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THE RELATIONSHIP BETWEEN TRAIT ANXIETY AND  
PERSONALITY TYPE AS MEASURED  
BY THE MYERS-BRIGGS  
TYPE INDICATOR

A Thesis  
by  
GORDON D. SCHNEIDER

Submitted to the Graduate School  
Appalachian State University  
in partial fulfillment of the requirements for  
the degree of  
MASTER OF ARTS

August 1982

Major Department: Psychology

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ABSTRACT

THE RELATIONSHIP BETWEEN TRAIT ANXIETY AND  
PERSONALITY TYPE AS MEASURED

BY THE MYERS-BRIGGS

TYPE INDICATOR. (August 1982)

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The purpose of this paper was to reveal any relatedness between the Myers-Briggs Type Indicator and the State-Trait Anxiety Inventory in college students. The subjects in this study were 163 volunteers (89 females and 74 males) enrolled in introductory psychology courses at Appalachian State University. The students were given the STAI during class time and the MBTI at a later time outside of class. The results from the STAI were interpreted according to normative data and both the dichotomous type category scores and the continuous scores from the MBTI were utilized in the analysis. The Statistical Package for the Social Sciences computer package was used to obtain frequencies of the different anxiety levels (high, medium and low) and the different personality

types. Cross-tabulation, multiple regression and factor analysis consistently revealed that the extraversion-introversion dimension of the MBTI is related to the trait anxiety score of the STAI, where the high anxious tended to be introverted and the low anxious tended to be extraverted. A possible explanation for this relationship was that there appeared to be a commonality of question content within the two tests. The items that indicated introversion and the items that indicated a higher level of anxiety may have reflected the person's tendency to ruminate. There may be a lack of items on the STAI A-trait that measure a higher level of anxiety in extraverts. Another explanation might be that the introverts tend to keep their emotions and feelings "bottled up inside" and since they do not ventilate these feelings, a build-up occurs which results in a higher level of anxiety.

## ACKNOWLEDGEMENTS

I would like to acknowledge the constructive criticism and assistance given to me by my thesis committee, Dr. Joan W. Walls, Chairperson; Dr. Frank R. Terrant, Jr., and Dr. Susan D. Moss. Also, Dr. Joyce V. Lawrence, Dean of the Graduate School, gave helpful advice and support towards this endeavor.

Special thanks go to Becky Brookshire, and her son Jeremy, for their tolerance and constant support which helped me to maintain sufficient motivation to complete this task. Last, but not least, thanks to my typist, Pauline Harrison, for her ability and expertise in typing this paper.

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## INTRODUCTION

Instrumental to the development of a personality test is the research devoted to the reliability and validity assessment of the test. One technique utilized in the assessment of a test's validity consists of comparing it with another test that is believed to accurately measure the purposed objectives. Another technique is to observe differences between special clinical populations that are presumed to vary in particular ways. One of the most widely tested populations is the college student. Above average intellectual ability and easy accessibility are two chief reasons for using this population. Although abundant research is currently in progress, further efforts to refine and expand what is known about the relationship between specific tests, traits and personality characteristics in the college population is unequivocally required.

### Myers-Briggs Type Indicator

One test used extensively with normal populations is the Myers-Briggs Type Indicator (MBTI). The MBTI is a self-report inventory specifically designed to assign people to preferred type categories, essentially those types suggested by psychologist Carl Jung. His



typology concentrated on man's orientation toward the world and man's preferred method of functioning in the world (Jung, 1923). Jung's theory asserted that people approach life in diversified ways, and that although much of the variation in human behavior appears fortuitous, it is actually quite consistent and congruous if typology is understood.

#### Function Preferences

Jung believed that basic differences in thought and behavior are determined by the way people prefer to use their mental functions of perception and judgment. Perception includes the process of becoming aware of people, things, ideas, or occurrences; whereas judgment refers to the process of coming to conclusions about what has been perceived. Since perception determines an individual's awareness of a situation, and judgment determines what an individual decides to do about it, these two processes govern a large portion of an individual's mental activity and subsequent behavior (Myers, 1962).

Jung further described perception and judgment in terms of two types of functions, irrational and rational. He postulated that the perceiving process was the irrational function, because the person simply becomes aware of the information and does not mentally process it. When the processing begins, the person is then using his/her rational function of judgment.

Irrational functioning, or the perceiving process, occurs either by sensing (S) or intuition (N). Sensing types perceive directly through their sense organs and detect the concrete details and practical aspects of a situation (Carlyn, 1977). Intuitive types look for meanings, relationships and possibilities that are beyond the reach of their senses (Myers, 1979). For instance, if a sensing individual were asked to analyze a poem, he/she would give a detailed description of the writing style and a thorough explanation of the surface meaning. An intuitive would focus on discovering the possibilities or underlying meaning of the poem.

People use both kinds of perception but most individuals prefer one way of perceiving over the other. A basic difference in personality development begins as soon as a preference between these two ways of perceiving is employed. For example, whichever process a child prefers, he/she will make more use of it to form his/her idea of the world. The other kind of perception will be used less frequently and will not be as well developed. Therefore the individual tends to develop the surface traits that result from looking at life in his/her preferred way (Myers, 1962).

Rational functioning, or the judging process, refers to the processing of information, or the making of decisions. Judging (rational function) also occurs in one

of two ways, thinking (T) or feeling (F). Thinking types decide impersonally, on the basis of cause and effect. They use logic to impose order onto a particular situation. They excel at weighing the facts and objectively organizing material. Feeling types base their judgments on personal values. They take into account anything that matters or is important to themselves or others and are skilled at understanding other peoples' feelings and at analyzing subjective impressions (Carlyn, 1977). A thinking individual rules by head whereas a feeling individual rules by heart. Everyone makes some decisions with thinking and some with feeling, but each individual will ultimately prefer or trust one way of judging more than the other. Thus, the children who prefer thinking develop differently than those who prefer feeling. Each is most effective and happiest in activities that require the kind of judgments that he/she is more suited to make. The child who prefers thinking is more proficient in organizing facts and ideas, while the child who prefers feeling is more capable in the handling of human relationships. Each child acquires the traits that result from his/her preference for the impersonal or the personal approach to life (Myers, 1962).

Jung referred to his two function types as rational and irrational, or as the judging (T-F) and the

perceiving (S-N) functions, respectively. He claimed that an individual could not possibly exercise S or N and T or F simultaneously on a conscious level. He maintained, for example, that if people consistently and consciously use their N process, then their S process is entirely operating at an unconscious level. The conscious use of N would result in its being more fully developed than its opposite, S. Intuition (N) would be called the superior (dominant) function and sensing (S) would be called the inferior function. To support the dominant function, an individual develops an auxiliary function within the other function mode, judging (T or F) in this example. Consequently, if the dominant function is N (irrational) then the auxiliary function must be either T or F (rational). This auxiliary function is relatively differentiated and directed and its opposite is more likely to be the next most fully developed. Both the auxiliary function and its opposite lie partly in consciousness and partly in the unconscious zones. Thus, in addition to utilizing the conscious dominant function, an individual usually makes use of the second or auxiliary function. The third function is rarely consciously available to the average person and the fourth or inferior function (opposite of dominant) is, as a rule, entirely beyond conscious control. This process applies only to the

individual who has developed naturally and possesses a relatively healthy psyche (Jacobi, 1962).

