (3.0), ISFP (1.0), INFP (1.9), ENFP (6.6), ENFJ (1.9), and ENTJ (2.4). The observed frequency and the expected frequency for ESTP are the same.

The largest observed frequency for the leader population (LP-C) includes ENFP (148), ESFJ (133), ISFJ (130), and ESTJ (121). The largest differences between the observed frequency and the expected frequency in the leader population (LP-C) include ESTJ (6.2), INTP (4.6), ENFP (-6.6), and INFJ (-3.0). Types that show the greatest statistical over-representation in the leader population (LP-C) are ESTJ and INTP, while the types that show the greatest statistical under-representation are ENFP and INFJ.

The largest observed frequency for the leader subgroup of communications leaders (C) includes ENFP (19), ISTJ (10), and ENFJ (10). The greatest differences between the observed frequency and the expected frequency in the communications leaders are ENFP (6.6), INFJ (3.0), ESTJ

(-6.2), and INTP (-4.6). The types that show the greatest statistical over-representation in the communications leaders are ENFP and INFJ, while the types that show the greatest statistical under-representation are ESTJ and INTP.

Chi-square analysis was calculated to determine whether these differences in the frequency of types are statistically significant at the .001 level. The chi-square value for the leader population (LP-C) and the communications leaders (C) is 19.1 with 15 degrees of freedom. This chi-square value is significant at the 0.20 level (19.311) which is far below the .001 level of significance (37.697). Consequently, the relationship between the variables in this hypothesis may be explained by chance or sampling error. The differences in the frequency of types for the leader population (LP-C) and the communications leaders (C) are not statistically significant.

Hypothesis #2B is rejected. There are differences in the frequency of types in the leader population (LP-C) and the communications leaders (C) but these differences are not statistically significant at the .001 level of confidence. Although the leader population (LP-C) tends to be over-represented by ESTJ and INTP, the low chi-square value indicates that this may be a result of chance or sampling error. The tendency for ENFP and INFJ to be over-represented in the communications leaders (C) may also be the result of chance or sampling error.

Hypothesis #2C

The fourth area of investigation involves the relationship between the frequency of types in the leader population and the leader subgroup of fraternity and sorority leaders. Hypothesis #2C states that there will be statistically significant differences in the frequency of types in the leader population (LP - G) and the leader subgroup of fraternity and sorority leaders (G). Table #4 lists the data pertaining to this hypothesis.

The leader population (LP-G) includes 1154 subjects, while the fraternity/sorority leaders subgroup (G) includes 389 subjects. The fraternity/sorority leaders (G) represent 25.2% of the entire leader population (LP).

A comparison of the frequency of types for the two populations reveals that there are differences in the frequency of types for the two populations. The leader population (LP-G) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for INTJ (2.1), ISTP (4.1), ENFP (12.1), ESFJ (2.5), ENFJ (3.5), and ENTJ (0.9). The leader subgroup of fraternity and sorority leaders (G) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (1.0), ISFJ (4.0), INFJ (0.8), ISFP (2.6), INFP (1.0), INTP (5.4), ESTP (1.4), ESFP (1.5), ENTP (1.9), and ESTJ (5.7).

The largest observed frequency for the leader population (LP-G) includes ENFP (137), ESFJ (108), and ENFJ (100).

Table #4
 Frequency of Types in the
 Leader Population (LP-G) and the Leader Subgroup
 Population of Fraternity & Sorority Leaders (G)

Type	Leader (LP-G)			Fraternity/Sorority (G)		
	O _f	E _f	(O _f -E _f)	O _f	E _f	(O _f -E _f)
ISTJ	88	89.0	- 1.0	31	30.0	1.0
ISFJ	100	104.0	- 4.0	39	35.0	4.0
INFJ	59	59.8	- 0.8	21	20.2	0.8
INTJ	53	50.9	2.1	15	17.1	-2.1
ISTP	49	44.9	4.1	11	15.1	- 4.1
ISFP	58	60.6	-2.6	23	20.4	2.6
INFP	70	71.0	- 1.0	25	24.0	1.0
INTP	41	46.4	- 5.4	21	15.6	5.4
ESTP	39	40.4	- 1.4	15	13.6	1.4
ESFP	74	75.5	- 1.5	27	25.5	1.5
ENFP	137	124.9	12.1	30	42.1	-12.1
ENTP	49	50.9	- 1.9	19	17.1	1.9
ESTJ	87	92.7	- 5.7	37	31.3	5.7
ESFJ	108	105.5	2.5	33	35.5	- 2.5
ENFJ	85	81.5	3.5	24	27.5	- 3.5
ENTJ	57	56.1	0.9	18	18.9	- 0.9
Total	1154	1154.0		389	389.0	

The largest differences between the observed frequency and the expected frequency for the leader population (LP-G) include ENFP (12.1), ISTP (4.1), ESTJ (-5.7), INTP (-5.4), and ISFJ (-4.0). The types that show the greatest statistical over-representation in the leader population (LP-G) are ENFP and ISTP, while the types that show the greatest under-representation are ESTJ, INTP, and ISFJ.

The largest observed frequency for the leader subgroup of fraternity and sorority leaders (G) includes ISFJ (39), ESTJ (37), ESEJ (33), ISTJ (31), and ENFP (30). The greatest differences between the observed frequency and the expected frequency in the fraternity and sorority leader subgroup (G) includes ESTJ (5.7), INTP (5.4), ISFJ (4.0), ENFP (-12.1), and ISTP (-4.1). The types that show the greatest statistical over-representation are ESTJ, INTP, and ISFJ. The types that show the greatest statistical under-representation are ENFP and ISTP.

