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ABSTRACT

PSYCHOLOGICAL TYPES AND TEMPERAMENTS: A
CORRELATIONAL STUDY USING THE MYERS-
BRIGGS TYPE INDICATOR AND THE
TEMPERAMENT INVENTORY

by

Ronda F. Daugherty

Chair: Wilfred G. A. Futcher

ABSTRACT OF GRADUATE STUDENT RESEARCH

Thesis

Andrews University

School of Education

Title: PSYCHOLOGICAL TYPES AND TEMPERAMENTS: A CORRELATIONAL
STUDY USING THE MYERS-BRIGGS TYPE INDICATOR AND THE
TEMPERAMENT INVENTORY

Name of researcher: Ronda F. Daugherty

Name of degree of faculty chair: Wilfred G. A. Futcher, Ph.D.

Date completed: July, 1995

Problem

The purpose of this study was to determine whether there is a significant relationship between the construct of psychological types, as measured by the Myers-Briggs Type Indicator (MBTI), and temperaments, as measured by the Temperament Inventory (TI).

Method

A non-random sample of 113 individuals completed a demographic questionnaire, the MBTI, and the TI. The results of each preference score of the MBTI and the scores on each of the four temperaments from the TI were compared using a

canonical correlation analysis.

Results

There is a significant relationship between the MBTI's psychological types and the TI's temperaments. A preference for extroversion on the MBTI was correlated with a sanguine temperament, while preferences for thinking and judging on the MBTI were correlated with a choleric temperament.

Conclusions

The constructs of psychological types and temperaments should not be considered to be completely independent.

Andrews University

School of Education

PSYCHOLOGICAL TYPES AND TEMPERAMENTS: A
CORRELATIONAL STUDY USING THE MYERS-
BRIGGS TYPE INDICATOR AND THE
TEMPERAMENT INVENTORY

A Thesis

Presented in Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Ronda F. Daugherty

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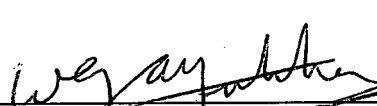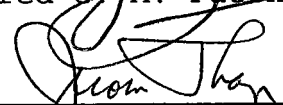
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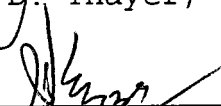
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_____   Aug 1, 1995
Jimmy Kijai, Ph.D.   Date approved

DEDICATION

To the memory of my loving brother, Ronald R. Funderburk II

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CHAPTER 1

INTRODUCTION

Statement of the Problem

An individual's personality defines the person, and
makes him or her different from everyone else. At the
same time, everyone seems to share a finite number of
personality characteristics. If we can understand another
person's personality, we better understand how to relate
to that person, how to interact with him or her, and the
type of behavior to expect from him or her in certain
situations.

Throughout history, scientists and philosophers have
proposed a variety of theories to determine how people's
personalities differ. These theories are the ideas about
how and why people feel, think, and act the way they do.
Most theories incorporate the traditional assumption of
personality theory that an individual's characteristics
are relatively enduring and that they do not change in
meaningful ways from one situation to another (White &
Speisman, 1982). The interest of researchers is
increasing. Plomin and Dunn (1986) noted that the amount
of personality research increased every year from 1970 -

1983. Among the many theories of personality that have developed are those of (1) psychological types and (2) temperaments.

The mostly commonly used method of studying personality is the use of a "personality test." Many psychological tests, or instruments, have been developed to examine different aspects or theories of personality, including the theories of psychological types and temperaments. For the purposes of most research, the theories of psychological types and temperaments have been viewed as separate and unrelated, even though in many areas the theories are similar. However, little research has been done to show an empirical relationship between the two constructs. Windle (1989) states, "Exploring inter-inventory relations facilitates the comparison of constructs which may be labeled similarly (or differently) in various instruments and yet may manifest intercorrelations ranging anywhere from negative one to positive one" (p. 487).

Purpose of Study

The purpose of this study was to determine whether there is a relationship between psychological types, as measured by the Myers-Briggs Type Indicator (MBTI), and temperaments, as measured by the Temperament Inventory (TI). This analysis used quantitative measures to empirically determine the amount of overlap and/or

independence of the constructs measured by these two instruments.

In general, the theory of personality types tries to explain how an individual perceives and thinks about the world around them. The MBTI was "designed explicitly to make it possible to test C. J. Jung's theory of psychological types and to put it to practical use" (Myers & McCaulley, 1985, p. 11). The theory of temperaments tries to explain how a person will respond to their perceptions. The TI expands on Eysenck's four-temperament theory with the ability to score an individual on each of the four temperament scales separately (Cruise, Blitchington, & Futcher, 1980).

If a significant relationship exists between the four factors of temperament theory and each of the four factors in Jung's personality type theory we would be able to explain how an individual perceives their environment by their actions, or how someone will react to their environment based on their perceptions and judgments. If there is no relationship between the two constructs we should continue to view them as separate.

Definition of Terms

The theory of psychological types refers to an individual's preferences in using perception and judgment. Perception is defined as becoming aware of things, and judgment is defined as the way an individual makes

conclusions about what has been perceived (Myers & McCaulley, 1985). The theory of temperament provides a potential framework for explaining and predicting how the unique characteristics of individuals influence their responses to the world around them (McClowry, 1992). Giovannoni, Berens, and Cooper (1988) feel that there are basic differences in the theoretical perspectives of psychological types and temperaments. They state that while psychological types are constructs of mental processes, temperaments are constructs of activity patterns.

Hippocrates first suggested a four-factor theory of temperament (sanguine, melancholic, choleric, and phlegmatic) in 400 B.C. The four Spirit Keepers of the American Indian Medicine Wheel are also suggestive of four temperament patterns, as are the four desires comprising Hindu wisdom (Plomin & Dunn, 1986). Galen of Pergamum (A.D. 130-200) proposed the theory that four humours (fire, earth, air, and water) were the elements of all things, and that a person's physical constitution and psychological characteristics were determined by balancing, or blending the four humours. Galen's theory is the descriptive typology of character, which emerged in the 18th and 19th centuries, and which resembles the extroversion and neuroticism dimensions proposed by Eysenck's theory of temperament today (Stelmack & Stalikas, 1991). Plomin and Dunn (1986) attribute the

beginning of the modern history of temperament research to Thomas and Chess and their New York Longitudinal Study.

In 1920, C. G. Jung contended that people are different in fundamental ways even though they all have the same instincts to drive them. Our preference for a given "function" is characteristic, and so we may be "typed" by this preference. Thus, Jung invented the "function types" or "psychological types" (Keirsey & Bates, 1984).