Since the preference for sensing or intuition is independent of the preference for thinking or feeling, either kind of perception can be paired with either kind of judgment. Hence, four combinations can occur: ST-sensing plus thinking; SF-sensing plus feeling; NF-intuition plus feeling; and NT-intuition plus thinking. A different type of personality results from each of these four combinations, each possessing various interests, needs, values, surface traits and habits of mind which are the natural consequence of that combination. Individuals may be endowed some similar qualities when they have preferences in common but each combination has qualities unique to its type.

Jung believed that development of the two function types were thought to be in a state of flux until the individual had differentiated, selected and developed a particular type of perceiving and a particular type of judging could be utilized the most proficiently. Jung asserted that individuals vacillate along these function continuums until middle age, around 40 years old. Jung referred to the developmental process as individuation.

### Attitude Preference

The function type to which individuals belong is an indication of their psychological character, but for Jung, this by itself did not suffice. In addition, one must determine the individuals general attitude, or his/her way of reacting to outer and inner experiences. Jung distinguishes the two such attitude types which influence the entire psychic process as extraversion (E) and introversion (I) (Jacobi, 1962).

Thus, for Jung, the function types (S or N + T or F) indicate the way the material of experience is gathered and processed, while the attitude types (E or I) mark the general psychological attitude, or the directing of the libido (general psychic energy). Jung believed that the attitude type was rooted in our biological make-up. He believed that a change in attitude type can only be brought about by an inner reconstruction or a modification of the structure of the psyche, either through spontaneous transformation or by a lengthy process of psychic development, such as analysis (Jacobi, 1962).

No one is limited exclusively to either the introvert or extravert attitude type. A well-developed individual can deal effectively with either the outer or inner orientation but is more capable of functioning in his/her preferred attitude (Myers, 1962). Extraverted

types, for instance, are oriented primarily to the outer world of objects, people and action. They tend to be more comfortable and interested when they are actively working with people and things (Myers, 1962). They also have a predilection to get caught up with whatever is happening around them (Carlyn, 1977). Introverted types have a more inward orientation and are most comfortable when their work involves ideas and requires a majority of their activity to take place quietly inside their heads (Myers, 1979). They possess a greater predisposition to detach themselves from the world around them (Carlyn, 1977).

To help identify which function is dominant, Myers created another category that Jung did not include in his typology. This category identifies the individual's preference for using the perceiving function (either S or N) or a preference for using the judging function (either T or F). This added category of perceiving or judging (P or J) always pertains to how the individual prefers to use either S or N and T or F in the outer world. For example, an ESTP will extravert the perceiving function, which in this case is sensing, while an ESTJ will extravert the judging function of thinking. Thus, judging types rely chiefly on their judging process (T or F) for dealing with the outer world. They live in an orderly, decided planned way.

They desire to regulate and control life. Perceiving types depend mainly on their perceptive process (S or N) for dealing with the outer world and tend to live in a flexible, spontaneous way and desire to understand life and adapt to it (Myers, 1979).

Since the P or J indicates whether the rational (J or F) or irrational (S or N) process is preferred in relating to the outer world, it also discloses which function is dominant. The dominant function of the extravert is the one used to relate to the outer world so that the P or J preference points to the dominant function. Therefore, an ENFP type has N as the dominant function and F as the auxiliary. On the other hand, for an introvert who is engrossed in the inner world of ideas, the dominant process is introverted, and his/her auxiliary process is used in dealing with the outer world. Thus, for an introvert, the P or J will point to the auxiliary. With an INFP, N is the auxiliary function and F is dominant (Myers, 1962).

#### The MBTI as an Instrument

The construction of the MBTI was begun in 1942 by Isabel B. Myers and Katherine Briggs, and is an objective instrument devised to effectively identify the type preferences developed by Jung. The MBTI has undergone numerous revisions, and its present form, F, was used in this research. The MBTI yields two kinds of



scores for each person which categorizes individuals on four dichotomous types (E-I, S-N, T-F and J-P). These type categories can also be transformed into four continuous scores. Both of these scoring procedures will be utilized in this research.

The estimated reliabilities of continuous scores are noticeably higher than estimates of dichotomous reliability because information is lost in changing from continuous to dichotomous categories (Carlyn, 1977). Myers (1962) supports the use of dichotomous scores in a variety of research areas. However, Siegel (1963) states that continuous scores should be used in order to maintain validity and reliability.

During the last fifteen years, the MBTI has been used extensively as a research and counseling tool but test-retest reliability studies have been surprisingly few. Stricker and Ross (1964) conducted a 14 month test-retest interval with 41 male Amherst College students. The test-retest correlation coefficients for the continuous scores ranged from .69 to .73 for all the scales except Thinking-Feeling, which was .48. In 1972, Levy, Murphy and Carlson tested 282 female and 146 male college students, all black, at Howard University, using an 8-week test-retest interval; the coefficients ranged from .78 to .83 for the females and .69 to .80 for the males. Carskadon (1977) tested 64 males

and 70 female introductory psychology students at Mississippi State University using a 7-week test-retest interval, the coefficients ranged from .73 to .83 for both sexes except T-F coefficients for males was only .56. Other estimations of the reliability of continuous scores, Myers (1962), Webb (1964), and Stricker and Ross (1962) reported coefficients ranging from .76 to .82 (E-I), .75 to .87 (S-N), .69 to .86 (T-F) and .80 to .84 (J-P).

Stricker and Ross (1963) found continuous scores to have internal consistency reliability of .64 to .84 but only .34 to .73 for dichotomous scores. They stated that the lower reliability for dichotomous scores may have resulted because they used a lower bound reliability estimate. Two other researchers (Hoffman, 1974; Webb, 1964) estimated the reliability of dichotomous scores to have phi coefficients ranging from .55 to .65 (E-I), .64 to .73 (S-N), .43 to .75 (T-F), and .58 to .84 (J-P). Tetrachoric coefficients were reported ranging from .70 to .81 (E-I), .82 to .92 (S-N), .66 to .90 (T-F), and .76 to .84 (J-P). These estimated reliabilities of type categories appear to be satisfactory in most cases, although there is a rather wide range between conservative and liberal estimates of internal consistency (Carlyn, 1977).

The validity of the MBTI relates to how well it measures what it was intended to measure, which is, the theoretical constructs of Jung's typology. Carlyn reviewed the literature pertaining to three types of validity: content validity, predictive validity, and construct validity. She cited numerous studies for each type of validity and concluded that the individual scales of the MBTI measure important dimensions of personality which seem to be very similar to those postulated by Jung. Findings indicate that MBTI scores "relate meaningfully to a large number of variables including personality, ability, interest, value, aptitude and performance measures, academic choice, and behavior ratings" (Mendelsohn, 1965, p. 322).

Overall, the reliability coefficients for the MBTI seem to be sufficient for both the dichotomous and continuous scoring procedures. Also, the instrument appears to be reasonably valid and potentially useful for a variety of purposes.