Chi-square analysis was used to determine the statistical level of confidence for the differences in frequency of types in these two populations. The chi-square value for the leader population (LP-G) and the leader subgroup of fraternity/sorority leaders (G) is 13.0. At 15 degrees of freedom this chi-square value is only statistically significant at the 0.70 level (11.721). This chi-square value is far less than the .001 level (37.697) which is called for in the hypothesis. Consequently, the relationship

between the variables in this hypothesis are not statistically significant at the .001 level and may be the result of chance or sampling error.

Hypothesis #2C is rejected. There are differences in the frequency of types in the two populations, but these differences are not statistically significant at the .001 level of confidence. The leader population (LP-G) tends to be over-represented by ENFP and ISTP while the fraternity and sorority leader subgroup (G) tends to be over-represented by ESTJ, INTP, and ISFJ. These relationships are not statistically significant at the .001 level and may be the result of chance or sampling error.

Hypothesis #2D

The fifth area of investigation involves the relationship between the frequency of types in the leader population and the leader subgroup of academic and senior honor students. Hypothesis #2D states that there will be statistically significant differences in the frequency of types in the leader population (LP-H) and the honor students subgroup (H). Table #5 lists the data pertaining to this hypothesis.

The leader population (LP-H) includes 1222 subjects, while the leader subgroup of honor students (H) includes 321 subjects. The honor students (H) represent 20.8% of the entire leader population (LP).

A comparison of the frequency of types for the two populations reveals that there are differences in the frequency

Table #5
 Frequency of Types in the
 Leader Population (LP-H) and the Leader Subgroup
 Population of Academic and Senior Honor Students (H)

Type	Leader (LP-H)			Honor (H)		
	O_f	E_f	$(O_f - E_f)$	O_f	E_f	$(O_f - E_f)$
ISTJ	85	94.2	- 9.2	34	24.8	9.2
ISFJ	110	110.1	- 0.1	29	28.9	0.1
INFJ	57	63.4	- 6.4	23	16.6	6.4
INTJ	41	53.9	-12.9	27	14.1	12.9
ISTP	56	47.5	8.5	4	12.5	- 8.5
ISFP	72	64.1	7.9	9	16.9	- 7.9
INFP	63	75.2	-12.2	32	19.8	12.2
INTP	48	49.1	- 1.1	14	12.9	1.1
ESTP	49	42.8	6.2	5	11.2	- 6.2
ESFP	97	80.0	17.0	4	21.0	-17.0
ENFP	132	132.3	- 0.3	35	34.7	0.3
ENTP	60	53.9	6.1	8	14.1	- 6.1
ESTJ	107	98.2	8.8	17	25.8	- 8.8
ESFJ	105	111.7	- 6.7	36	29.3	6.7
ENFJ	83	86.3	- 3.3	26	22.7	3.3
ENTJ	57	59.4	- 2.4	18	15.6	2.4
Total	1222	1222.0		321	321.0	

of types for the leader population (LP-H) and the honor students subgroup (H). The leader population (LP-H) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTP (8.5), ISFP (7.9), ESTP (6.2), ESFP (17.0), ENTP (6.1), and ESTJ (8.8). The honor students subgroup (H) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (9.2), ISFJ (0.1), INFJ (6.4), INTJ (12.9), INFP (12.2), INTP (1.1), ENFP (0.3), ESFJ (6.7), ENFJ (3.3), and ENTJ (2.4).

The largest observed frequency for leader population (LP-H) includes ENFP (132), ISFJ (110), ESTJ (107), and ESFJ (105). The greatest differences between the observed frequency and the expected frequency for the leader population include ESFP (17.0), ESTJ (8.8), ISTP (8.5), INTJ (-12.9), and INFP (-12.2). The types that show the greatest statistical over-representation in the leader population (LP-H) are ESFP, ESTJ, and ISTP. The types that show the greatest statistical under-representation are INTJ and INFP.

The largest observed frequency for the honor students subgroup (H) includes ESFJ (36), ENFP (35), ISTJ (34), and INFP (32). The largest differences between the observed frequency and the expected frequency for the honor students subgroup include INTJ (12.9), INFP (12.2), ESFP (-17.0), ESTJ (-8.8), and ISTP (-8.5). The types that show the greatest statistical over-representation in the honor students subgroup (H) are INTJ and INFP. The types that show the

greatest statistical under-representation are ESFP, ESTJ, and ISTP.

Chi-square was calculated to determine the statistical level of confidence for the differences in the frequency of types for these two populations. The chi-square value for the leader population (LP-H) and the honor students subgroup (H) is 75.7 at 15 degrees of freedom. The relationship between the variables in these two populations is statistically significant at the .001 level of confidence (37.697). The relationship between the variables appears to describe real differences between the frequency of types in the two populations rather than chance differences.

Hypothesis #2D is accepted. There are statistically significant differences between the frequency of types in the leader population (LP-H) and the leader subgroup of academic and senior honor students (H). The chi-square value of 75.7 is statistically significant at the .001 level of confidence. The leader population (LP-H) tends to be over-represented by ESFP, ESTJ, and ISTP. The leader subgroup of honor students (H) tends to be over-represented by INTJ and INFP. These differences have a high level of confidence and do not appear to be the result of chance or sampling error.

Hypothesis #2E

The sixth area of investigation involves the relationship between the frequency types in the leader population and

the leader subgroup of Resident Assistants. Hypothesis #2E states that there will be statistically significant differences in the frequency of types in the leader population (LP-R) and the leader subgroup of Resident Assistants (R). Table #6 lists the data pertaining to this hypothesis.

The leader population (LP-R) includes 1407 subjects, while the leader subgroup of Resident Assistants (R) includes 136 subjects. The Resident Assistants (R) represent 8.8% of the total leader population (LP).

A comparison of the frequency of types for the two populations reveals that there are differences in the frequency of types for the populations. The leader population (LP-R) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (5.5), INFJ (4.1), INTJ (3.0), ISTP (2.3), ISFP (1.1), INFP (4.4), INTP (4.5), ESTP (0.8), ESFP (2.9), ENTP (2.0), and ESTJ (3.9). The Resident Assistant subgroup (R) is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISFJ (3.7), ENFP (3.3), ESFJ (14.6), ENFJ (7.4), and ENTJ (5.4).