Research Hypothesis

By looking at the two constructs of psychological types and temperaments, the hypothesis that there is a statistically significant relationship between psychological types and temperaments as measured by the MBTI and the TI was proposed. This enables us to infer relationships between the four temperaments of the TI and the 16 psychological types of the MBTI.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Overview

In completing the research for this analysis, a large number of four factor-theories of personality was encountered. Jung, Myers, Buss, Plomin, Eysenck, and Keirsey are just a few of the theorists with variations on a four-factor theory. Other theories, such as Cloninger's three-factor model and Digman's five-factor model, were also reviewed. In addition, a significant amount of research into the temperament of children was found.

However, the research for this paper focused on the theories behind the development of the MBTI and the TI-- those of Jung, Myers, and Eysenck.

The MBTI

Development of the MBTI

The MBTI was developed specifically to test Jung's theory of psychological types and is one of the few instruments that attempts to measure Jungian constructs. Jung distinguished four basic kinds of mental activity: thinking, feeling, sensing, and intuition, with four

corresponding kinds of introversion and extroversion
(Diamond, 1957). He later classified these constructs
into his four function types. The MBTI alleges to measure
types rather than traits and is often used to explain an
individual's personality characteristics to professionals
and individuals.

Myers and McCaulley (1985) note that Jung described
the functions of extroversion-introversion (EI), sensing-
intuition (SN), and thinking-feeling (TF) explicitly in
his work, while the importance of judgment and perception
(JP) was implicit. Jung theorized that individuals
related to the world through two sets of opposing
functions: the judging functions of thinking and feeling
and the perceiving functions of sensing and intuition. It
was his view that one of these functions is seen as the
dominant, and the second as the auxiliary function (McCrae
& Costa, 1989). In the development of the MBTI, Isabel
Myers and Katherine Briggs assigned two uses to the JP
function. "The recognition and development of facts about
the JP function are a major contribution of Briggs and
Myers to the theory of psychological types" (Myers &
McCaulley, 1985, p. 13). The JP function describes
identifiable attitudes and behaviors to the outside world
and is used, in conjunction with the EI function, to
identify which of the two preferred functions is the
leading or dominant function and which is the auxiliary
(Myers & McCaulley, 1985).

In addition to eight preference types described by
Jung, Myers and Briggs used the following assumptions in
developing the MBTI:

1. For each type, one function will be dominant.
This is the first function.

2. Members of each type will use mainly their first
function in the favorite attitude. That is, extroverts
use the dominant function mainly in the outer world of
extroversion; introverts use the dominant function mainly
in the introverted world of concepts and ideas.

3. In addition to the first or dominant function, a
second or auxiliary function will develop.

4. The second function provides balance between
introversion and extroversion.

5. The second function also provides a balance
between perception and judgment.

6. For both extroverts and introverts, the JP
preference points to the function used in the extroverted
attitude.

7. If the dominant function is typically
introverted, the other three functions are typically
extroverted. If the dominant function is typically
extroverted, the other three are typically introverted
(Myers & McCaulley, 1985).

The construction of the MBTI was also based on the
assumptions that (1) true preferences for one pole of a
function actually existed, (2) that a person could give an

indication of the preferences that combine to form type, directly or indirectly on a self-report inventory, (3) that preferences are dichotomized, and (4) that the two poles of a preference are equally valuable (Myers & McCaulley, 1985). McCrae and Costa (1989) point out that Myers and Briggs also relied heavily on their own observations of individuals they considered as examples of different types and on traditional psychometric procedures, such as item-scale correlations.

Defining the Four MBTI Functions

Extroversion and Introversion: The attitudes of extroversion and introversion are seen as complementary attitudes towards life. Individuals with an extroverted attitude have an awareness and reliance on their environment for stimulation and guidance. They are sociable and enjoy people. Individuals with an introverted attitude rely on themselves and are more interested in concepts and ideas.

Sensing and Intuition: The functions of sensing and intuition deal with how an individual perceives the flow of events in life. An individual oriented toward sensing tends to focus on what is happening at the present moment, while an individual who relies on intuition sees possibilities beyond what is visible to the senses.

Thinking and Feeling: Thinking and feeling are functions that focus on harmonizing life events with the

laws of reason. Thinking individuals are often objective and critical; they rely on the principles of cause and effect. People with an orientation toward feeling base their decisions on subjective values; they have a good understanding of people.

Judging and Perceiving: In addition to describing attitudes and behaviors, the judging and perceiving function is used with the extroversion and introversion functions in determining dominant and auxiliary functions. Judging types are concerned with decision making and logical analysis. They often appear organized and decisive. Individuals with a perceptive attitude are aware of what is going on around them and are often spontaneous and adaptable (Myers & McCaulley, 1985).

Output of the MBTI

The MBTI dichotomizes each of the four scales at a theoretically fixed zero point to show a preference for one end of each scale: EI, SN, TF, and JP. It also provides a four-letter classification code for an individual's type preference. The first letter is an individual's preference of extroversion (E) or introversion (I); the second his or her preference for sensing (S) or intuition (N); the third his or her preference for thinking (T) or feeling (F); and the fourth letter his or her preference for judging (J) or perceiving (P). Table 1 is a 4 x 4-type table developed to highlight

the similarities and differences of types by their
placement.

Table 1

4 X 4-Type Table

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Each type has three letters in common with any
adjacent type. Introverted types appear in the first and
second rows, extroverted types in rows 3 and 4. The
mnemonic aid for EI placement is that introverts are more
likely to have their heads "up" in the clouds; extroverts
are more likely to have their feet "down" on the ground.
Sensing types and intuitive types are positioned as they
are named on the SN index, with sensing on the left and
intuition on the right. Feeling types, with their higher
need for affiliation, are the two inner columns surrounded
by other types. The more objective thinking types are in
the outer columns. The decisive judging types are on the
top and bottom rows, and the more adaptable perceptive
types are in the middle rows (Myers & McCaulley, 1985).

The MBTI and Temperament

Giovannoni et al. (1988) used the MBTI to study the

construct of temperament as well as psychological types.
"Although designed for use with a different theoretical
framework, the MBTI seems to work with reasonable accuracy
for identifying temperament as well" (p. 1). Keirsey and
Bates (1984) discuss a similar form of temperament with
the MBTI as a basis. These temperament theories focus on
the combinations of the SN, TF, and JP indices of the
MBTI.