### Anxiety

The concept of anxiety has led to the proliferation of a great deal of research and many theoretical and methodological formulations. However, there has been little agreement as to the exact nature of anxiety and how it can be reliably assessed. Anxiety has been defined as a stimulus for certain behavior, or a

response, or a learned drive, or a personality variable (Shedletsky & Endler, 1974). A number of personality theorists refer to the term "anxiety" as a complex process.

Anxiety as process refers to a complex sequence of cognitive, affective, and behavioral events that is evoked by some form of stress. This process may be initiated by a stressful external stimulus or by internal cues that are perceived or interpreted as threatening. (Speilberger, 1975, p. 137)

Speilberger (1966) asserts that "ambiguity in the conceptual status of anxiety arises from the more or less indiscriminate use of the term to refer to two very different types of concepts" (p. 12). According to Speilberger (1975),

Anxiety as an emotional state (A-state) is characterized by subjective, consciously perceived feelings of tension, apprehension and nervousness accompanied by or associated with activation of the autonomic nervous system. (p. 137)

Speilberger (1972) described the general characteristics of personality traits as: (1) individual differences in tendencies to perceive the world; (2) a disposition to respond in a predictable and specific

manner; (3) individual differences in the manifestation of particular emotional states; and (4) a positive correlation between the strength of the personality trait and the intensity of the corresponding emotional state (pp. 31-32). For Spielberger (1975),

Trait anxiety (A-trait) refers to relatively stable individual differences in anxiety proneness, i.e., to differences among people in the disposition or the tendency to perceive a wide range of situations as threatening and to respond to these situations with differential elevations in state anxiety. (p. 137)

Spielberger (1972) surmised that early childhood experiences influenced the development of individual differences in A-trait, which disposed the high A-trait individuals to evaluate "personal adequacy" situations as more threatening than low A-trait individuals. Thus, high A-trait individuals would experience a greater A-state arousal in an ego threatening situation than low A-state individuals. Hodges (1968), Hodges and Felling (1970), and Spielberger, Gorsuch and Lushene (1970) found that the correlation between the STAI trait and STAI state scores was lower for physical danger situations than for ego threat situations.

### Anxiety in College Students

College life is often both a pleasurable experience as well as a period of time during which students experience problems. There are many factors associated with attending college that have the potential for creating stresses within students. Blaine and McArthur (1961) stated that ten percent of the average college population may be expected to encounter emotional disturbances serious enough to result in psychiatric symptoms or a disturbed life efficiency.

The general academic area of students' lives is perceived to be the most stressful or produce the most problems (Burgess, 1959; De Sena, 1966; Hartman, 1968; Rust, 1960). This is to be expected because all students are faced with academic requirements (Houston, 1971). These previous reports described other problem areas, the most prevalent among which are peer relations, which includes dating, making and breaking friendships, achieving a heterosexual adjustment, attaining autonomy from parents, and making vocational plans. Concern over money was another major pressure not reported as being highly stressful in these reports. Fullerton and Potkay (1973) reported that grades represented the greatest pressure, with money a clear second source of pressure over that of social, future-job, and personal problems.

To assess anxiety level, Speilberger et al. (1970) developed the State-Trait Anxiety Inventory (STAI). For our purposes, only the trait section of the inventory will be utilized.

#### Reliability and Validity of the STAI

Since its development in 1970, numerous studies have assessed the reliability and validity of the STAI. Many of these studies are summarized in the STAI Manual (Speilberger et al.). In another reliability study, Metzger (1976) conducted a study using a 3-week test-retest interval on 71 college students, 30 males and 41 females, enrolled in an introductory psychology course. After the 3-week interval, 20 students were selected to retake the test. The Ss for the retest were ten with scores higher than the 85th percentile or above and ten who scored in the 15th percentile or below. The reliability coefficient was found to be .97 for A-trait and .45 for the A-state. Metzger reports that the STAI has good discriminating ability for both high- and low-scoring Ss. The STAI possesses an impressive set of reliability coefficients, which suggest that it would be an excellent device for research and clinical purposes (1976).

#### Relation of MBTI to Anxiety

Stricker and Ross (1962) observed in a study of 236 Wesleyan male freshmen that S-J types possessed a

significant product moment correlation with a need for order. These S-J types experienced a significant amount of free-floating anxiety.

Myers (1962) reported that if an individual failed to differentiate and choose between the four processes (S, N, T and F) and used all four equally, that the person would be more anxious than one who had differentiated between the processes and had a dominant process. The following quote exemplifies this:

Some people dislike the idea of a dominant process and prefer to think of themselves as using all four processes equally. Jung says that such impartiality, where it actually exists, keeps all of the processes relatively undeveloped and produces a "primitive mentality." The reason given is that the two perceptive processes, sensing and intuition, are incompatible opposites. When a person fails to choose between them and tries to listen to both at once, they jam each other and no clear signal comes through. If either is to develop, the other must be shut off most of the time to give it a chance. The two judging processes, thinking and feeling, interfere with each other similarly. One perceptive process and one judging process can develop side by side,



provided one is subordinated to the other. But one process must have clear sovereignty, with scope to reach its full development, if a person is to be really effective.

(p. 60)

In a study to investigate the interrelationships among five variables, including anxiety (measured by the Taylor Manifest Anxiety Scale) and a preference for introversion or extraversion (measured by the MBTI), Stancil (1972) found that introverts were no more highly anxious than extraverts.

Shapiro and Alexander (1969) stated that there is a difference between individuals' anxiety levels and the amount of social interaction in which they participate. He postulated that when individuals are more anxious, they seek solitude. Shapiro did not differentiate between which kind of anxiety (state or trait) he meant, nor did he indicate that he was referring to introverts and extraverts in his paper. It is believed that extraverts generally engage in more social interaction than introverts.

Consistent with this, Eysenck's (1976) theory, linking arousal to extraversion-introversion in adults, assumes that introverts possess higher levels of arousal than extraverts. The difference in arousal levels was also found to be true in female children but not in

male children (Tapasak, Roodin & Vaught, 1978). In relating anxiety and arousal, Tapasek notes, "Although anxiety and arousal are not synonymous concepts, they both reflect a heightened or elevated response tendency on the part of the subject" (Tapasak et al., 1978, p. 54).

In a 1976 study investigating the validity of the Eysenck Personality Questionnaire (EPQ), researchers found a significant correlation between the extraversion scale of MBTI and that of the EPQ. The canonical analysis of the MBTI and the EPQ yielded two significantly related components in the two instruments. The first related component ( $R = .66$ ,  $X_{16}^2 = 67.66$ ,  $p < .001$ ) had large canonical weights on the extraversion scales of the two instruments (.98 for the MBTI extraversion and .73 for EPQ extraversion). The second related component ( $R = .48$ ,  $X_9^2 = 25.51$ ,  $p < .005$ ) had large canonical weights on the thinking (.66) and the judgment (.64) scales of the MBTI and the neuroticism scale of the EPQ (-.76) (Wakefield, Sasek, Brubaker & Friedman, 1976). Another study investigating the correlation between the extraversion-introversion scales on the EPQ and MBTI, the researchers reported a correlation of .74 ( $n = 93$ ;  $p < .001$ ), which provides a demonstration of convergent validity (Steele & Kelly, 1976).