The largest observed frequency for the leader population (LP-R) includes ENFP (149), ISFJ (123), ESTJ (117), ISTJ (114), and ESFJ (114). The greatest differences between the observed frequency and the expected frequency for the leader population (LP-R) include ISTJ (5.5), INTP (4.5), INFP (4.4), ESFJ (-14.6), ENFJ (-7.4), and ENTJ (-5.4).

Table #6
 Frequency of Types in the
 Leader Population (LP-R) and the Leader Subgroup
 Population of Resident Assistants (R)

Type	Leader (LP-R)			Resident Assistants (R)		
	O _f	E _f	(O _f -E _f)	O _f	E _f	(O _f -E _f)
ISTJ	114	108.5	5.5	5	10.5	- 5.5
ISFJ	123	126.7	- 3.7	16	12.3	3.7
INFJ	77	72.9	4.1	3	7.1	- 4.1
INTJ	65	62.0	3.0	3	6.0	- 3.0
ISTP	57	54.7	2.3	3	5.3	- 2.3
ISFP	75	73.9	1.1	6	7.1	- 1.1
INFP	91	86.6	4.4	4	8.4	- 4.4
INTP	61	56.5	4.5	1	5.5	-4.5
ESTP	50	49.2	0.8	4	4.8	- 0.8
ESFP	95	92.1	2.9	6	8.9	- 2.9
ENFP	149	152.3	- 3.3	18	14.7	3.3
ENTP	64	62.0	2.0	4	6.0	- 2.0
ESTJ	117	113.1	3.9	7	10.9	- 3.9
ESFJ	114	128.6	-14.6	27	12.4	14.6
ENFJ	92	99.4	-7.4	17	9.6	7.4
ENTJ	63	68.4	- 5.4	12	6.6	5.4
Total	1407	1407.0		136	136.0	

The types that show the greatest statistical over-representation in the leader population (LP-R) are ISTJ, INTP, and INFP. The types that show the greatest statistical under-representation are ESFJ, ENFJ, and ENTJ.

The largest observed frequency for the Resident Assistant subgroup (R) includes ESFJ (27), ENFP (18), ENFJ (17), ISFJ (16), and ENTJ (12). The largest differences between the observed frequency and the expected frequency for the Resident Assistants (R) include ESFJ (14.6), ENFJ (7.4), ENTJ (5.4), ISTJ (-5.5), INTP (-4.5), and INFP (-4.4). The types that show the greatest statistical over-representation in the Resident Assistant subgroup (R) are ESFJ, ENFJ, and ENTJ. The types that show the greatest statistical under-representation are ISTJ, INTP, and INFP.

Chi-square analysis was used to determine whether these differences in the frequency of types were statistically significant. The chi-square value for the leader population (LP-R) and the leader subgroup of Resident Assistants (R) is 50.7 at 15 degrees of freedom. This chi-square value is significant at the .001 level of confidence (37.697). The relationship between the variables in these two populations appears to describe real differences in the frequency of types and not to be the result of chance of sampling error.

Hypothesis #2E is accepted. There are statistically significant differences between the frequency of types for the two populations at the .001 level of confidence.

The relationship between the variables does not appear to be the result of chance or sampling error. The leader population (LP-R) tends to be over-represented by ISTJ, INTP, and INFP. The Resident Assistant subgroup (R) tends to be over-represented by ESFJ, ENFJ, and ENTJ.

Hypothesis #2F

The seventh area of investigation involves the relationship between the frequency of types in the leader population and the leader subgroup of student government leaders. Hypothesis #2F states that there will be statistically significant differences in the frequency of types in the leader population (LP-S) and the leader subgroup of student government leaders (S). Table #7 lists the data that pertains to this hypothesis.

The leader population (LP-S) includes 1442 subjects, while the leader subgroup of student government leaders (S) includes 101 subjects. The student government leader subgroup (S) represents 6.5% of the entire leader population (LP).

A comparison of the frequency of types for the leader population (LP-S) and the leader subgroup of student government leaders (S) shows that there are differences in the frequency of types in the two populations. The leader population is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (0.8), ISFJ (4.1), INFJ (3.2), INTJ (1.5), ISTP (1.9), INFP (1.2), ESTP (0.5),

Table #7
 Frequency of Types in the
 Leader Population (LP-S) and the Leader Subgroup
 Population of Student Government Leaders (S)

Type	Leader (LP-S)			Government (S)		
	O _f	E _f	(O _f -E _f)	O _f	E _f	(O _f -E _f)
ISTJ	112	111.2	0.8	7	7.8	- 0.8
ISFJ	134	129.9	4.1	5	9.1	- 4.1
INFJ	78	74.8	3.2	2	5.2	- 3.2
INTJ	65	63.5	1.5	3	4.5	- 1.5
ISTP	58	56.1	1.9	2	3.9	- 1.9
ISFP	75	75.7	- 0.7	6	5.3	0.7
INFP	90	88.8	1.2	5	6.2	- 1.2
INTP	56	57.9	- 1.9	6	4.1	1.9
ESTP	51	50.5	0.5	3	3.5	- 0.5
ESFP	96	94.4	1.6	5	6.6	- 1.6
ENFP	158	147.7	10.3	9	19.3	-10.3
ENTP	60	63.5	- 3.5	8	4.5	3.5
ESTJ	116	115.9	0.1	8	8.1	- 0.1
ESFJ	114	131.8	- 17.8	27	9.2	17.8
ENFJ	98	101.9	- 3.9	11	7.1	3.9
ENTJ	71	70.1	0.9	4	4.9	- 0.9
Total	1442	1442.0		101	101.0	

ESFP (1.6), ENFP (10.3), ESTJ (0.1), and ENTJ (0.9). The student government leader subgroup is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISFP (0.7), INTP (1.9), ENTP (3.5), ESFJ (17.8), and ENFJ (3.9).

