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# Some Jungian typological concepts : an audio-visual approach for communicating type recognition skills.

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SOME JUNGLIAN TYPOLOGICAL CONCEPTS:  
AN AUDIO-VISUAL APPROACH  
FOR COMMUNICATING TYPE RECOGNITION SKILLS

A Dissertation Presented

by

DOROTHY MARCIC HAI

Submitted to the Graduate School of the  
University of Massachusetts in partial  
fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

June 1975

Major Subject: Education

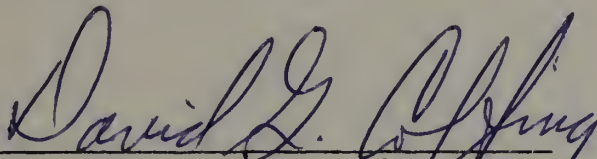
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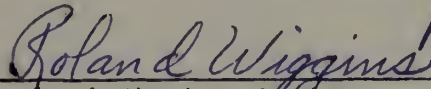
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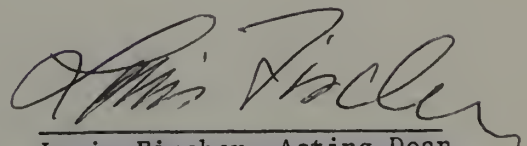
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And through this all, the love and inspiration of my husband, Samandar, has been immeasurable.

Finally, I wish to express my deep appreciation to my parents for their love and sacrifice for so many years, and because of this I dedicate this work

TO

MY PARENTS

Some Jungian Typological Concepts:  
An Audio-Visual Approach  
For Communicating Type Recognition Skills  
(June 1975)

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M.Ed., University of Massachusetts, 1974

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The Jungian typology may offer a reasonable system of classification for often seemingly random behavior. It basically delineates the two attitude types of extraversion (E) and introversion (I) along with the four function types of sensation (S), intuition (N), thinking (T) and feeling (F). To determine individual typology, the manager-subjects (N = 54) completed the Myers-Briggs Type Indicator and then viewed a manager-oriented audio-visual program designed to teach type recognition skills. Following this they responded to a questionnaire with items concerning which types they believed themselves to be, liked and found desirable. Only after finishing the questionnaire did the subjects learn their Indicator type scores.

The three hypotheses basically stated that the subjects would be able to predict their own types, according to which type they believed themselves to be, as well as the type they liked to be and which type they found desirable, after viewing the audio-visual program, but without yet knowing their type scores from the M-B Indicator.

The results indicate the managers' general self-type prediction ability, which was especially strong for the thinking types--ST and NT. Average correct type prediction was 82% for the ST's, 84% for the NT's, 17% for the SF's and 67% for the NF's. In addition, the introverts seemed more accurate in their type prediction than the extraverts were. This supports Jung's theory of I-E which says the introvert focuses his perceptions and judgments on his inner world, while the extravert focuses his out on the environment. One would therefore expect the I's to be more conscious of self-type than the E's would be.

One of this study's limitations was having too few F-types, especially SF's. Other research is needed with larger samples, in order to determine whether the T's are indeed more accurate in type prediction than the F's, and whether the I's are more accurate than the E's. And other audio-visual programs on typology could be developed for other types of audiences, i.e., teachers, scientists, salesmen, etc. Though the present program's emphasis was on the usefulness of typology in managerial decision-making, it is up to further investigators to determine typology's utility in other situations besides managerial settings.

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# C H A P T E R    I

## INTRODUCTION

...if we once start thinking no one can guarantee what will be the outcome, except that many objects, ends and institutions will be surely doomed. Every thinker puts some portion of an apparently stable world in peril, and no one can wholly predict what will emerge in its place. (Bright, 1964, p. 136)

John Dewey

### Statement of the Problem

Decisions are made. But how often does one reflect on the underlying factors in the decision-making process? One person may decide something after proceeding through a logical, analytical process, all the while looking towards the future, without even an awareness that some others may make decisions on the basis of a logical process that only takes the immediate facts into consideration, or on the basis of a well-defined future-oriented value system.

For persons in positions of responsibility, the consequences of decisions may often be quite crucial. The banker decides on a certain investment. The manager decides to organize a new department. A new product line is decided on by the director of marketing.