The TI

Development of the TI

The TI is one of the few scientifically researched
instruments based on the four-temperament theory
(Blitchington & Cruise, 1979). It was developed as an
extension of Eysenck's four-temperament theory. His
instrument, the Eysenck Personality Inventory (EPI),
measures two dimensions of personality:
introversion/extroversion and high/low neuroticism.
Combined, these yield four temperaments: neurotic
introvert, neurotic extrovert, stable introvert, and
stable extrovert (Cruise et al., 1980). Eysenck's four
temperaments correspond to the four temperaments suggested
by Hippocrates: melancholic, choleric, phlegmatic, and
sanguine.

Buss and Plomin (1975) have also done considerable
research on a four-temperament theory. They developed the
EASI Temperament Survey (EASI) to measure the temperaments

of emotionality, activity, sociability, and impulsivity. Unlike the EPI, the EASI provides a score on each of the four temperaments. However, it does not retain Eysenck's original temperament scheme.

In developing the TI, Cruise et al. (1980) retained Eysenck's original four-temperament scheme with the added capacity to score separately an individual on each of the four temperament scales. This allows an individual to look at the combination of temperaments when explaining personality. Blitchington and Cruise (1979) felt that this was an important addition to Eysenck's theory "because the traits and behaviors usually associated with on the temperament can be modified or changed around depending on the secondary temperament(s)" (p. 15).

Defining the Four Temperaments

Choleric: Cholerics are generally bold and aggressive in social situations. They tend to be argumentative and insensitive to the needs and feelings of others. Cholerics are often full of energy and can be very efficient and productive if the energy is channeled into a specific task.

Sanguine: Sanguines are friendly, talkative, and outgoing. When sanguines are with other people they are usually cheerful and expressive. However, they are also easily distracted by new objects or events. Often, a sanguine's distractible nature makes them appear

unorganized.

Melancholy: Melancholics have a lot of emotional
energy and anxiety, which may cause them to perform poorly
under pressure. They are often seen as moody and
sensitive to criticism. Melancholics are very creative
and have good problem-solving skills. They have high
standards for themselves and others, sometimes
unobtainably high, which can cause melancholics to punish
themselves for falling below their own standards.

Phlegmatic: Phlegmatics are calm and easygoing.
They are good peacemakers and do not like conflict.
Phlegmatics adapt easily to new environments, people, and
procedures. Their actions are unhurried and deliberate
and are sometimes seen by others as bland.

Output of the TI

The TI provides a raw score and a percentile rank for
that score on each of the four temperaments. The higher
the percentile rank, the more personality characteristics
of that temperament are seen in the individual. In
contradiction to some theorists, the TI does not subscribe
to the idea of mutual exclusion among the four
temperaments. The combination of percentile ranks across
temperaments is to be used by individuals to describe
themselves across multiple temperaments. This is the key
to the interpretation of the TI, since

> a person who scores at the 85th percentile on the
> sanguine scale and the 50th percentile on the

melancholic scale (a sanguine-melancholy) will be
somewhat different from a person who scores at the
85th percentile on the sanguine scale and at the 60th
percentile on the phlegmatic scale (a sanguine-
phlegmatic). (Blitchington & Cruise, 1979, p. 15)

Synopsis of Literature

The MBTI is the predominant instrument used to
measure the Jungian constructs of psychological types.
The four functions, or types, purportedly measured by the
MBTI are EI, SN, TF, and JP. An individual's type is
measured by a four-letter classification representing his
or her preference on each of the four functions, such as
ESFP.

A four-factor theory of temperament is measured by
only a few instruments, one of which is the TI. The TI is
based on Eysenck's theory of temperament. It differs from
the Eysenck Personality Inventory by allowing an
individual to receive a temperament score on each of the
four temperament scales, Choleric, Sanguine, Melancholic,
and Phlegmatic. An individual is assigned a raw score and
a percentile rank on each scale.

CHAPTER 3

METHODOLOGY

Subjects

A non-random sample of 113 individuals volunteered to
complete a demographic questionnaire, Form G of the MBTI,
and the TI. A copy of each of these instruments is
provided in the Appendix. The individuals were provided
with the results of the MBTI and the TI if they so
requested.

The sample consisted largely of graduate students
from Andrews University and research and marketing
professionals from Chicago. The sample was comprised of
47 males (42%) and 66 females (58%). The average
respondent was White, and in his or her early 30s, and
lived in the Midwest. The average age of respondents was
32, with a median age of 29 and a range from 14 to 60.
The sample was heavily weighted toward Whites between the
ages of 18 and 44. Table 2 provides a breakdown of the
race, gender, and ages of the respondents. Two
respondents did not provide this demographic information
and are excluded from Table 2.

Myers and McCaulley (1985) indicate that the MBTI is

Table 2

Demographic Make-up of Survey Respondents

Age Group	White Males	White Females	Black Males	Black Females	Other Males	Other Females	Totals
< 18		7			1		8
18-24	15	12					27
25-34	9	10		2	1	2	24
35-44	9	20		2			31
45-54	7	5	1	1			14
> 54	3	3			1		7
Totals	43	57	1	5	3	2	111

appropriate for use with adults and high-school students with a seventh- to eighth- grade reading level (p. 6). Since there are no corresponding published guidelines for use of the TI, the same guidelines were used. The respondents in the sample used here fit this general profile.

Instrumentation

The MBTI

The MBTI was developed by Isabel Myers and Katharine Briggs in the early 1960s. It was chosen as the instrument to measure psychological types based on its popularity and the large amount of research that has been done to support its use. The form chosen for administering the MBTI, Form G, is self-scorable and

virtually self-administering. It consists of 126 questions. Most items have a forced choice between two responses (because of the dichotomies postulated by the type theory), although some have more response options, and respondents are sometimes allowed to endorse more than one response. The preference score for each function consists of a letter showing the direction of the preference and a number showing the strength of the preference. Preference is determined by the greater of the two preference scores, with provisions for breaking ties, and a four-letter code summarizes all four sets of preferences and specifies the type into which the individual is classified (Myers & McCaulley, 1985). This form made administering the MBTI to the sample of individuals relatively easy and allowed study participants immediate feedback of their psychological types as measured by the MBTI.

The reliability and statistical validity of the MBTI have been proven and tested in the development of each form. In addition, many validation studies have verified the four psychological types and the use of the MBTI.

Reliability and validity

In developing the MBTI, two forms of reliability were measured: internal consistency reliability and test-retest reliability. It was verified that the estimates of internal consistency reliabilities, as

estimated by coefficient alpha, for the continuous scores
of the MBTI scales were acceptable for most adult samples.
A sample of 9,216 individual results from the MBTI data
bank had the following results for coefficient alpha
(decimals have been omitted): EI, 83; SN, 83; TF, 76; JP,
80. Note that the TF function was found to have the
lowest reliability (Myers & McCaulley, 1985).