The largest observed frequency for the leader population (LP-S) includes ENFP (158), ISFJ (134), ESTJ (116), ESFJ (114), and ISTJ (112). The greatest differences between the observed frequency and the expected frequency for the leader population (LP-S) includes ENFP (10.3), ISFJ (4.1), and ESFJ (-17.8). The types that show the greatest statistical over-representation are ENFP and ISFJ. The type that shows the greatest statistical under-representation is ESFJ.

The largest observed frequency for the student government leader subgroup (S) includes ESFJ (27) and ENFJ (11). The greatest differences between the observed frequency and the expected frequency for the student government leaders (S) include ESFJ (17.8), ENFP (-10.3), and ISFJ (-4.1). The type that shows the greatest statistical over-representation in the student government leader subgroup is ESFJ. The types that show the greatest statistical under-representation are ENFP and ISFJ.

Chi-square analysis was used to determine statistical significance of the differences in the frequency of types for these two populations. The chi-square value for the

leader population (LP-S) and the leader subgroup of student government leaders (S) is 55.9. At 15 degrees of freedom the relationship between the variables in these populations is statistically significant at the .001 level of confidence (37.697). The differences between the frequency of types for these populations appear to be significant and not the result of chance or sampling error.

Hypothesis #2F is accepted. There are statistically significant differences between the frequency of types for the leader population (LP-S) and the leader subgroup of student government leaders (S) at the .001 level of confidence. The leader population (LP-S) tends to be over-represented by ENFP and ISFJ. The student government leader subgroup (S) tends to be over-represented by ESFJ.

Hypothesis #3

The final area of investigation involves the relationship between the frequency of types in the male leader and female leader populations. Hypothesis #3 states that there will be statistically significant differences between the frequency of types in the male leader and female leader populations. Table #8 lists the data that pertains to this hypothesis.

The male leader population includes 966 subjects, while the female leader population includes 577 subjects. The male leader population represents 62.6% of the total leader population, while the female leader population represents 37.4% of the total leader population.

Table #8

Frequency of Types in the
the Male Leader Population and the
Female Leader Population

Type	<u>Male Leader</u>			<u>Female Leader</u>		
	O_f	E_f	$(O_f - E_f)$	O_f	E_f	$(O_f - E_f)$
ISTJ	95	74.5	20.5	24	44.5	-20.5
ISFJ	91	87.0	4.0	48	52.0	- 4.0
INFJ	41	50.1	- 9.1	39	29.9	9.1
INTJ	43	42.6	0.4	25	25.4	- 0.4
ISTP	44	37.6	6.4	16	22.4	- 6.4
ISFP	55	50.7	4.3	26	30.3	- 4.3
INFP	58	59.5	- 1.5	37	35.5	1.5
INTP	47	38.8	8.2	15	23.2	- 8.2
ESTP	39	33.8	5.2	15	20.2	- 5.2
ESFP	72	63.2	8.8	29	37.8	- 8.8
ENFP	83	104.6	-21.6	84	62.4	21.6
ENTP	46	42.6	3.4	22	25.4	- 3.4
ESTJ	79	77.6	1.4	45	46.4	- 1.4
ESFJ	72	88.3	-16.3	69	52.7	16.3
ENFJ	55	68.2	-13.2	54	40.8	13.2
ENTJ	46	47.0	- 1.0	29	28.0	1.0
Total	966	966.0		577	577.0	

A comparison of the frequency of types for the male and female leader populations reveals that there are differences in the frequency of types for the two populations. The male leader population is represented by a greater observed frequency (O_f) than expected frequency (E_f) for ISTJ (20.5), ISFJ (4.0), INTJ (0.4), ISTP (6.4), ISFP (4.3), INTP (8.2), ESTP (5.2), ESFP (8.8), ENTP (3.4), and ESTJ (1.4). The female leader population is represented by a greater observed frequency (O_f) than expected frequency (E_f) for INFJ (9.1), INFP (1.5), ENFP (21.6), ESFJ (16.3), ENFJ (13.2), and ENTJ (1.0).

The largest observed frequency of types for the male leader population includes ISTJ (95), ISFJ (91), and ENFP (83). The greatest differences between the observed and expected frequency for the male leader population include ISTJ (20.5), ESFP (8.8), INTP (8.2), ENFP (-21.6), ESFJ (-16.3), ENFJ (-13.2), and INFJ (-9.1). The types that show the greatest statistical over-representation in the male leader population are ISTJ, ESFP, and INTP. The types that show the greatest statistical under-representation are ENFP, ESFJ, ENFJ, and INFJ.

The largest observed frequency of types for the female leader population includes ENFP (84), ESFJ (69), and ENFJ (54). The greatest differences between the observed frequency and the expected frequency for the female leader population include ENFP (21.6), ESFJ (16.3), ENFJ (13.2), INFJ (9.1),

ISTJ (-20.5), ESFP (-8.8), and INTP (-8.2). The types that show the greatest statistical over-representation in the female leader population are ENFP, ESFJ, ENFJ, and INFJ. The types that show the greatest statistical under-representation are ISTJ, ESFP, and INTP.

Chi-square analysis was used to determine statistical significance for the differences in the frequency of types in the two populations. The chi-square value for the male leader and female leader populations is 61.7. This chi-square value is statistically significant at the .001 level of confidence with 15 degrees of freedom. The differences between the frequency of types in these two populations appear to be significant and not the result of chance or sampling error.

Hypothesis #3 is accepted. There are statistically significant differences between the frequency of types for the male leader and female leader populations at the .001 level of confidence. The male leader population tends to be over-represented by ISTJ, ESFP, and INTP. The female leader population tends to be over-represented by ENFP, ESFJ, ENFJ, and INFJ.