Numerous studies have investigated the relationship between extraversion-introversion, as measured by the Eysenck Personality Inventory, and level of arousal as measured by EEG. The results have been inconsistent and therefore, a relationship between E-I and arousal cannot be simply concluded. Gale (1973) and Gale, Coles, and Blaydon (1972) postulated that introverts possess higher levels of arousal than extraverts, while Savage (1964) found that extraverts have significantly higher EEG amplitude than introverts ( $p < .01$ ). The methods used to quantify the EEG alpha band vary considerably and comparison of the available studies is therefore difficult.

#### Statement of the Problem

The purpose of this investigation is to reveal any relatedness between Myers-Briggs types and level of trait anxiety. To date, no correlational study focusing exclusively on the relationship between anxiety and MBTI has been conducted. This correlational study may also indicate any predictive ability for the STAI (A-trait) and MBTI.

#### Hypotheses

1. Students with S-J preferences will be significantly more anxious than other students.
2. Students with ISTJ type will tend to be high anxious.

3. Introverts who do not have an adequately developed auxiliary process will be high anxious. Myers stated, "If the introvert has no useful development of an auxiliary process, his outer life will be a very awkward, accidental and uncomfortable affair" (Myers, 1962, p. 61).

4. Students who fail to differentiate and choose among the four processes (S, N, T & F) and use all four equally, will be more anxious than ones who have differentiated among the processes and have a dominant process.

5. Individuals whose continuous J-P score is between 90 to 110 and both their perceiving function and judging function are approximately equal in strength, will tend to be high anxious. This indicates that the dominant process is not much more developed than the auxiliary process and is more prone to vacillate between functions.

## METHOD

### Subjects

The subjects (Ss) were 163 volunteers enrolled in introductory psychology courses at Appalachian State University, who received extra credit for their participation in this study. Of the 163 Ss, 74 were male and 89 were female. The majority of the Ss were between the ages of 18 to 20 years. Each S was classified as either high, medium or low anxious, according to their score on the STAI. The high anxious individuals scored one standard deviation above the low anxious individuals, therefore forming the medium anxious group. The frequency count of Ss in each group was: 24 low anxious males, 25 medium anxious males, 25 high anxious males, 33 low anxious females, 24 medium anxious females and 32 high anxious females.

### Procedure

Students were given the STAI during class time and asked to come back to take the MBTI for extra credit at a scheduled time that was convenient for them. Feedback on the MBTI was given to any Ss who requested it.

## Instruments

State-Trait Anxiety Inventory (Spielberger et al., 1970). The STAI has separate self-report scales for measuring state anxiety (A-state) and trait anxiety (A-trait). Only the A-trait scale was administered. The A-trait scale has 20 statements which ask people to describe how they generally feel and provides a means for screening college students for anxiety-proneness. (See Appendix A)

Myers-Briggs Type Indicator (Myers, 1962). The MBTI consists of 166 forced choice questions for determining habitual choices between opposites. Each item that is scored has one answer weighted in favor of one of the preferences and the other answer weighted in favor of the opposing preference. In an attempt to offset the social desirability bias, different weights were assigned to certain answers. The MBTI yields two types of scores for each person. The test categorizes respondents on four dichotomous types which result in eight numerical scores that can be transformed into four dichotomous scores and then transformed into the four continuous scores. The numerical portion of a score indicates how strongly the preference is reported, which is not the same as how strongly it is felt. The result is that an individual is classified as one of 16 possible types: ISTJ, ISFJ, INFJ, INTJ, ISTP, ISFP,

INFP, INTP, ESTP, ENTP, ENFP, ESTJ, ESFJ, ENFJ, ENTJ, or ESFP. (See Appendix B)

### Design and Analysis

The results from the STAI were interpreted according to normative data.

Both the MBTI dichotomous type category scores and the continuous scores were analyzed. The dichotomous scores were cross-tabulated with the three levels of anxiety, so as to test hypothesis number 1 and number 2, and to obtain frequencies of type combinations. The MBTI continuous scores were cross-tabulated with the three levels of anxiety to test hypothesis number 3, number 4 and number 5. A factor analysis using varimax rotation will demonstrate if any significant correlations can be explained in terms of an anxiety factor. A regression analysis on the four continuous scores from the MBTI, along with the sex of the S, will also be performed (the dependent variable being the S's trait anxiety score). The Statistical Package for the Social Sciences (SPSS) computer program was utilized and automatically rectified for differences in the number of subjects in each category or group.

## RESULTS

Analysis of the STAI A-trait scores yielded a mean of 39.85 with a standard deviation of 10.49 for the sample. Thirty-five percent of the 163 introductory psychology students were classified as high anxious and another 35% were classified as low anxious, leaving 30% of the students in the medium anxious group.

The frequencies of the dichotomous types on the MBTI, presented in Table I, showed that only the J-P dimension was approximately equally divided. The other dimensions showed clear dominance of individual types. For example, 76.1% of the population were Feeling, opposed to Thinking, 67.5% were Sensing rather than Intuitive and 60.1% were Extraverted versus Intraverted. Further examination of the relation of frequencies of dichotomous types to the sex of the subject produced a statistically significant difference between males and females on T-F dimension (Kendalls Tau B = .21068,  $p < .0037$ ). A larger percentage of the female population were categorized as F(84.3%) where only 66.2% of the males were classified as F. (Refer to Appendix C for distribution of type in this sample.)



TABLE I  
 FREQUENCY PERCENTAGE OF TYPES IN EACH DIMENSION BY SEX

	E	I	S	N	T	F	J	P
MALES (n=74)	59.5%	40.5%	64.9%	35.1%	33.8%	66.2%	47.3%	52.7%
FEMALES (n=89)	60.7%	39.3%	69.7%	30.3%	15.7%	84.3%	51.7%	48.3%
TOTAL (n=163)	60.1%	39.9%	67.5%	32.5%	23.9%	76.1%	49.7%	50.3%

Cross-tabulation of each dichotomous dimension on the MBTI against the three anxiety categories, shown in Table II, revealed only one statistically significant finding. This was that 77.2% of the low anxious group were extraverted, whereas 42.1% of the high anxious group were extraverted (Kendall's Tau C = .31917,  $p < .0001$ ). To examine the data for any unique relations between profile configurations of the four dimensions on the MBTI and anxiety levels, the dichotomous type scores and the three categories of anxiety were utilized. A cross-tabulation of the categories, shown in Table III, confirms the relation of anxiety level to E-I, in which introverts are clearly more anxious. There appears to be no substantial relation of anxiety level to the remaining MBTI categories.

The correlation of continuous scores for each of the four MBTI dimensions and the STAI (A-trait) anxiety measure were obtained. The intercorrelation matrix of these five measures, along with the sex of the S, is shown in Table IV for the 163 subjects. A varimax factor analysis was utilized which extracted factors until 100% of the variance was accounted for. This factor analysis of the correlation matrix (excluding sex) revealed two factors: the first identified with the J-P, S-N, and T-F dimensions and the second identified with trait anxiety and the E-I dimension (see Table V).