All measures of test-retest reliabilities of the MBTI
showed consistency over time. The reliability methods
used included the correlations of continuous scores, the
proportion of cases assigned the same direction of
preference on retest, and the percentage of cases
reporting the same four preferences on retest. A trend
was found that showed most changes in preference occurring
in cases where the original preference score was low.
Table 3 shows a summary of test-retest agreement of type
categories for a number of samples. The numbers in the
third set of columns of Table 3 reflect the percentage of
respondents who had the same preference score on that
function at retest. The fourth set of columns indicates
the percentage of individuals for which 4, 3, 2, or 1
preference scores did not change on retest.

The validity of the MBTI was determined by its
ability to classify individuals into each of Jung's
psychological types. Content validity of the MBTI,
construct validity, and concurrent validity were addressed
in the creation of the MBTI. Myers and McCaulley (1985)

Table 3

Test-retest Agreement of Type Categories

N	Test-Retest Interval	% of Agreement in each MBTI Category				% of Categories Unchanged on Retest				
		EI	SN	TF	JP	4	3	2	1	0
126	14-17 mos.	76	87	75	77	37	44	16	4	0
329	2 years	74	71	73	77	31	39	22	7	0
177	5 weeks	81	89	83	84	48	37	13	0	0
120	4.5 years	72	66	68	66	24	37	29	8	0

Note. From *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator* (p. 173), by I. B. Myers and M. H. McCaulley, 1985, Palo Alto, CA: Consulting Psychologists Press. Copyright 1985 by Peter B. Myers and Katherine D. Myers.

indicate that item selection was based only on the empirical evidence that the items separated persons with opposing preferences. Items were analyzed on all preferences, and those with high correlations on more than one preference scale were eliminated. The item correlations ranged from 0.92 to 0.22.

Construct validity of the MBTI was confirmed by noting the consistency of the behavior of the MBTI types with behavior predicted by theory.

The concurrent validity was verified by the fact that the MBTI continuous scores correlated in the expected directions with other instruments that appeared to be testing the same constructs, such as the California Psychological Inventory, the Jungian Type Survey, and the Eysenck Personality Questionnaires.

Johnson and Saunders (1990) completed a confirmatory factor analysis on the MBTI. Their results validated the four-factor theory as well-defined constructs.

The TI

There are fewer instruments that measure psychological temperaments. One of the most popular measures developed by Keirsey and Bates (1984) was not selected since its development was based on many of the same constructs as the MBTI.

The TI, developed by Cruise et al. in the early 1980s, was chosen to be administered alongside the MBTI. There is only one format of the TI; it can be self-administered and scored. Immediate feedback was available to study participants about their temperament, as measured by the TI.

The TI consists of 80 statements that require a "Yes" (this is like me) or "No" (this is not like me) response. Five of the items are counted on two factors because they had loadings over 0.30 on each of the two factors and were judged to be valid on both. The scores on each of the four factors are expressed in percentile ranks after summing the number of "like me" responses (or "unlike" responses in the case of a negative item loading on the factor).

Reliability and validity

Reliability of each of the four TI factors was

verified during the development of the instrument by the use of Cronbach's Coefficient Alpha, an estimate of internal consistency. Reliability estimates for the four subscales were: (1) Phlegmatic = 0.88, (2) Choleric = 0.84, (3) Sanguine = 0.90, and (4) Melancholic = 0.88 (Cruise et al., 1980).

Content validity, construct validity, and concurrent validity were each studied during the development of the TI. Content validity was determined by a panel of judges based on the definitions of temperament suggested in the literature and whether items were clearly worded. A factor analysis was also completed to determine the content validity of each item. Items exhibiting low variance and skewness were eliminated, as were items with factor loadings below 0.30 (Cruise et al., 1980).

Construct validity was verified using a factor analysis yielding four factors hypothesized as the components of temperament. Concurrent validity was tested using the Eysenck Personality Inventory. Using factor scores, there was agreement on two factors in 34% of cases, agreement on one factor in 61%, and agreement on zero factors in only 5% of cases (Cruise et al., 1980).

A factor analysis confirmed the presence of four factors. The distribution of factor scores using the factor score coefficients on all items and the distribution from the four subtests of items (where new factor scores were obtained for each respondent by summing

the number of responses to the items included in that factor) were compared using the Product Moment Correlation Coefficient. The results from 3,409 respondents: (1) Phlegmatic, r=0.86; (2) Sanguine, r=0.98; (3) Choleric, r=0.95; (4) Melancholic, r=0.83 (Cruise et al., 1980).

The Demographic Questionnaire

A demographic questionnaire was created in order to tabulate demographic statistics on the make-up of the sample. By having a separate questionnaire, individuals who wished to do so could remain anonymous. The questionnaire asked the individual's gender, age, number of years of schooling completed, state of residence, and race. A copy of the questionnaire can be found in the Appendix.

Data Collection

The information from the demographic questionnaire and the results of the MBTI and TI were entered into a SPSS/PC+ database for further analysis.

The MBTI

In order to complete a correlational analysis using the MBTI, the individual raw scores for each of the four preferences were totalled and converted to continuous scores. This allowed treatment of the dichotomous preference scores as continuous scales. Raw scores consist of a letter denoting the pole of the preference on

each factor. Points for each pole of the preference are compared, the pole with the greater number of points is determined to be the preference score. For example, if an individual scored 18 on the E pole and 7 on the I pole of the EI index, his or her preference score for the EI index would be E with a numeric preference score of 18.

For E, S, T, or J preference scores, the continuous score is calculated by taking 100 minus the numerical portion of the preference score. For I, N, F, or P preference scores, the continuous score is 100 plus the numerical portion of the preference score (Myers & McCaulley, 1985). The continuous scores correspond to the difference between opposing preferences and have a theoretical neutral point of 100. There were no missing preference scores.

The TI

The individual raw scores for each of the four factors from the TI were converted to percentile ranks for reporting to respondents. The percentile ranks were converted to standardized T scores for analysis using the following formula: $T = 50 + 10z$. z was determined from the percentile rank and a normalized table. The T scores were used in the correlational analysis with the continuous scores from the MBTI. There were no missing percentile ranks.

Null Hypothesis

The null hypothesis states: There is no significant canonical correlation between a linear combination of the four TI variables and a linear combination of the four MBTI variables.

CHAPTER 4

DATA ANALYSIS

Methods

The MBTI continuous scores and the TI standardized
scores were analyzed using the canonical correlation
analysis method developed by Hotelling with a 0.05
significance level. Tatsuoka (1988) noted that the most
common application of canonical analysis was that of
seeking relationships between two sets of variables.
Canonical analysis helps to answer the question: What
combination of MBTI preferences tend to be associated with
what combination of TI scores? The results of the
canonical correlation were examined to determine whether
there was any significant linear relationship between the
two sets of variables.