Summary

The results of the data collection and statistical analysis will be summarized for each hypothesis. Each hypothesis will be evaluated and described individually.

Hypothesis #1

Hypothesis #1 states that there will be statistically significant differences in the frequency of types in the leader and non-leader populations. This hypothesis is accepted. Differences in the frequency of types in the two populations are statistically significant at the .001 level of confidence. The leader population tends to be over-represented by ESFP, ESTJ, and ESFJ. The non-leader population tends to be over-represented by INFP and INFJ.

Hypothesis #2A

Hypothesis #2A states that there will be statistically significant differences in the frequency of types in the leader population (LP-A) and the leader subgroup of intercollegiate varsity athletes (A). This hypothesis is accepted. Differences in the frequency of types in the two populations are statistically significant at the .001 level of confidence. The leader population (LP-A) tends to be over-represented by ISFJ, ISTJ, and INFJ. The leader subgroup of intercollegiate varsity athletes (A) tends to be over-represented by ESFP and ESTJ.

Hypothesis #2B

Hypothesis #2B states that there will be statistically significant differences in the frequency of types in the leader population (LP-C) and the leader subgroup of communications leaders (C). This hypothesis is rejected. Differences in the frequency of types in the two populations are not statistically significant at the .001 level of confidence.

Differences in the frequency of types in the two populations may be the result of chance or sampling error.

Hypothesis #2C

Hypothesis #2C states that there will be statistically significant differences in the frequency of types in the leader population (LP-G) and the leader subgroup of fraternity/sorority leaders (G). This hypothesis is rejected. Differences in the frequency of types in the two populations are not statistically significant at the .001 level of confidence. Differences in the frequency of types in the two populations may be the result of chance or sampling error.

Hypothesis #2D

Hypothesis #2D states that there will be statistically significant differences in the frequency of types in the leader population (LP-H) and the leader subgroup of academic and senior honor students (H). This hypothesis is accepted. Differences in the frequency of types in the two populations are statistically significant at the .001 level of confidence. The leader population (LP-H) tends to be over-represented by ESFP, ESTJ, and ISTP. The leader subgroup of academic and senior honor students (H) tends to be over-represented by INTJ and INFP.

Hypothesis #2E

Hypothesis #2E states that there will be statistically significant differences in the frequency of types in the leader population (LP-R) and the leader subgroup of Resident

Assistants (R). This hypothesis is accepted. Differences in the frequency of types in the two populations are statistically significant at the .001 level of confidence. The leader population (LP-R) tends to be over-represented by ISTJ, INTP, and INFP. The leader subgroup of Resident Assistants (R) tends to be over-represented by ESFJ, ENFJ, and ENTJ.

Hypothesis #2F

Hypothesis #2F states that there will be statistically significant differences in the frequency of types in the leader population (LP-S) and the leader subgroup of student government leader (S). This hypothesis is accepted. Differences in the frequency of types in the two populations are statistically significant at the .001 level of confidence. The leader population (LP-S) tends to be over-represented by ENFP and ISFJ. The leader subgroup of student government leader (S) tends to be over-represented by ESFJ.

Hypothesis #3

Hypothesis #3 states that there will be statistically significant differences in the frequency of types in the male leader and the female leader populations. This hypothesis is accepted. Differences in the frequency of types in the two populations are statistically significant at the .001 level of confidence. The male leader population tends to be over-represented by ISTJ, ESFP, and INTP. The female leader population tends to be over-represented by ENFP,

ESFJ, ENFJ, and INFJ.

Chapter 5

Summary, Conclusions, and Recommendations

Chapter 5 contains a summary of the findings for each hypothesis. On the basis of these findings conclusions will be made, implications will be discussed, and recommendations for further study will be suggested.

Summary

The purpose of this study was to describe the Jungian psychological types of leaders and non-leaders at a private liberal arts college. The Myers-Briggs Type Indicator (MBTI) was used to investigate the following questions:

1. Are there differences between the leader and non-leader populations with regard to frequency of psychological type?
2. Are there differences between the leader population and the six leader subgroup populations with regard to the frequency of psychological types?
3. Are there differences between male and female leaders with regard to frequency of psychological types?

The hypotheses of this study were formulated to investigate these questions. Expected frequencies and chi-square values were calculated to determine relationship between the variables and statistical significance. The .001 level of confidence was chosen to determine statistical significance because

of the large sample size and its influence on chi-square values.

A summary of the hypotheses and the findings are listed for each individual hypothesis.

Hypothesis #1

Hypothesis #1 states that there will be statistically significant differences in the frequency of types in the leader and non-leader populations. This hypothesis was accepted. There were statistically significant differences in the frequency of types for the two populations at the .001 level of confidence. The leader population tended to be statistically over-represented by ESFP, ESTJ, and ESFJ. The non-leader population tended to be statistically over-represented by INFP and INFJ.

Hypothesis #2A

Hypothesis #2A states that there will be statistically significant differences in the frequency of types in the leader population (LP-A) and the leader subgroup of inter-collegiate varsity athletes (A). This hypothesis was accepted. There were statistically significant differences in the frequency of types for the two populations at the .001 level of confidence. The leader population (LP-A) tended to be statistically over-represented by ISFJ, ISTJ, and INFJ. The athlete subgroup (A) tended to be statistically over-represented by ESFP and ESTJ.

Hypothesis #2B

Hypothesis #2B states that there will be statistically significant differences in the frequency of types in the leader population (LP-C) and the leader subgroup of communications leaders (C). This hypothesis was rejected. There were differences in the frequency of types for the two populations, but they were not statistically significant at the .001 level of confidence. These differences may have resulted from chance or sampling error.

Hypothesis #2C

Hypothesis #2C states that there will be statistically significant differences in the frequency of types in the leader population (LP-G) and the leader subgroup of fraternity and sorority leaders (G). This hypothesis was rejected. There were differences in the frequency of types for the two populations, but they were not statistically significant at the .001 level of confidence. These differences may have resulted from chance or sampling error.