TABLE II  
 CROSS-TABULATION OF EACH DICHOTOMOUS DIMENSION ON THE MBTI  
 BY ANXIETY CATEGORIES

	E	I	S	N	T	F	J	P
A N X	77.2%	22.8%	64.9%	35.1%	22.8%	77.2%	43.9%	56.1%
I E T	61.2%	38.8%	71.4%	28.6%	30.6%	69.4%	59.2%	40.8%
Y (n=57)	42.1%	57.9%	66.7%	33.3%	19.3%	80.7%	47.4%	52.6%

TABLE III

CROSS-TABULATION OF PERSONALITY TYPES AND TRAIT ANXIETY LEVELS  
SHOWING RAW COUNTS OF COMBINATIONS

	J			P			TOTAL		
	SF	ST	NF	NT	SF	ST		NF	NT
I - High Anxious	11	5	2	1	6	1	6	1	33
I - Medium Anxious	6	3	2	0	4	1	2	1	19
I - Low Anxious	3	1	1	0	6	0	1	1	13
E - High Anxious	4	1	3	0	9	1	5	1	24
E - Medium Anxious	9	4	2	3	6	2	3	1	30
E - Low Anxious	12	2	3	3	9	4	9	2	44

TABLE IV  
 INTERCORRELATIONAL MATRIX FOR SEX, ANXIETY,  
 AND MBTI CONTINUOUS SCORES

	SEX	TRAIT	EI	SN	TF	JP
SEX	-	.02722	-0.04250	0.01797	0.21426	-0.09995
TRAIT ANXIETY	-	-	0.31304	0.02380	0.08194	-0.06826
EI	-	-	-	-0.10001	0.00178	-0.13683
SN	-	-	-	-	0.06438	0.31328
TF	-	-	-	-	-	0.19651
JP	-	-	-	-	-	-

TABLE V  
VARIMAX ROTATED FACTOR LOADINGS

	FACTOR 1	FACTOR 2
Trait Anxiety	.08079	.66038
Extroversion-Introversion	-.10282	.48360
Sensing-Intuitive	.40278	-.05637
Thinking-Feeling	.25958	.07944
Judging-Perceiving	.74296	.16753

This unique association of trait anxiety with the E-I dimension was further confirmed with a step-wise multiple regression in which trait anxiety was the criterion (or dependent) variable. Inspection of the regression weights of Table VI shows that the only significant regression weight was that for E-I, the others being negligible. The .31 correlation of anxiety and the E-I dimension shows that only 9% of their variance was shared. This is a weak relation although the two measures do form a distinct independent factor.

TABLE VI  
MULTIPLE REGRESSION WEIGHTS WITH TRAIT  
ANXIETY AS THE DEPENDENT VARIABLE

VARIABLE	BETA	F
EI	.31181	16.705*
TF	.08615	1.185
SN	.06879	.749
JP	-.06262	.579
SEX	.01452	.034

\* $p < .001$

## DISCUSSION

The overall results of this study suggest that trait anxiety, as measured by the STAI A-trait scale, does significantly relate to the extraversion-introversion dimension of the MBTI. Although there is only a .31 correlation, the intercorrelation matrix and subsequent multiple regression and factor analyses consistently indicate this relationship: the high anxious tend to be introverted, whereas the low anxious were extraverted. This supports the research of Eysenck (1976), Gale (1973), Gale et al. (1972), Shapiro (1969), and Tapasak et al. (1978). One explanation might be that introverts tend to keep their emotions and feelings "bottled up inside" and since they do not ventilate these feelings, a build-up occurs which results in a higher level of anxiety. Also, the extraverts may differ from the introverts as to their threshold level of anxiety. Certain life events may be perceived as more stressful for introverts than for extraverts while other events may not be perceived differently. Another possible explanation for this relationship is that there appears to be a commonality of question content within the two tests. The items that indicate



introversion and the items that indicate a higher level of anxiety may reflect the person's tendency to ruminate. Possibly, people who are chronically anxious may be driven by that anxiety to introspect a great deal of the time. Also, when anxious, both introverts and extraverts tend to exhibit extreme behaviors typical of their type and therefore, introverts would introspect more and extraverts would extravert more. There may be a lack of items on the STAI A-trait that measure a higher level of anxiety in extraverts.

There was no relationship between trait anxiety and the other three dimensions of the MBTI (S-N, T-F, J-P). These dimensions represent the cognitive processing style that an individual prefers. Much of this cognitive processing style is based on environmental input or the structure imposed on it. A possible explanation for the absence of a correlation between these three MBTI dimensions and trait anxiety is that trait anxiety is not only an affect measure, but is also a chronic emotional state which possibly exists apart from day-to-day environmental input.

#### Testing of Hypotheses

The multiple cross-tabulations performed on the data failed to support any of the proposed hypotheses. A possible explanation for the failure of the hypotheses to be confirmed is that the number of subjects tested

was too meager to show any differences in types and anxiety levels.

#### Comparing Sample to STAI Norms

Analysis of the sample's A-trait anxiety score yielded a mean of 39.85( $\bar{X}$ ) with a standard deviation of 10.49. Compared to normative data (Speilberger et al., 1970) for college undergraduates enrolled in an introductory psychology course at Florida State University (N=484), one can see that the present sample is very similar to the norm group which had an approximate  $\bar{X} = 38$  and an approximate standard deviation = 9.5.

To partition the Ss into three discrete levels of anxiety, one standard deviation was used to separate the low anxious group from the high anxious group, thus resulting in the formation of the medium anxious group. Analysis of these groupings with reference to the normative data supplies us with percentages of the norm group that would be classified in each of the three groups. The low anxious group would consist approximately of the lowest 40% of the population. The high anxious group would be comprised approximately of the upper 20% of the population, leaving the middle 40% of the population in the medium anxious group.

### Strengths, Weaknesses and Recommendations for Future Research

The major strength of this study is that it provides predictive ability on the t-trait anxiety level of individuals from their score on the E-I dimension of the MBTI. In this day and time when counselors are overloaded with paper work and large case loads, it is important to expedite and be accurate in the assessment and treatment of clients. More research needs to be conducted in correlating widely used tests to increase predictive ability between them.

A possible weakness in this study is that the sample was too small and not representative of the entire student body, even though every Myers-Briggs type was represented in this sample (see Appendix C). Future research should include a larger sample that is taken from different departments in the school and thus increase the predictive ability of the test for the population of the entire university.

Another weakness in this study is that the discrete categories established for trait anxiety were not equally proportioned when compared to the norm group. In future studies, the cut-off points for the discrete levels of anxiety should be adjusted after the trait anxiety scores are evaluated and can be compared to normative data.

Other research might include manipulating environmental situations encountered by different Myers-Briggs types and assessing the threat value that each type experiences by measuring state anxiety.

In general, more research needs to be conducted in the area of personality type for an attainment of a better understanding of the interaction between personality traits and types.