Understanding the underlying factors of decision-making can facilitate a greater awareness of the decision-making process itself. And since decisions probably are based, in part, at least, upon how one perceives the world as well as how one makes judgments, a system for classifying these functions, i.e., perceiving and judging, may bring the decision-making process into fuller consciousness.

The Jungian typology offers such a system of classification; however, there are few means at present whereby concepts of typology can be brought to the manager. The first purpose of this dissertation is to fill this gap by developing an audio-visual program, aimed at experienced managers who are pursuing a Master's Degree in Administration, as an educational tool to teach type recognition skills.

The secondary purpose of this dissertation is to determine whether the audio-visual program can help the managers to predict their own types.

The remaining sections of this chapter will cover a brief description of Jung's typology, along with an exposition on the purpose of this study and a literature review.

### History of Typology

The problem of categorizing human behavior is not a new one; from ancient times there have been numerous attempts to distinguish basic types of behavior. One of the oldest known system of labeling man into different psychophysical types is the Hindu Gunas (sheaths) system, which falls into three categories: *tamas*, *rojas*, and *sattva*. When loosely translated they mean, respectively, routineers, actioneers and seers or missionaries. (Winski, 1971)

In order to bring order into chaos, oriental astrologers devised a typology, using the four elements--air, water, earth and fire. The air trigon of the zodiac is made up of the aerial signs, Aquarius, Gemini and Libra; the fire trigon consists of Aries, Leo and Saggitarius. According to this view, whoever is born in a certain trigon will share

its aerial or fire nature and will have a corresponding temperament.  
(Jung, 1931)

Closely related to this ancient cosmological scheme is the type classification developed by the second century physician, Galen. The underlying teachings go back to the fifth century, B.C., with Hippocrates' beliefs that the human body is composed of the four elements, air, water, fire and earth. Related to these elements, four substances were to be found in the living human body--blood, phlegm, yellow bile and black bile. Galen expanded these teachings by stating that by the various admixtures of the four substances, men could be divided into four classes. Those with a preponderance of phlegm were the phlegmatic type; blood produced the sanguine; yellow bile produced the choleric; and black bile the melancholic. (Jung, 1923)

Expanding further on these ideas were Kant and Wundt, who developed coordinates or dimensions of quick/slow and strong/weak continua. The four temperaments are classified according to reaction type as shown in figure 1. (Eysenck, 1970, p. 17)

	Strong	Weak
Quick	Choleric	Sanguinic
Slow	Melancholic	Phlegmatic

Figure 1. Four-Type Theory of Galen,  
Kant and Wundt  
(From Eysenck, 1970, p. 17)



Classifying according to type does not rule out individual differences, although some of the critics of typology would argue against such a statement. Klüver (1931) deals with arguments for and against personality types, but finally concludes that types cannot be dispensed with, since they transform disconnected bits of behavior into a dynamic system.

### Jung's Typology

The typology used in this study is based on the writings of Carl Gustav Jung (1971a), who states that the types are simplified descriptions of the average behavior of persons belonging to each of the types. Jung's type theory may be, as Brawer and Spiegelman (1964) maintain, his second most important contribution to personality theory--second only to the discovery of archetypes. But even so, the popularity of his model has grown slowly, perhaps in part because of the fact that Jung did not himself develop a school, due either to inability and/or unwillingness to collect a sufficient number of independent and creative people around him. (Adler, 1963)

Jung (1923) saw the need, however, for a useful typology, one whose criteria can be accepted as binding by the judging subject as well as the judged object; a typology where no one type is valued higher than the others.