Hypothesis #2D

Hypothesis #2D states that there will be statistically significant differences in the frequency of types in the leader population (LP-H) and the leader subgroup of academic and senior honor students (H). This hypothesis was accepted. There were statistically significant differences in the frequency of types for the two populations at the .001 level of confidence. The leader population (LP-H) tended to be statistically over-represented by ESFP, ESTJ, and

ISTP. The honor student subgroup (H) tended to be statistically over-represented by INTJ and INFP.

Hypothesis #2E

Hypothesis #2E states that there will be statistically significant differences in the frequency of types in the leader population (LP-R) and the leader subgroup of Resident Assistants (R). This hypothesis was accepted. There were statistically significant differences in the frequency of types for the two populations at the .001 level of confidence. The leader population (LP-R) tended to be statistically over-represented by ISTJ, INTP, and INFP. The Resident Assistant subgroup (R) tended to be statistically over-represented by ESFJ, ENFJ, and ENTJ.

Hypothesis #2F

Hypothesis #2F states that there will be statistically significant differences in the frequency of types in the leader population (LP-S) and the leader subgroup of student government leaders (S). This hypothesis was accepted. There were statistically significant differences in the frequency of types for the two populations at the .001 level of confidence. The leader population (LP-S) tended to be statistically over-represented by ENFP and ISFJ. The student government leader subgroup (S) tended to be statistically over-represented by ESFJ.

Hypothesis #3

Hypothesis #3 states that there will be statistically significant differences in the frequency of types in the male leader and female leader populations. This hypothesis was accepted. There were statistically significant differences in the frequency of types for the two populations at the .001 level of confidence. The male leader population tended to be statistically over-represented by ISTJ, ESFP, and INTP. The female leader population tended to be statistically over-represented by ENFP, ESFJ, ENFJ, and INFJ.

Table #9 lists a summary of the findings of this study. Types that were statistically over-represented and under-represented in the populations are listed by hypothesis. The differences between the observed frequency (O_f) and the expected frequency (E_f) are listed with the types. The level of statistical confidence for each hypothesis is also included in this table.

These findings are limited by the nature of this research study. As a descriptive study, these findings are descriptive of "what is" rather than explanations of "how" or "why." The findings are limited by the specialized population of college students who were studied. And finally, the findings are limited by the data gathering process. Any application of these findings to student leaders in other settings must be carefully examined in the light of these limitations.

Table #9

Comparison of Over-Representative and
Under-Representative Types for the
Populations Described in This Study

<u>Population</u>	<u>Over - Representation</u>		<u>Under - Representation</u>		<u>Level of Confidence</u>
Non-Leaders	INFP (38.6)	INFJ (17.7)	ESFP (-23.3)	ESTJ (-20.2)	.001
			ESFJ (-17.2)		
Leaders	ESFP (23.3)	ESTJ (20.2)	INFJ (-38.6)	INFJ (-17.7)	
	ESFJ (17.2)				
Leaders (LP-A)	ISFJ (9.3)	ISTJ (8.9)	ESFP (-17.3)	ESTJ (- 9.0)	.001
	INFJ (8.7)				
Athletes (A)	ESFP (17.3)	ESTJ (9.0)	ISFJ (- 9.3)	ISTJ (- 8.9)	
			INFJ (- 8.7)		
Leaders (LP-C)	ESTJ (6.2)	INFP (4.6)	ENFP (- 6.6)	INFJ (- 3.0)	.200
Communications Leaders (C)	ENFP (6.6)	INFJ (3.0)	ESTJ (- 6.2)	INTP (- 4.6)	
Leaders (LP-G)	ENFP (12.1)	ISTP (4.1)	ESTJ (- 5.7)	INTP (- 5.4)	.700
			ISFJ (- 4.0)		
Fraternity and Sorority Leaders (G)	ESTJ (5.7)	INFP (5.4)	ENFP (-12.1)	ISTP (- 4.1)	
	ISFJ (4.0)				
Leaders (LP-H)	ESFP (17.0)	ESTJ (8.8)	INTJ (-12.9)	INFP (-12.2)	.001
	ISTP (8.5)				
Academic and Senior Honor Students (H)	INTJ (12.9)	INFP (12.2)	ESFP (-17.0)	ESTJ (- 8.8)	
			ISTP (- 8.5)		

Table #9

Comparison of Over-Representative and
Under-Representative Types for the
Populations Described in This Study

(Continued)

<u>Population</u>	<u>Over - Representation</u>	<u>Under - Representation</u>	<u>Level of Confidence</u>
Leaders (LP-R)	ISTJ (5.5)	ESFJ (-14.6)	.001
	INTP (4.5)	ENFJ (- 7.4)	
	INFP (4.4)	ENTJ (- 5.4)	
Resident Assistants (R)	ESFJ (14.6)	ISTJ (- 5.5)	.001
	ENFJ (7.4)	INTP (- 4.5)	
	ENTJ (5.4)	INFP (- 4.4)	
Leaders (LP-S)	ENFP (10.3)	ESFJ (-17.8)	.001
	ISFJ (4.1)		
Government Leaders (S)	ESFJ (17.8)	ENFP (-10.3)	.001
		ISFJ (- 4.1)	
Male Leaders	ISTJ (20.5)	ENFP (-21.6)	.001
	ESFP (8.8)	ESFJ (-16.3)	
	INTP (8.2)	ENFJ (-13.2)	
		INFJ (- 9.1)	
Female Leaders	ENFP (21.6)	ISTJ (-20.5)	.001
	ESFJ (16.3)	ESFP (- 8.8)	
	ENFJ (13.2)	INTP (- 8.2)	
	INFJ (9.1)		

Conclusions

The findings of this study reveal that there were statistically significant differences in the frequency of types in some of the populations described. There were statistically significant differences in the frequency of types for leaders and non-leaders; for leaders (LP-) and some subgroup leaders; and for male leaders and female leaders. These general findings form a basis for the following specific conclusions.