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APPENDIX A

State-Trait Anxiety Inventory  
(A-Trait Scale)

SELF-EVALUATION QUESTIONNAIRE  
FORM X-2

NAME _____	DATE _____			
<p>DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate number to the right of the statement to indicate how you <u>generally</u> feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.</p>				
	not at all	somewhat	moderately so	very much so
21. I feel pleasant.....	1	2	3	4
22. I tire quickly.....	1	2	3	4
23. I feel like crying.....	1	2	3	4
24. I wish I could be as happy as others seem to be.....	1	2	3	4
25. I am losing out on things because I can't make up my mind soon enough.....	1	2	3	4
26. I feel rested.....	1	2	3	4
27. I am "calm, cool, and collected".....	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them.....	1	2	3	4
29. I worry too much over something that really doesn't matter.....	1	2	3	4
30. I am happy.....	1	2	3	4
31. I am inclined to take things hard.....	1	2	3	4
32. I lack self-confidence.....	1	2	3	4
33. I feel secure.....	1	2	3	4
34. I try to avoid facing a crisis or difficulty.....	1	2	3	4
35. I feel blue.....	1	2	3	4
36. I am content.....	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me.....	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind.....	1	2	3	4
39. I am a steady person.....	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests.....	1	2	3	4

APPENDIX B

Myers-Briggs Type Indicator

# MYERS-BRIGGS TYPE INDICATOR

FORM F

by Katharine C. Briggs and Isabel Briggs Myers

## DIRECTIONS:

There are no "right" or "wrong" answers to these questions. Your answers will help show how you like to look at things and how you like to go about deciding things. Knowing your own preferences and learning about other people's can help you understand where your special strengths are, what kinds of work you might enjoy and be successful doing, and how people with different preferences can relate to each other and be valuable to society.

Read each question carefully and mark your answer on the separate answer sheet. *Make no marks on the question booklet.* Do not think too long about any question. If you cannot decide on a question, skip it but be careful that the *next* space you mark on the answer sheet has the same number as the question you are then answering.

Read the directions on your answer sheet, fill in your name and any other facts asked for, and work through until you have answered all the questions.



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Which answer comes closest to telling how you usually feel or act?

1. Does following a schedule
  - (A) appeal to you, or
  - (B) cramp you?
2. Do you usually get along better with
  - (A) imaginative people, or
  - (B) realistic people?
3. If strangers are staring at you in a crowd, do you
  - (A) often become aware of it, or
  - (B) seldom notice it?
4. Are you more careful about
  - (A) people's feelings, or
  - (B) their rights?
5. Are you
  - (A) inclined to enjoy deciding things, or
  - (B) just as glad to have circumstances decide a matter for you?
6. When you are with a group of people, would you usually rather
  - (A) join in the talk of the group, or
  - (B) talk individually with people you know well?
7. When you have more knowledge or skill in something than the people around you, is it more satisfying
  - (A) to guard your superior knowledge, or
  - (B) to share it with those who want to learn?
8. When you have done all you can to remedy a troublesome situation, are you
  - (A) able to stop worrying about it, or
  - (B) still more or less haunted by it?
9. If you were asked on a Saturday morning what you were going to do that day, would you
  - (A) be able to tell pretty well, or
  - (B) list twice too many things, or
  - (C) have to wait and see?
10. Do you think on the whole that
  - (A) children have the best of it, or
  - (B) life is more interesting for grown-ups?
11. In doing something that many other people do, does it appeal to you more to
  - (A) do it in the accepted way, or
  - (B) invent a way of your own?
12. When you were small, did you
  - (A) feel sure of your parents' love and devotion to you, or
  - (B) feel that they admired and approved of some other child more than they did of you?
13. Do you
  - (A) rather prefer to do things at the last minute, or
  - (B) find that hard on the nerves?
14. If a breakdown or mix-up halted a job on which you and a lot of others were working, would your impulse be to
  - (A) enjoy the breathing spell, or
  - (B) look for some part of the work where you could still make progress, or
  - (C) join the "trouble-shooters" who were wrestling with the difficulty?
15. Do you usually
  - (A) show your feelings freely, or
  - (B) keep your feelings to yourself?
16. When you have decided upon a course of action, do you
  - (A) reconsider it if unforeseen disadvantages are pointed out to you, or
  - (B) usually put it through to a finish, however it may inconvenience yourself and others?
17. In reading for pleasure, do you
  - (A) enjoy odd or original ways of saying things, or
  - (B) like writers to say exactly what they mean?

18. In any of the ordinary emergencies of everyday life, do you prefer to  
(A) take orders and be helpful, or  
(B) give orders and be responsible?
19. At parties, do you  
(A) sometimes get bored, or  
(B) always have fun?
20. Is it harder for you to adapt to  
(A) routine, or  
(B) constant change?
21. Would you be more willing to take on a heavy load of extra work for the sake of  
(A) extra comforts and luxuries, or  
(B) a chance to achieve something important?
22. Are the things you plan or undertake  
(A) almost always things you can finish, or  
(B) often things that prove too difficult to carry through?
23. Are you more attracted to  
(A) a person with a quick and brilliant mind, or  
(B) a practical person with a lot of common sense?
24. Do you find people in general  
(A) slow to appreciate and accept ideas not their own, or  
(B) reasonably open-minded?
25. When you have to meet strangers, do you find it  
(A) pleasant, or at least easy, or  
(B) something that takes a good deal of effort?
26. Are you inclined to  
(A) value sentiment more than logic, or  
(B) value logic more than sentiment?
27. Do you prefer to  
(A) arrange dates, parties, etc. well in advance, or  
(B) be free to do whatever looks like fun when the time comes?
28. In making plans which concern other people, do you prefer to  
(A) take them into your confidence, or  
(B) keep them in the dark until the last possible moment?
29. Is it a higher compliment to be called  
(A) a person of real feeling, or  
(B) a consistently reasonable person?
30. When you have a decision to make, do you usually  
(A) make it right away, or  
(B) wait as long as you reasonably can before deciding?
31. When you run into an unexpected difficulty in something you are doing, do you feel it to be  
(A) a piece of bad luck, or  
(B) a nuisance, or  
(C) all in the day's work?
32. Do you almost always  
(A) enjoy the present moment and make the most of it, or  
(B) feel that something just ahead is more important?
33. Are you  
(A) easy to get to know, or  
(B) hard to get to know?
34. With most of the people you know, do you  
(A) feel that they mean what they say, or  
(B) feel you must watch for a hidden meaning?
35. When you start a big project that is due in a week, do you  
(A) take time to list the separate things to be done and the order of doing them, or  
(B) plunge in?
36. In solving a personal problem, do you  
(A) feel more confident about it if you have asked other people's advice, or  
(B) feel that nobody else is in as good a position to judge as you are?
37. Do you admire more the people who are  
(A) conventional enough never to make themselves conspicuous, or  
(B) too original and individual to care whether they are conspicuous or not?
38. Which mistake would be more natural for you:  
(A) to drift from one thing to another all your life, or  
(B) to stay in a rut that didn't suit you?