Two different attitudes are seen in this type theory. If an individual's libido (here defined as psychic energy, the energy which performs the work of the personality) is turned inwards toward his world of ideas, resulting in his decisions being based on



his internal, subjective world, then he is of the introvert type. On the other hand, if the individual's libido is turned outwards on the external world and his actions are then determined by the objective world outside himself, he is an extravert. (Jung, 1971a)

Besides the two attitude types, there are the psychological functions. The Jungian model delineates four basic psychological functions: thinking, feeling, sensation and intuition. Thinking consists of linking ideas together in order to arrive at some concept or a solution to a problem. Feeling is an evaluation function; it is based on the degree to which the idea arouses a pleasant or unpleasant feeling. Sensation is sense perception of conscious experiences through use of sights, sounds, smells, etc. Intuition, on the other hand comes "out of the blue." There need not be any external stimuli, as with sensation, for the intuitive person instinctively "knows" something. (Hall, 1973, pp. 98-99) Sensation is spoken of when sense impressions are involved, while intuition is spoken of if it is the kind of perception which cannot be traced directly back to conscious sensory experience. Jung defines sensation as perception via the conscious, and intuition as perception via the unconscious. (Jung, 1931)

Sensation and intuition are functions concerned with facts and the fact-world, whereas thinking and feeling are functions of judgment. (Jung, 1971b)

From the four function-types, a graphic representation is made (see figure 2), showing the two dimensions of perception and judgment.

Bringing these two dimensions together, there are four possible perception-judgment combinations, i.e., sensation-thinking (ST),