Results

The first step of analysis was to run descriptive
statistics on the data. Table 4 shows the mean, standard
deviation, and minimum and maximum values for the standard
scores from the MBTI and the TI. The next step was a
simple correlation between each of the variables of the

Table 4

<u>Descriptive Statistics</u>

Variable	Mean	Standard Deviation	Minimum Standard Score	Maximum Standard Score
Phlegmatic	49.956	9.868	-2.22	1.52
Sanguine	49.938	10.031	-1.89	1.60
Choleric	50.150	10.162	-1.98	1.26
Melancholy	50.097	10.073	-1.70	2.08
EI	100.027	27.240	-1.95	2.09
SN	97.035	30.687	-1.89	2.35
TF	94.540	23.420	-2.54	1.90
JP	96.558	29.161	-1.77	2.14

Table 5

<u>Correlation Matrix</u>

	Phleg	Sang	Chol	Melan	EI	SN	TF	JP
Phleg	1.000							
Sang	0.080	1.000						
Chol	0.122	-0.020	1.000					
Melan	-0.613	-0.304	-0.331	1.000				
EI	0.049	**-0.797**	-0.033	0.178	1.000			
SN	0.084	0.068	-0.087	-0.035	0.073	1.000		
TF	0.074	0.061	**-0.340**	0.042	-0.048	0.064	1.000	
JP	-0.060	**0.237**	**-0.330**	0.044	-0.184	0.295	0.288	1.000

MBTI and the TI. Table 5 is the resulting correlation matrix. Each of these variables was used in the canonical correlation. The significant correlations are noted in bold. The sanguine variable from the TI has a correlation of -0.797 with the EI function and a correlation of 0.237 with the JP function of the MBTI, meaning that a sanguine temperament is correlated with extroversion and perceiving. These relationships are not surprising. By definition sanguines are friendly, outgoing, and adaptable. An extrovert is defined as being sociable and enjoying people and individuals with a perceptive aptitude are often defined as spontaneous and adaptable.

The Choleric temperament is significantly correlated with the thinking and judging preferences, with a correlation of -0.340 with the TF function and a correlation of -0.330 with the JP function. Again, this not surprising when the definitions of thinking, judging, and choleric are examined. A thinking preference score shows someone who is objective and critical and a judging preference score describes someone who is good at making decisions and logical analysis. These traits would be seen in an effective and productive worker, a partial definition of someone with a choleric temperament.

The results of the canonical correlation show that there is a significant relationship between the four MBTI factors and the four TI temperaments. The null hypothesis is rejected. The output from the first step of the

canonical correlation analysis is detailed in Table 6.

Bartlett's Test for Remaining Eigenvalues can be

interpreted that two canonical variables are needed to

express the dependency between the two sets of variables

using a test at the 0.05 level. Two is the smallest

number of eigenvalues such that the test of the remaining

eigenvalues is not significant. The canonical

correlation, is 0.82, representing 67% overlapping

variance between the first pair of canonical variates.

The second canonical correlation is 0.43, representing 19%

overlapping variance between the second pair of canonical

variates. The first two eigenvalues account for the

significant linkages between the two sets of variables.

The remaining two eigenvalues were not significant,

accounting for less than 3% of the overlapping variance.

Table 6

Bartlett's Test for Remaining Eigenvalues

Eigen-value	Canonical Correlation	Number of Eigenvalues	Chi Square	d.f.	Signifi-cance
			143.65	16	0.00
0.67	0.82	1	25.06	9	0.00
0.19	0.43	2	2.59	4	0.63
0.02	0.15	3	0.01	1	0.91
0.00	0.01				

Critical to interpretation are the loading matrices

shown in Table 7. Correlations between variables and

canonical variates greater than 0.30 were considered

eligible for interpretation (Tabachnick & Fidell, 1983).
With a cutoff correlation of 0.30 for interpretation, the
variable relevant to the first canonical variate in the TI
set is Sanguine. Among the MBTI variables, only the EI
variable was relevant. The first canonical variate
indicates that a high Sanguine (0.99) tends to be related
to the low end of the EI scale (-0.99). The second
canonical variate indicates that a high Choleric score
(0.98) tends to be related to the lower end of the TF
scale (-0.82) and the lower end of the JP scale (-0.75).

Table 7

Canonical Variable Loadings

Coefficients for Canonical Variables of the First Set:

	Function 1	Function 2
Phlegmatic	-0.06	-0.05
Sanguine	0.99	-0.06
Choleric	0.01	0.98
Melancholy	-0.22	-0.21

Coefficients for Canonical Variables of the Second Set:

	Function 1	Function 2
EI	-0.99	-0.06
SN	0.06	-0.24
TF	0.04	-0.82
JP	0.28	-0.75

Interpretation

The results of the canonical correlation did reveal
an overall correlation between the MBTI's four
psychological types and the TI's four temperaments. It

did not, however, show a correlation between every type and every temperament.

The sanguine temperament appeared to be associated with extroversion both in the simple correlational analysis and the canonical correlation. Since the literature describes both extroverts and sanguines as having the same personality characteristics (outgoing, friendly, one who enjoys people), this result is not surprising. Blitchington and Cruise (1979) state that "Sanguines personify the term 'extrovert'" (p. 16). The simple correlational analysis also yielded a correlation between the sanguine temperament and the judging preference type, which was not determined to be significant in the canonical correlation.

As in the simple correlational analysis, the canonical correlation found the choleric temperament appeared to be associated with the thinking and judging preferences. Again, the results are not surprising based on the definitions found in the literature.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This section summarizes the problem, purpose of the study, the literature reviewed, the methodology followed, and the findings.

Problem and Purpose

Among the many theories that have been developed to explain differences and similarities in individual personalities are those of psychological types and temperaments. The purpose of this study was to determine whether there was a statistically significant relationship between the two constructs of psychological types, as measured by the MBTI, and temperaments, as measured by the TI.

Literature Review

The four-factor theory of personality is the prevailing theory found in the literature. Jung, Myers, Cruise, Buss, Eysenck, and others all have variations on four-factor theory. Other authors, such as Cloninger, have suggested a three-factor theory, while Digman

suggests a five-factor model.

The MBTI is an instrument designed to measure Jung's theory of psychological types. It appears to be the most common and most widely researched instrument based on Jung's theory. Several instruments have been created based on Eysenck's theory. The TI was chosen because of the ability to score individuals on each of the temperaments in Eysenck's four-temperament theory.