*Go on to the next page.*

39. When you run across people who are mistaken in their beliefs, do you feel that  
 (A) it is your duty to set them right, or  
 (B) it is their privilege to be wrong?
40. When an attractive chance for leadership comes to you, do you  
 (A) accept it if it is something you can really swing, or  
 (B) sometimes let it slip because you are too modest about your own abilities, or  
 (C) or doesn't leadership ever attract you?
41. Among your friends, are you  
 (A) one of the last to hear what is going on, or  
 (B) full of news about everybody?
42. Are you at your best  
 (A) when dealing with the unexpected, or  
 (B) when following a carefully worked-out plan?
43. Does the importance of doing well on a test make it generally  
 (A) easier for you to concentrate and do your best, or  
 (B) harder for you to concentrate and do yourself justice?
44. In your free hours, do you  
 (A) very much enjoy stopping somewhere for refreshments, or  
 (B) usually want to use the time and money another way?
45. At the time in your life when things piled up on you the worst, did you find  
 (A) that you had gotten into an impossible situation, or  
 (B) that by doing only the necessary things you could work your way out?
46. Do most of the people you know  
 (A) take their fair share of praise and blame, or  
 (B) grab all the credit they can but shift any blame on to someone else?
47. When you are in an embarrassing spot, do you usually  
 (A) change the subject, or  
 (B) turn it into a joke, or  
 (C) days later, think of what you should have said?
48. Are such emotional "ups and downs" as you may feel  
 (A) very marked, or  
 (B) rather moderate?
49. Do you think that having a daily routine is  
 (A) a comfortable way to get things done, or  
 (B) painful even when necessary?
50. Are you usually  
 (A) a "good mixer", or  
 (B) rather quiet and reserved?
51. In your early childhood (at six or eight), did you  
 (A) feel your parents were very wise people who should be obeyed, or  
 (B) find their authority irksome and escape it when possible?
52. When you have a suggestion that ought to be made at a meeting, do you  
 (A) stand up and make it as a matter of course, or  
 (B) hesitate to do so?
53. Do you get more annoyed at  
 (A) fancy theories, or  
 (B) people who don't like theories?
54. When you are helping in a group undertaking, are you more often struck by  
 (A) the cooperation, or  
 (B) the inefficiency, or  
 (C) or don't you get involved in group undertakings?
55. When you go somewhere for the day, would you rather  
 (A) plan what you will do and when, or  
 (B) just go?
56. Are the things you worry about  
 (A) often really not worth it, or  
 (B) always more or less serious?
57. In deciding something important, do you  
 (A) find you can trust your feeling about what is best to do, or  
 (B) think you should do the *logical* thing, no matter how you feel about it?



58. Do you tend to have  
 (A) deep friendships with a very few people, or  
 (B) broad friendships with many different people?
59. Do you think your friends  
 (A) feel you are open to suggestions, or  
 (B) know better than to try to talk you out of anything you've decided to do?
60. Does the idea of making a list of what you should get done over a week-end  
 (A) appeal to you, or  
 (B) leave you cold, or  
 (C) positively depress you?
61. In traveling, would you rather go  
 (A) with a companion who had made the trip before and "knew the ropes", or  
 (B) alone or with someone greener at it than yourself?
62. Would you rather have  
 (A) an opportunity that may lead to bigger things, or  
 (B) an experience that you are sure to enjoy?
63. Among your personal beliefs, are there  
 (A) some things that cannot be proved, or  
 (B) only things that *can* be proved?
64. Would you rather  
 (A) support the established methods of doing good, or  
 (B) analyze what is still wrong and attack unsolved problems?
65. Has it been your experience that you  
 (A) often fall in love with a notion or project that turns out to be a disappointment—so that you "go up like a rocket and come down like the stick", or do you  
 (B) use enough judgment on your enthusiasms so that they do not let you down?
66. Do you think you get  
 (A) more enthusiastic about things than the average person, or  
 (B) less enthusiastic about things than the average person?
67. If you divided all the people you know into those you like, those you dislike, and those toward whom you feel indifferent, would there be more of  
 (A) those you like, or  
 (B) those you dislike?
- [On this next question *only*, if two answers are true, mark both.]
68. In your daily work, do you  
 (A) rather enjoy an emergency that makes you work against time, or  
 (B) hate to work under pressure, or  
 (C) usually plan your work so you won't need to work under pressure?
69. Are you more likely to speak up in  
 (A) praise, or  
 (B) blame?
70. Is it higher praise to say someone has  
 (A) vision, or  
 (B) common sense?
71. When playing cards, do you enjoy most  
 (A) the sociability,  
 (B) the excitement of winning,  
 (C) the problem of getting the most out of each hand,  
 (D) the risk of playing for stakes,  
 (E) or don't you enjoy playing cards?

*Go on to the next page.*

## Which word in each pair appeals to you more?

- |                     |                |     |                     |             |     |
|---------------------|----------------|-----|---------------------|-------------|-----|
| 72. (A) firm-minded | warm-hearted   | (B) | 98. (A) sensible    | fascinating | (B) |
| 73. (A) imaginative | matter-of-fact | (B) | 99. (A) changing    | permanent   | (B) |
| 74. (A) systematic  | spontaneous    | (B) | 100. (A) determined | devoted     | (B) |
| 75. (A) congenial   | effective      | (B) | 101. (A) system     | zest        | (B) |
| 76. (A) theory      | certainty      | (B) | 102. (A) facts      | ideas       | (B) |
| 77. (A) party       | theater        | (B) | 103. (A) compassion | foresight   | (B) |
| 78. (A) build       | invent         | (B) | 104. (A) concrete   | abstract    | (B) |
| 79. (A) analyze     | sympathize     | (B) | 105. (A) justice    | mercy       | (B) |
| 80. (A) popular     | intimate       | (B) | 106. (A) calm       | lively      | (B) |
| 81. (A) benefits    | blessings      | (B) | 107. (A) make       | create      | (B) |
| 82. (A) casual      | correct        | (B) | 108. (A) wary       | trustful    | (B) |
| 83. (A) active      | intellectual   | (B) | 109. (A) orderly    | easy-going  | (B) |
| 84. (A) uncritical  | critical       | (B) | 110. (A) approve    | question    | (B) |
| 85. (A) scheduled   | unplanned      | (B) | 111. (A) gentle     | firm        | (B) |
| 86. (A) convincing  | touching       | (B) | 112. (A) foundation | spire       | (B) |
| 87. (A) reserved    | talkative      | (B) | 113. (A) quick      | careful     | (B) |
| 88. (A) statement   | concept        | (B) | 114. (A) thinking   | feeling     | (B) |
| 89. (A) soft        | hard           | (B) | 115. (A) theory     | experience  | (B) |
| 90. (A) production  | design         | (B) | 116. (A) sociable   | detached    | (B) |
| 91. (A) forgive     | tolerate       | (B) | 117. (A) sign       | symbol      | (B) |
| 92. (A) hearty      | quiet          | (B) | 118. (A) systematic | casual      | (B) |
| 93. (A) who         | what           | (B) | 119. (A) literal    | figurative  | (B) |
| 94. (A) impulse     | decision       | (B) | 120. (A) peacemaker | judge       | (B) |
| 95. (A) speak       | write          | (B) | 121. (A) accept     | change      | (B) |
| 96. (A) affection   | tenderness     | (B) | 122. (A) agree      | discuss     | (B) |
| 97. (A) punctual    | leisurely      | (B) | 123. (A) executive  | scholar     | (B) |