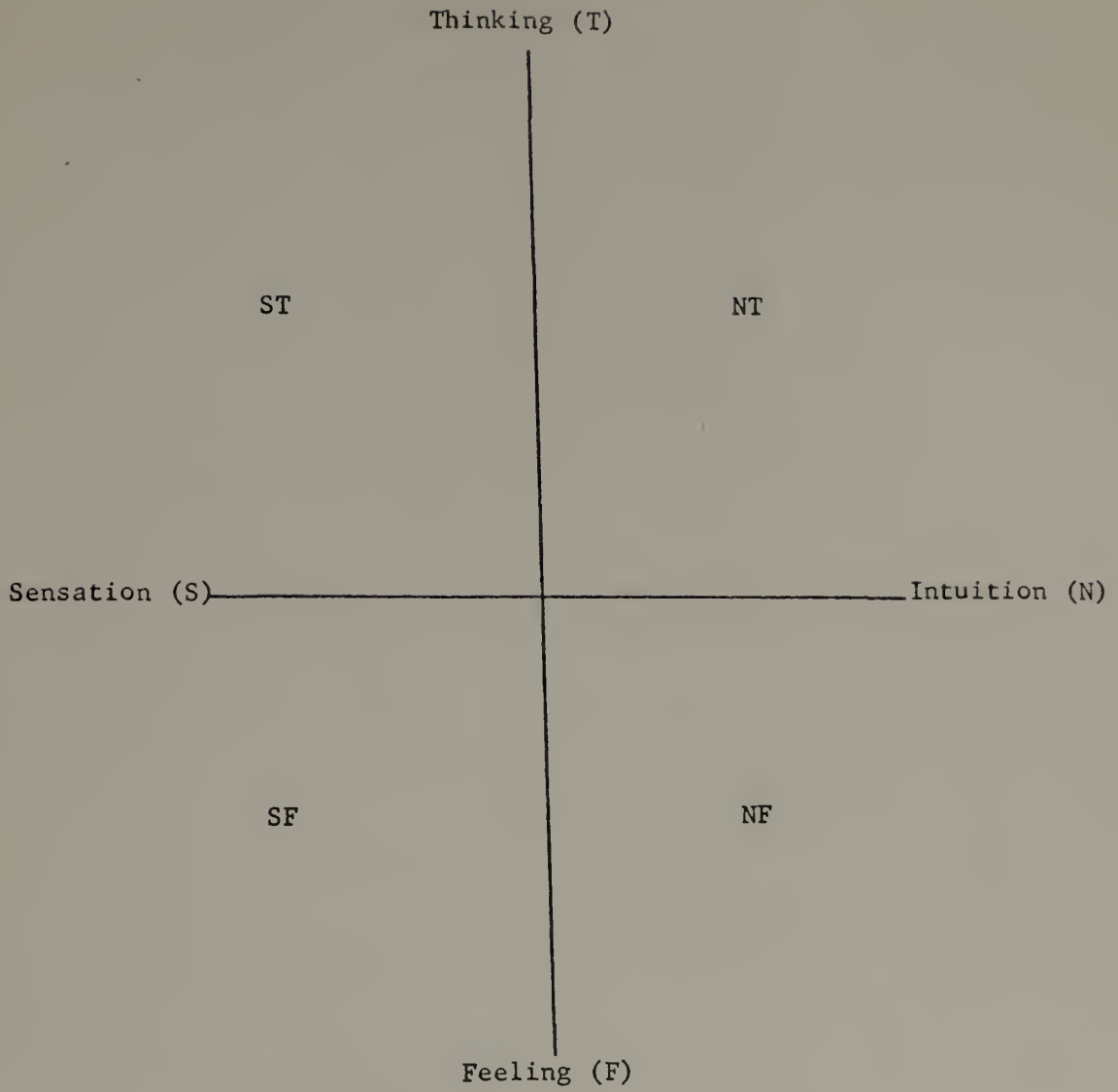


Figure 2. Perception/Judgment Combinations

intuitive-thinking (NT), intuitive-feeling (NF), and sensation-feeling (SF).

One of the four possible functions is usually more developed than the others. If the primary function is thinking, then it will be accompanied by an undeveloped, more infantile feeling function. (Jung, 1931) In addition to the primary function, the auxiliary function-- which is the second most prominent one--shapes the type. If the primary function is on the thinking/feeling dimension, the auxiliary function will be on the sensation/intuition dimension and vice-versa.

From these three basic dimensions, i.e., introversion/extraversion, thinking/feeling and sensation/intuition, eight basic personality types evolve. (Jung, 1971a) For instance, there are the extraverted feeling and introverted intuition types, and so on. (Winski, 1971)

The question may arise as to the need for a typology at all. A typology is a system of organization and classification. Thompson (1967) believes it to be a sign of relative maturity where a field begins to focus on patterned variations. And when there is large empirical material, critical principles of order are needed to help classify it. (Jung, 1968) Gray (1944, p. 37) reports Jung to have said "I would not for anything dispense with type theory, for the reason that it offers a system of orientation."

As far as psychological typologies are concerned, Jung's model is not the only alternative. Bradway (1964) describes the trend in American psychology to classify individual differences in personality according to psychological theories based upon a normal distribution of personality traits from none to much. Jung's concept, on the other hand,

is one of opposing attitudes and functions, i.e., introversion vs. extraversion, sensation vs. intuition, thinking vs. feeling.

Furthermore, Jung's typology has the apparent advantage that the types to be used are by definition free from implications of intellectual or moral superiority. (Gray, 1949a) Each type is as unmoral as a particular working tool, but like tools, each type has its usefulness and its limitations. (Gray, 1949b)

However, Jung (1968) has warned against over-categorizing people:

Do not think that I am putting people into this box or that and saying, 'He is an intuitive, or he is a thinking type.' People often ask me, 'Now, is So-and-So not a thinking type?' I say, 'I never thought about it' and I did not. It is no use at all putting people into drawers with different labels. But when you have a large empirical material, you need critical principles of order to help classify it . . . . to me it is very important to be able to create a kind of order in my empirical material, particularly when people are troubled and confused or when you have to explain them to somebody else. For instance, if you have to explain a wife to a husband or a husband to a wife it is often very helpful to have these objective criteria otherwise the whole thing remains 'He said'-'She said.' (p. 19)

Though Jung's typology may have many advantages, Jung (1923 and 1931) admits his model is not the only possible one. Any other psychological criterion could be used effectively as a psychological classifier, though he feels none other possesses as great a practical significance. When asked why he chose four, and not more or fewer functions, Jung (1931) explained that this was due to empirical reasons, but that the four together produce a kind of totality. Sensation establishes what is really present, thinking gives the ability to recognize its meaning, feeling gives its value and intuition points to possibilities in the situation. Jung (1931) has characterized the four

functions as being like the directions on a compass, just as arbitrary and just as indispensable. And the coordinates can be shifted in different directions by various degrees, according to convention and intelligibility.

### Type Indicators

Isabel Briggs Myers, (1962) collaborating with Katherine C. Briggs, expanded Jung's typology; developed an instrument, i.e., the Myers-Briggs Type Indicator (Myers and Briggs, 1968), for determination of type; and conducted extensive research on the indicator.