1. There were statistically significant differences in the frequency of types for the leader and non-leader populations. The leader population tended to be statistically over-represented by ESFP, ESTJ, and ESFJ, and statistically under-represented by INFP and INFJ. The non-leader population tended to be statistically over-represented by INFP and INFJ, and statistically under-represented by ESFP, ESTJ, and ESFJ.

In the leader population, types that showed the greatest statistically over-represented tended to be extraverted (E) and sensing (S). Extraverted types (E) tend to be oriented toward the outer world of actions, objects, and people. Sensing types (S) tend to be practical, present-oriented, and aware of details.

In the non-leader population, types that showed the greatest statistically over-represented tended to be introverted

(I) and intuitive (N). Introverted types (I) tend to be oriented toward the inner world of ideas and concepts. Intuitive types (N) tend to be idealistic, future-oriented, and aware of possibilities.

While the findings of this study suggest that specific types are statistically over-represented in the leader and non-leader populations, the findings do not suggest that all leaders or non-leaders are identified with these types. All of the types are represented in both populations, some are statistically over-represented and others are statistically under-represented.

2. There were statistically significant differences in the frequency of types for some of the leader subgroup populations and the rest of the leader population (LP-). Statistically significant differences in the frequency of types were found in the leader subgroups of intercollegiate varsity athletes (A), academic and senior honor students (H), Resident Assistants (R), and student government leaders (S). Statistically significant differences in the frequency of types were not found in the leader subgroups of communications leaders (C) and fraternity and sorority leaders (G).

There were statistically significant differences in the frequency of types for intercollegiate varsity athletes (A) and the rest of the leader population (LP-A). The athletes (A) tended to be statistically over-represented

by ESFP and ESTJ, and statistically under-represented by ISFJ, ISTJ, and INFJ. The rest of the leader population (LP-A) tended to be statistically over-represented by ISFJ, ISTJ, and INFJ, and statistically under-represented by ESFP and ESTJ.

In the varsity athlete subgroup (A), types that showed the greatest statistically over-represented tended to be extraverted (E). Extraverted types (E) tend to be oriented toward the outer world of actions, objects, and people.

There were statistically significant differences in the frequency of types for academic and senior honor students (H) and the rest of the leader population (LP-H). The honor students (H) tended to be statistically over-represented by INTJ and INFP, and statistically under-represented by ESFP, ESTJ, and ISTP. The rest of the leader population (LP-H) tended to be statistically over-represented by ESFP, ESTJ, and ISTP, and statistically under-represented by INTJ and INFP.

In the honor student subgroup (H), types that showed the greatest statistically over-represented tended to be introverted (I) and intuitive (N). Introverted types (I) tend to be oriented toward the inner world of ideas and concepts. Intuitive types (N) tend to be idealistic, future-oriented, and aware of possibilities.

There were statistically significant differences in the frequency of types for the Resident Assistants (R)

and the rest of the leader population (LP-R). The Resident Assistants (R) tended to be statistically over-represented by ESFJ, ENFJ, and ENTJ, and statistically under-represented by ISTJ, INTP, and INFP. The rest of the leader population (LP-R) tended to be statistically over-represented by ISTJ, INTP, and INFP, and statistically under-represented by ESFJ, ENFJ, and ENTJ.

In the Resident Assistant subgroup (R), types that showed the greatest statistically over-represented tended to be extraverted (E) and judging (J). Extraverted types (E) tend to be oriented toward the outer world of actions, objects, and people. Judging (J) types tend to be organized, decisive, and controlling.

There were statistically significant differences in the frequency of types for the student government leaders (S) and the rest of the leader population (LP-S). The student government leaders (S) tended to be statistically over-represented by ESFJ, and statistically under-represented by ENFP and ISFJ. The rest of the leader population (LP-S) tended to be statistically over-represented by ENFP and ISFJ, and statistically under-represented by ESFJ.

In the student government leader subgroup (S), the type that showed the greatest statistically over-represented was extraverted (E), sensing (S), feeling (F), and judging (J). ESFJ is Extraverted Feeling with Sensing as auxiliary. This type tends to be "warm-hearted, talkative, popular,

conscientious, born cooperators, active committee members ... Main interest is in things that directly and visibly affect people's lives." (Myers, 1962, p. 7)

3. There were statistically significant differences in the frequency of types for the male leader and female leader populations. The male leader population tended to be statistically over-represented by ISTJ, ESFP, and INTP, and statistically under-represented by ENFP, ESFJ, ENFJ, and INFJ. The female leader population tended to be statistically over-represented by ENFP, ESFJ, ENFJ, and INFJ, and statistically under-represented by ISTJ, ESFJ, and INTP.

In the male leader population, types that showed the greatest statistically over-represented did not tend to have any consistent type characteristics.

In the female leader population, types that showed the greatest statistically over-represented tended to be feeling (F). Feeling types (F) tend to be subjective in their decision making, have a personal set of values, and be concerned about how decisions affect the feelings of others.

Implications

The findings of this study further demonstrate that there are identifiable personality differences between leaders and non-leaders; leaders and some subgroup leaders; and male leaders and female leaders. These findings have

several implications for counselors, educators, and researchers who are interested in understanding college student leaders and who are interested in helping them to reach their full potential as individuals, leaders, and citizens.

The first implication of this study is that the Myers-Briggs Type Indicator (MBTI) and Jungian psychological type theory are useful and helpful tools for understanding type characteristics in college student populations. The MBTI has been used to study college students in the past, but only a few of these studies have investigated type characteristics of student leaders.

Studies using the MBTI to investigate type characteristics of college student leaders have been conducted by Wortuba (1969), Tyler (1968), and Stalcup (1967). These studies are very different in purpose and design from this study but there are some general similarities in the findings of these studies.