## Which answer comes closest to telling how you usually feel or act?

124. Do you find the more routine parts of your day  
(A) restful, or  
(B) boring?
125. If you think you are not getting a square deal in a club or team to which you belong, is it better to  
(A) shut up and take it, or  
(B) use the threat of resigning if necessary to get your rights?
126. Can you  
(A) talk easily to almost anyone for as long as you have to, or  
(B) find a lot to say only to certain people or under certain conditions?
127. When strangers notice you, does it  
(A) make you uncomfortable, or  
(B) not bother you at all?
128. If you were a teacher, would you rather teach  
(A) fact courses, or  
(B) courses involving theory?
129. When something starts to be the fashion, are you usually  
(A) one of the first to try it, or  
(B) not much interested?
130. In solving a difficult personal problem, do you  
(A) tend to do more worrying than is useful in reaching a decision, or  
(B) feel no more anxiety than the situation requires?
131. If people seem to slight you, do you  
(A) tell yourself they didn't mean anything by it, or  
(B) distrust their good will and stay on guard with them thereafter?
132. When you have a special job to do, do you like to  
(A) organize it carefully before you start, or  
(B) find out what is necessary as you go along?
133. Do you feel it is a worse fault  
(A) to show too much warmth, or  
(B) not to have warmth enough?
134. When you are at a party, do you like to  
(A) help get things going, or  
(B) let the others have fun in their own way?
135. When a new opportunity comes up, do you  
(A) decide about it fairly quickly, or  
(B) sometimes miss out through taking too long to make up your mind?
136. In managing your life, do you tend to  
(A) undertake too much and get into a tight spot, or  
(B) hold yourself down to what you can comfortably handle?
137. When you find yourself definitely in the wrong, would you rather  
(A) admit you are wrong, or  
(B) not admit it, though everyone knows it,  
(C) or don't you ever find yourself in the wrong?
138. Can the new people you meet tell what you are interested in  
(A) right away, or  
(B) only after they really get to know you?
139. In your home life, when you come to the end of some undertaking, are you  
(A) clear as to what comes next and ready to tackle it, or  
(B) glad to relax until the next inspiration hits you?
140. Do you think it more important to  
(A) be able to see the possibilities in a situation, or  
(B) be able to adjust to the facts as they are?
141. Do you feel that the people whom you know personally owe their successes more to  
(A) ability and hard work, or  
(B) luck, or  
(C) bluff, pull and shoving themselves ahead of others?
142. In getting a job done, do you depend upon  
(A) starting early, so as to finish with time to spare, or  
(B) the extra speed you develop at the last minute?
143. After associating with superstitious people, have you  
(A) found yourself slightly affected by their superstitions, or  
(B) remained entirely unaffected?

*Go on to the next page.*

144. When you don't agree with what has just been said, do you usually  
(A) let it go, or  
(B) put up an argument?
145. Would you rather be considered  
(A) a practical person, or  
(B) an ingenious person?
146. Out of all the good resolutions you may have made, are there  
(A) some you have kept to this day, or  
(B) none that have really lasted?
147. Would you rather work under someone who is  
(A) always kind, or  
(B) always fair?
148. In a large group, do you more often  
(A) introduce others, or  
(B) get introduced?
149. Would you rather have as a friend someone who  
(A) is always coming up with new ideas, or  
(B) has both feet on the ground?
150. When you have to do business with strangers, do you feel  
(A) confident and at ease, or  
(B) a little fussed or afraid that they won't want to bother with you?
151. When it is settled well in advance that you will do a certain thing at a certain time, do you find it  
(A) nice to be able to plan accordingly, or  
(B) a little unpleasant to be tied down?
152. Do you feel that sarcasm  
(A) should never be used where it can hurt people's feelings, or  
(B) is too effective a form of speech to be discarded for such a reason?
153. When you think of some little thing you should do or buy, do you  
(A) often forget it till much later, or  
(B) usually get it down on paper to remind yourself, or  
(C) always carry through on it without reminders?
154. Do you more often let  
(A) your heart rule your head, or  
(B) your head rule your heart?
155. In listening to a new idea, are you more anxious to  
(A) find out all about it, or  
(B) judge whether it is right or wrong?
156. Are you oppressed by  
(A) many different worries, or  
(B) comparatively few?
157. When you don't approve of the way a friend is acting, do you  
(A) wait and see what happens, or  
(B) do or say something about it?
158. Do you feel it is a worse fault to be  
(A) unsympathetic, or  
(B) unreasonable?
159. When a new situation comes up which conflicts with your plans, do you try first to  
(A) change your plans to fit the situation, or  
(B) change the situation to fit your plans?
160. Do you think the people close to you know how you feel  
(A) about most things, or  
(B) only when you have had some special reason to tell them?
161. When you have a serious choice to make, do you  
(A) almost always come to a clear-cut decision, or  
(B) sometimes find it so hard to decide that you do not wholeheartedly follow up either choice?
162. On most matters, do you  
(A) have a pretty definite opinion, or  
(B) like to keep an open mind?
163. As you get to know people better, do you more often find that they  
(A) let you down or disappoint you in some way, or  
(B) improve upon acquaintance?
164. When the truth would not be polite, are you more likely to tell  
(A) a polite lie, or  
(B) the impolite truth?
165. In your way of living, do you prefer to be  
(A) original, or  
(B) conventional?
166. Would you have liked to argue the meaning of  
(A) a lot of these questions, or  
(B) only a few?

APPENDIX C

Sample Distribution of Myers-Briggs Types

## SAMPLE DISTRIBUTION OF MYERS-BRIGGS TYPES

SENSING TYPES		INTUITIVE TYPES		
with THINKING	with FEELING	with FEELING	with THINKING	
<b>ISTJ</b> N=9 %=5.5	<b>ISFJ</b> N=20 %=12.3	<b>INFJ</b> N=5 %=3.1	<b>INTJ</b> N=1 %=.6	JUDGING
<b>ISTP</b> N=2 %=1.2	<b>ISFP</b> N=16 %=9.8	<b>INFP</b> N=9 %=5.5	<b>INTP</b> N=3 %=1.8	INTROVERTS PERCEPTIVE
<b>ESTP</b> N=7 %=4	<b>ESFP</b> N=24 %=14.7	<b>ENFP</b> N=17 %=10.4	<b>ENTP</b> N=4 %=2.5	PERCEPTIVE
<b>ESTJ</b> N=7 %=4.3	<b>ESFJ</b> N=25 %=15.3	<b>ENFJ</b> N=8 %=4.9	<b>ENTJ</b> N=6 %=3.7	EXTRAVERTS JUDGING

N=163

## VITA

Gordon Douglas Schneider was born in Rochester, New York on May 1, 1957. He and his family moved to Asheville, North Carolina during his second grade year and he attended Buncombe County schools until he graduated from T. C. Roberson High School in June, 1975. The following August he entered East Carolina University, where he was very active in academic and extracurricular activities. In May, 1979, he received a Bachelor of Arts degree in Psychology and in June, he began working at Caswell Center for the Mentally Retarded.

In the fall of 1980 he entered Appalachian State University and began study toward a Masters degree in General-Experimental Psychology. While at A.S.U. he held a teaching assistantship the first year and a research-teaching assistantship during the second year, in which he taught the Experimental Psychology lab. He co-authored a research paper, with a faculty member, which he presented at the Southeastern Psychological Association annual meeting in New Orleans during March, 1982. His degree was awarded in December, 1982. Mr. Schneider is currently seeking employment in a

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