Methodology

A canonical correlation analysis was completed to determine whether a correlation existed between the four preference scores of the MBTI and the scores on each of the four temperaments measured by the TI. A significance level of 0.05 was used.

Findings

Results of the canonical correlation indicated that there is a significant relationship between psychological types, as measured by the MBTI, and temperaments, as measured by the TI. A preference for extroversion on the EI preference scale of the MBTI was correlated with a high Sanguine temperament score on the TI. A preference for thinking on the TF preference scale and for judging on the JP preference scale of the MBTI was correlated with a high Choleric temperament score on the TI. Other MBTI preferences are not significantly correlated with a specific temperament.

Conclusions

The constructs of psychological types and temperaments should not be considered to be completely independent. Individuals with a choleric temperament will tend to have thinking and judging preferences. Individuals with a sanguine temperament will tend to be extroverted. And although the definitions vary (psychological types tend to be defined as processes, while temperament tends to be defined as how people react to situations, or their behavior), each has a bearing on the other. If you understand someone's psychological type, you can better estimate how they may react in a certain situation. The opposite is also true: a person's behavior gives you insights into how they are perceiving the situation.

Recommendations

It may be of use to duplicate this study with individuals of a wider age range, ethnic background and professional experience. Many researchers debate the impact of genetics on behavior and temperament because of the aspects of temperament that can be seen in very young children (Plomin & Dunn, 1986). At the same time, "Jungian theory suggests that a balance between opposing functions should be developed later in life" (McCrae & Cost, 1989, p. 27). The sample chosen here was predominantly young adults, and the results may differ

with an older or a younger sample.

In addition, the intra-inventory correlations found among the variables of the TI were higher than expected and higher than those found in the development of the TI. This may be because of the similarity of the individuals completing the TI and the relatively small sample size.

It is also suggested that further research be completed to examine the combination of psychological types (the four-letter combination of preference scores) and the interactions of psychological temperaments.

APPENDIX

Demographic Questionnaire

Thank you for taking the time to complete the *Myers-Briggs Type Indicator* and the *Temperament Inventory*. Directions are provided at the top of each instrument. Do not put your name and address on the instruments unless you would like the results sent to you.

The information from these forms will be confidential. This sheet will provide additional demographic information about you; if you do not wish to answer any of the questions, just leave them blank.

Gender: _____ Male _____Female

Age at last birthday: _____

Number of years of schooling completed: _____

State of Residence: _____

Race (check applicable line):
_____White Non-Hispanic
_____Black Non-Hispanic
_____Hispanic
_____Asian or Pacific Islander
_____American Indian
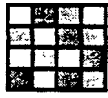
Myers-Briggs Type Indicator®

Form G — Self-Scorable Question Booklet

Katharine C. Briggs
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 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 booklet. *Make no marks on this question booklet*. Do not think too long about any question. If you cannot decide how to answer a question, skip it and return to it later.

When reading the questions, be sure to follow the question numbers and work ACROSS the page from left to right. When you mark your answers on the separate answer booklet, you will also work across the page.

There are two parts to this question booklet. Part I is above the shaded line; the instructions for this part are at the top of the page. Part II is below the shaded line; the instructions for this part are at the bottom of the page. Be sure to read and follow the separate directions for each part.

Read the directions on the front of the answer booklet. After reading each question, mark your answer by making an "X" in the appropriate box.

When you finish answering all the questions, read the directions at the bottom of your answer booklet for how to score your MBTI™. Be sure to turn in your question booklet when you have finished with it.

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577 College Avenue, Palo Alto, CA 94306

PART I (above the shaded line). Which Answer Comes Closer to Telling How You Usually Feel or Act?

WORK ACROSS ——————▶

1. Are you usually
   (A) a "good mixer," or
   (B) rather quiet and reserved?

2. If you were a teacher, would you rather teach
   (A) fact courses, or
   (B) courses involving theory?

3. Do you more often let
   (A) your heart rule your head, or
   (B) your head rule your heart?

4. When you go somewhere for the day, would you rather
   (A) plan what you will do and when, or
   (B) just go?

---

5. When you are with a group of people, would you usually rather
   (A) join in the talk of the group, or
   (B) talk with one person at a time?

6. Do you usually get along better with
   (A) imaginative people, or
   (B) realistic people?

7. Is it a higher compliment to be called
   (A) a person of real feeling, or
   (B) a consistently reasonable person?

8. 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?

---

9. In a large group, do you more often
   (A) introduce others, or
   (B) get introduced?

10. Would you rather be considered
    (A) a practical person, or
    (B) an ingenious person?

11. Do you usually
    (A) value sentiment more than logic, or
    (B) value logic more than sentiment?

12. Are you more successful
    (A) at dealing with the unexpected and seeing quickly what should be done, or
    (B) at following a carefully worked out plan?

---

13. Do you tend to have
    (A) deep friendships with a very few people, or
    (B) broad friendships with many different people?

14. 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?

15. Do you feel it is a worse fault to be
    (A) unsympathetic, or
    (B) unreasonable?

16. Does following a schedule
    (A) appeal to you, or
    (B) cramp you?

---

17. Among your friends, are you
    (A) one of the last to hear what is going on, or
    (B) full of news about everybody?

18. Would you rather have as a friend
    (A) someone who is always coming up with new ideas, or
    (B) someone who has both feet on the ground?

19. Would you rather work under someone who is
    (A) always kind, or
    (B) always fair?

20. Does the idea of making a list of what you should get done over a weekend
    (A) appeal to you, or
    (B) leave you cold, or
    (C) positively depress you?

---

21. Do 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?

22. 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?

23. Do you feel it is a worse fault
    (A) to show too much warmth, or
    (B) not to have warmth enough?

[On this next question *only*, if two answers are true, mark both.]
24. 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?

---

25. 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?

26. 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?

27. Are you more careful about
    (A) people's feelings, or
    (B) their rights?

PART II (see instructions below).

28. 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?