Wortuba (1969) found that Resident Assistants (RAs) tended to prefer intuition (N) and feeling (F). The Resident Assistants (R) in this study also preferred intuition (N) and feeling (F), although these preferences were not statistically significant. 72 of the 136 Resident Assistants (R) preferred intuition (N) and 97 of the 136 Resident Assistants (R) preferred feeling (F) in this study.

Tyler (1968) found that there were significant larger numbers of introverts (I) and intuitives (N) in a sample

of National Merit students than in a comparison group of liberal arts students. The honor students (H) in this study also preferred introversion (I) and intuition (N). 172 of the 321 honor students (H) preferred introversion (I) and 183 of the 321 honor students (H) preferred intuition (N) in this study.

Stalcup (1967) found that the highest percentages of types for students who participated in selected student activities and organizations were ESFJ, ISFJ, ENFP, and ESTJ. The types that had the largest observed frequency (O_f) for the leader population in this study were ENFP (210), INFP (192), ISTJ (163), and ISFJ (155).

The similarities between the findings of this study and the findings of previous studies are not conclusive, but they do suggest that type theory and the MBTI may be useful tools in the future research of college student leader characteristics. Hopefully, this study will encourage further research interest in the use of the MBTI with college student leaders.

The second implication of this study is that there is unity and diversity in the type makeup of various student leader populations and subgroups. The findings of this study suggest that there are types in a given population that are statistically over-represented and under-represented. Consequently, one must be careful about making general assumptions about type with reference to specific leader

groups. Even though specific types seem to be more prevalent or statistically over-represented in a population, other types may be represented in that population as well.

An understanding of type theory and the unity and diversity of type makeup in a specific group may help counselors and educators to more effectively communicate with, program for, and advise individual student leaders and student leader groups. McCaulley (1974) has used the MBTI to determine teaching-learning styles; Smith, Irey, and McCaulley (1973) have used the MBTI to aid in the design of a self-paced instruction course; Sloan (1982) has used the MBTI to aid in the design of a small group communications skills workshop; and Robyak and Patton (1977) have used the MBTI to aid in the evaluation of the effectiveness of a study skills course.

These studies suggest that type theory may have applications for the design of learning environments in which students are more effectively motivated to learn. Lawrence (1979) and Briggs Myers (1980) suggest that type effects the ways in which a person relates to people, situations, and information. Consequently, an understanding of the unity and diversity in the type makeup of a student group may help counselors and educators to better communicate with, program for, and advise members of that group.

The third implication of this study is that type theory has great potential for helping student leaders make important

connections between satisfaction and effectiveness in student leadership roles and future career choices. Astin (1977) suggested that extracurricular activities in college may be the foundation on which adult achievements are built. Leadership opportunities in college allow students to explore and grow in their understanding of leadership skills, styles, and roles. This understanding may provide important information for making decisions about future career choices.

Keirsey and Bates (1978), Briggs Myers (1980), and Pinkney (1983) have suggested that an understanding of a person's type may be helpful in career counseling. The proper match of type and career environment may provide greater satisfaction for the individual.

These implications suggest that the MBTI has great potential for the counselor, educator, and/or researcher. This potential must be carefully channeled by sound research and careful application. The MBTI appears to have a bright future as a tool for understanding, but much more needs to be learned about type theory before the MBTI will be able to realize its full potential.

Recommendations

Very few studies using the MBTI with college student leaders have been conducted in the past. Further research is needed to help determine the importance of this study. Recommendations for further research include the following:

1. the replication of this study at Franklin and Marshall College over the next several years. This type of study would help to establish the validity of the findings of this study;

2. the replication of this study at other private liberal arts colleges. This type of study would help to verify whether or not the findings of this study have any validity for student leaders at private liberal arts colleges in general.

3. the replication of this study at other types of colleges and universities. This type of study would help to verify whether or not the findings of this study have any validity for student leaders at other types of colleges and universities; and

4. the study of the relationship between psychological type and vocational type. A correlational study using the Myers-Briggs Type Indicator (MBTI) and the Strong Vocational Interest Blank (SVIB) could be developed to determine the relationship between a student leader's psychological type and his/her vocational types.

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ABSTRACT

DIFFERENCES IN THE PSYCHOLOGICAL TYPES OF STUDENT LEADERS AND NON-LEADERS AT A PRIVATE LIBERAL ARTS COLLEGE

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The College of William and Mary in Virginia, 1984

Chairman: Charles O. Matthews, Ph.D.

The purpose of this study was to describe the psychological types of student leaders and non-leaders at a private liberal arts college. The aim of this study was to determine whether there were statistically significant differences in the frequency of types for leaders and non-leaders, for leaders and subgroup leaders, and for male leaders and female leaders. The theoretical rationale for this investigation is based upon the psychological type theories of Carl Jung (1933, 1971) and Isabel Briggs Myers (1962, 1980).

The Myers-Briggs Type Indicator (MBTI) was given to freshmen at Franklin and Marshall College during freshmen orientation from 1976 through 1982. These subjects were identified as leaders or non-leaders on the basis of leadership involvement in one or more of six leader subgroups. These leader subgroups included intercollegiate varsity athletes, communications leaders, fraternity and sorority leaders, academic and senior honor students, Resident Assistants, and student government leaders.

Three hypotheses were formulated to address the purpose and aim of this study. Hypothesis #1 investigated the differences in the frequency of types for the leader and non-leader populations. Hypothesis #2 investigated the differences between the leader subgroups and the rest of the leader population. Hypothesis #3 investigated the differences in the frequency of types for the male leader population and the female leader population. Expected frequencies and chi-square analysis were used to determine statistical differences and statistical significances for the data.

The results of the study suggest that there are statistically significant differences in the frequency of types for the leader and non-leader populations, for the leader population and the leader subgroup populations, and for the male leader population and the female leader population.