---

29. Do you usually
    (A) show your feelings freely, or
    (B) keep your feelings to yourself?

30. In your way of living, do you prefer to be
    (A) original, or

31. (A) gentle
    (B) firm

32. 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 accord-ingly, or |
| | | | (B) a little unpleasant to be tied down? |

33. Would you say you (A) get more enthusiastic about things than the average person, or (B) get less excited about things than the average person?	**34.** Is it higher praise to say someone has (A) vision, or (B) common sense?	**35.** (A) thinking (B) feeling	**36.** Do you (A) rather prefer to do things at the last minute, or (B) find doing things at the last minute hard on the nerves?
37. At parties, do you (A) sometimes get bored, or (B) always have fun?	**38.** Do you think it more important to be able (A) to see the possibilities in a situation, or (B) to adjust to the facts as they are?	**39.** (A) convincing (B) touching	**40.** Do you think that having a daily routine is (A) a comfortable way to get things done, or (B) painful even when necessary?
41. When something new starts to be the fashion, are you usually (A) one of the first to try it, or (B) not much interested?	**42.** Would you rather (A) support the established methods of doing good, or (B) analyze what is still wrong and attack unsolved problems?	**43.** (A) analyze (B) sympathize	**44.** 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?
45. Are you (A) easy to get to know, or (B) hard to get to know?	**46.** (A) facts (B) ideas	**47.** (A) justice (B) mercy	**48.** Is it harder for you to adapt to (A) routine, or (B) constant change?
49. 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?	**50.** (A) statement (B) concept	**51.** (A) compassion (B) foresight	**52.** 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?
53. 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?	**54.** (A) theory (B) certainty	**55.** (A) benefits (B) blessings	**56.** In getting a job done, do you depend on (A) starting early, so as to finish with time to spare, or (B) the extra speed you develop at the last minute?
57. 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?	**58.** (A) literal (B) figurative	**59.** (A) determined (B) devoted	**60.** 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?
61. (A) hearty (B) quiet	**62.** (A) imaginative (B) matter-of-fact	**63.** (A) firm-minded (B) warm-hearted	**64.** Do you find the more routine parts of your day (A) restful, or (B) boring?

(continued)

PART II (below the shaded line). Which Word in Each Pair Appeals to You More?
Think what the words mean, not how they look or how they sound.

PART II (continued). Which Word in Each Pair Appeals to You More?
Think what the words mean, not how they look or how they sound.

WORK ACROSS →

65. (A) reserved (B) talkative	66. (A) make (B) create	67. (A) peacemaker (B) judge	68. (A) scheduled (B) unplanned
69. (A) calm (B) lively	70. (A) sensible (B) fascinating	71. (A) soft (B) hard	72. (A) systematic (B) spontaneous
73. (A) speak (B) write	74. (A) production (B) design	75. (A) forgive (B) tolerate	76. (A) systematic (B) casual
77. (A) sociable (B) detached	78. (A) concrete (B) abstract	79. (A) who (B) what	80. (A) impulse (B) decision
81. (A) party (B) theater	82. (A) build (B) invent	83. (A) uncritical (B) critical	84. (A) punctual (B) leisurely
	85. (A) foundation (B) spire	86. (A) wary (B) trustful	87. (A) changing (B) permanent
	88. (A) theory (B) experience	89. (A) agree (B) discuss	90. (A) orderly (B) easygoing
	91. (A) sign (B) symbol		92. (A) quick (B) careful
	93. (A) accept (B) change		
	94. (A) known (B) unknown		

40

WORK ACROSS———►

1 A B	2 A B	3 A B	4 A B
5 A B	6 A B	7 A B	8 A B
9 A B	10 A B	11 A B	12 A B
13 A B	14 A B	15 A B	16 A B
17 A B	18 A B	19 A B	20 A B C
21 A B	22 A B	23 A B	24 A B C
25 A B	26 A B	27 A B	28 A B
29 A B	30 A B	31 A B	32 A B
33 A B	34 A B	35 A B	36 A B
37 A B	38 A B	39 A B	40 A B
41 A B	42 A B	43 A B	44 A B C
45 A B	46 A B	47 A B	48 A B
49 A B C	50 A B	51 A B	52 A B
53 A B	54 A B	55 A B	56 A B
57 A B	58 A B	59 A B	60 A B C
61 A B	62 A B	63 A B	64 A B
65 A B	66 A B	67 A B	68 A B
69 A B	70 A B	71 A B	72 A B
73 A B	74 A B	75 A B	76 A B
77 A B	78 A B	79 A B	80 A B
81 A B	82 A B	83 A B	84 A B
	85 A B	86 A B	87 A B
	88 A B	89 A B	90 A B
	91 A B		92 A B
	93 A B		
	94 A B		

Myers-Briggs Type Indicator™
Form G — Self-Scorable
Answer Booklet

Directions

Mark your answers by making an "X" in the appropriate box. If you make a mistake, simply blacken in the box where the error is—**do not erase.** The numbers go ACROSS the page, just like the questions in the question booklet.

When you have answered every question, open this booklet and follow the directions for scoring.

Name: _____

Date: _____ Sex: M ☐ F ☐ Age: _____

Occupation: _____

Years of schooling: _____

Group: _____

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E	I	S	N	T	F	J	P
2	2	2	2	1 2 / 2 1		2 / 2	
1 / 2	2	2 / 1		2 2 / 1 1		2 / 1	
2 / 2	2 / 2	2 2 / 2 2			1 / 1		
1 / 2	1 / 2	0 0 / 2 1			2 / 2		
1 / 2	1 / 2	0 0 / 2 1			1 / 1 1		
2 / 2	1 / 0	1 1 / 0 0			0 / 1 1		
1 / 1	1 / 1	2 1 / 0 0			1 / 2		
1 / 0	1 / 0	2 2 / 0 1			1 / 1		
1 / 1	1 / 2	2 2 / 1 2			1 / 1		
1 / 2	1 / 0	2 2 / 1 2			0 / 2		
0 / 2	2 / 0	1 2 / 2 2			1 0 / 1		
1 / 2	2 / 1	1 1 / 2 2			1 / 1		
1 0 / 2	2 / 1	2 2 / 1 1			2 / 1		
1 / 1	1 / 2	1 1 / 1 1			0 / 1		
1 / 2	1 / 1	1 1 / 2 1			0 / 1 1		
1 / 2	2 / 0	2 2 / 0 0			1 / 0		
2 / 1	2 / 0	2 2 / 0 0			2 / 2		
1 / 1	2 / 0	2 2 / 0 0			2 / 2		
0 / 1	1 / 0	2 2 / 0 0			2 / 2		
1 / 1	1 / 2	1 1 / 0 0			1 / 2		
1 / 0	2 / 1	1 1 / 1 1			1 / 1		
	0 / 2	2 2 / 0 0			1 / 0		
	0 / 2	0 0 / 1 0			2 / 1		
	1 / 0	+1			0 / 1		
	1 / 0						
	1 / 1						

E score	I score	S score	N score	T score	F score	J score	P score
If tie, write "I"		If tie, write "N"		If tie, write "F"		If tie, write "P"	
(E or I) ____		(S or N) ____		(T or F) ____		(J or P) ____	

Your four-letter type

Males use the shaded T and F columns, and females use the unshaded T and F columns.

Directions for Scoring

Working on one column at a time, add the values (0, 1, or 2) for each box containing an "X." Do not count values of boxes that are blackened. Place the total for each column in the box below the column. Follow these steps for each of the eight columns.

For the T and F columns, there are separate values, in different columns, for males and females. Use only the T column and the F column that are appropriate for your sex; **males use the shaded T and F columns, and females use the unshaded T and F columns.** If you are male, be sure to add one point to your T score, as indicated by "+1" at the bottom of that column.

The MBTI measures your preferences on four scales: EI, SN, TF, and JP. To determine your type, compare your two total scores on each scale. Your preference is the one with the higher score. If there are ties between the two numbers on any scale, follow the rule for ties printed below the totals. Write the four letters of your type in the space provided.

Copy your four-letter type onto the space provided on the separate report form. Return the question booklet and this answer booklet to your workshop leader, counselor, or instructor. The report form is yours to keep.

Please fill in the information requested below.

▲ Name

▲ Mailing Address
▼

▲ Phone number

▲ Sex

Directions:

This is an inventory of temperament, and not of "emotional adjustment." There are no better or worse temperaments, only different ones. Neither are there any right or wrong answers. You can indicate whether a statement describes you or not by blackening in the space under the column headed YES or NO.

Only if you are absolutely honest in answering the statements will the test be of any real help to you in understanding yourself.

There is no time limit, but work rapidly and do not spend too much time on any one item. Be sure to answer every item. Now turn over your booklet and begin.

Temperament Inventory

by
Robert J. Cruise, Ph.D.
W. Peter Blitchington, Ph.D.

Put your answers to this page in Column 1.

1. I succeed when some people fail, not because my plans are better, but because I keep pushing when they get discouraged and quit.

2. My calm, tranquil nature usually keeps me from getting upset in the face of external turmoil or stress.

3. I seem to be able to diagnose fairly accurately the obstacles and dangers of projects I am planning.

4. I'm annoyed by the enthusiasm of some people, and I guess I kind of needle them sometimes.

5. I usually allow other people to meet me, rather than pushing forward to meet them.

6. My leadership ability is more the result of drive and persistence than charisma.

7. I am not able to converse easily with other people, but I'm pretty good at sizing them up and analyzing them.

8. I frequently find myself arriving late for engagements and forgetting resolutions.

9. I am more the kind of person who is deeply loyal to the few friends I have than the kind of person who has a lot of friends.

10. I tend to be motivated by the crowd (or situation). If they are busy I get busy, if they aren't I'm not.

11. I am self-motivated. If something is there to be done, I can't be satisfied until I've completed it.

12. I usually prefer solitary activities, such as reading, to activities which involve other people.

13. I go over and over decisions after I make them, asking myself if I chose right.

14. I sometimes only halfheartedly help others because deep down inside I think I have a better plan and an easier way.

15. I tend to remember when people have insulted me and to think about it every now and then.

16. I really enjoy myself, and my attitude seems to be contagious to those around me.

17. In my introspection I tend to relive over and over again the events of the past.

18. I have a fairly keen mind and can usually plan worthwhile long-range projects.

19. I'd probably be more sociable if I weren't afraid people would reject me.

20. I like to be where there is something going on all the time.

21. It makes me gloomy when other people ignore or avoid me.

22. Some people say that I am a born leader because of my tendency to ''take over.''

23. I know where I want to go and I usually discipline myself to get there.

24. I have a tendency to hold grudges against people who are rude to me.

25. I tend to be emotional. Things arouse or upset me pretty easily.

26. It usually takes something drastic to get me excited or upset.

27. I have a rather even-tempered emotional response to things.

Put your answers to this page in Column 2.

28. Sometimes when I see two people laughing. I wonder if they're laughing at me. ....

29. I have a pretty even disposition. not too many ups and downs. ....

30. My friends would describe me as relaxed and even-tempered. ....

31. I should have more self-confidence; I tend to under-estimate my abilities. ....

32. If a job needs to be done I do it regardless of how unpleasant it is. ....

33. I tend to reflect a good deal on my dreams. hopes. and aspirations. ....

34. I can put up with frustration without becoming depressed or angry. ....

35. I make new friends so easily that I tend to forget old friends. ....

36. I wouldn't mind belonging to several clubs at the same time. ....

37. I have a tendency to think gloomy. pessimistic thoughts. ....

38. I often have trouble finishing things that I've started. ....

39. In social situations. I am talkative and spontaneous. ....

40. I am usually uncomfortable in a group of people. ....

41. I enjoy people and just like to be around them. ....

42. I should probably be less moody and sensitive. ....

43. I have a somewhat defensive. touchy nature. ....

44. Sometimes I think about getting revenge for old wrongs. ....

45. Adversity just stimulates me to push a little harder. ....

46. I am somewhat serious and very deeply emotional. ....

47. I like to spend time planning things way ahead of time. ....

48. I have a warm spirit. I am lively and enjoy living. ....

49. By nature I seem to be a pretty good "peacemaker." ....

50. My friends consider me to be a tactful person. ....

51. I tend to be pretty tolerant of other people. ....

52. I am usually very well organized in my work. ....

53. When things go wrong I knuckle down and try harder. ....

54. I have a pretty good ability to get things done. ....

Put your answers to this page in Column 3.

55. I am calm and relaxed, and rather unemotional. . . . .

56. I tend to get my feelings hurt fairly easily. . . . .

57. I see myself as a cheerful, sociable person. . . . .

58. I have a tendency to feel sorry for myself. . . . .

59. Socially, I am a pretty outgoing person. . . . .

60. A strong will is one of my best assets. . . . .

61. I usually have a good time at parties. . . . .

62. I usually make new friends easily. . . . .

63. My life is fast-paced and active. . . . .

64. I need to learn to worry less. . . . .

65. I tend to move and speak slowly and calmly. . . . .

66. I have a tendency to brood about things. . . . .

67. I tend to be a pretty easygoing person. . . . .

68. I usually finish whatever I begin. . . . .

69. I don't get upset very often. . . . .

70. I'm rarely at a loss for something to say. . . . .

71. I usually get a lot of fun out of life. . . . .

72. My friends would call me an extrovert. . . . .

73. I tend to analyze myself frequently. . . . .

74. Unfinished tasks really bother me. . . . .

75. I don't get ruffled easily. . . . .

76. I tend to be a hard, persistent worker. . . . .

77. I tend to resent people who oppose me. . . . .

78. I seldom get angry or overemotional. . . . .

79. I don't make friends very easily. . . . .

80. I should probably be less lazy. . . . .

Temperament Inventory, Score Summary Sheet

⊕ Score Summary

Phlegmatic ( ) %tile

Sanguine ( ) %tile

Choleric ( ) %tile

Melancholy ( ) %tile

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