The Myers-Briggs (Myers, 1962) typology adds to Jung's typology an additional dimension, that is perception/judgment, which basically determines what Jung (1971a, p. 405) would call "the dominant function." If one is in the perceiving side, then his dominant function is either sensation or intuition, while his auxiliary function would be thinking or feeling. But if he is on the judging side, then his dominant function is thinking or feeling, with intuition or sensation as the auxiliary.

Another indicator, or questionnaire, to determine Jungian types, was developed by Gray and Wheelwright (1946a). Arguments for the belief that the Myers-Briggs Type Indicator is superior to the Gray-Wheelwright questionnaire will be discussed in chapter three.

Both Myers-Briggs and Gray-Wheelwright conducted research on the typology, but whereas Gray-Wheelwright (Gray, 1948 and 1947 and Gray and Wheelwright, 1946a) used data from only one set (n=1000) of returned questionnaires, the research of Myers-Briggs (Myers, 1962) utilized tens



of thousands of persons in a number of settings, i.e., high schools, colleges, businesses and industry.

The extensive research done by Myers-Briggs, analyzed with statistical methods, may serve to dilute some of the arguments criticizing Jung's typology for not being quantitative or mathematical enough. (Cattell, 1973 and Horst, 1968)

For purposes of this dissertation and for the above mentioned reasons, the Myers-Briggs Type Indicator will be used here, as well as the expanded and refined version of Jung's typology developed by Myers-Briggs (Myers, 1962).

However, the main emphasis will be on the four functions and the four subsequent perception-judgment combinations, i.e., ST, NT, SF and NF.

### Purpose of Study

Jung's typology is one of many personality and behavioral theories. Some of the others include MacGregor's Theory X and Theory Y, Maslow's Need Hierarchy and McClelland's Socialized Needs Theory. (NICB, 1969) Not only do these others have their merits, but they, like Jung's typology, are useful in managerial settings.

It may be, however, that the points where Jung's theory stands out are on its more inclusive behavior model and its lack of value connotations on any of the types. Typology covers a wide spectrum of behavior, where the others tend to be more limited. In fact, the above mentioned theories can be fit into Jung's, but Jung's typology cannot be necessarily fit into the others. Further, none of Jung's "types" are

inherently purported to be better or more useful than the others. The theory holds that all the types are needed--and the different types need each other to complement one another's strengths. This is in contrast to theories such as MacGregor's, where Theory Y is considered more favorable than Theory X.

In addition, typology can be useful in categorizing seemingly random behavior into orderly and consistent patterns (Myers, 1962), as well as helping people to understand one another better.

Furthermore, Wheelwright (1972) states that Jung's type theory is indispensable in communication. It is of little use speaking a feeling language to a thinking-type or vice-versa. He further says that he has yet to find a marriage problem pass through his consulting room where types did not play a leading part.

And typology may help people get along with one another better, to learn to tolerate more diverse behavior. In defending Jung's type theory, Plaut (1972) argues that there is nothing in the world more important than tolerance, whether in thinking of marital and other personal relationships or of religious, social, political or racial groups. He further states that if typology can contribute to tolerance, then no more weighty argument for its existence could be developed.

The idea of increasing tolerance was one that Jung (1968) as well as Myers (1962), felt was important. Jung (1968) stresses the value typology can have in helping people to understand one another and to accept one another. Typology can, he says, help in the comprehension of behavior by categorizing it into a system.

Myers (1962, p. 74) expounds in the same vein:

Recognition, of the type differences, when carried over into the field of person-to-person relationships, may afford a useful system for understanding others whose attitudes or actions seem unreasonable. At the same time, with the elements of the classification system inherently non-threatening (in a strict sense, descriptive rather than evaluative), this perspective yields an explanation which does not pose a value judgment of good or bad on the individual himself. (p. 74)

In addition to offering an explanation for behavior that heretofore may have seemed unreasonable, wilfully perverse and exasperating, type theory can demonstrate the need for opposing types to work together, since each can contribute something different. For instance, since the intuitive is by nature a thinker-upper and the sensing type a getter-doner, the two types need each other; but without a basic understanding of opposing styles, personality clashes may develop. (Myers, 1962)

The first purpose of this dissertation is to develop an educational tool for teaching experienced managers type recognition skills, as an aid in human relations and in decision-making. The second purpose is to determine whether this audio-visual program can be used to help predict one's own type, without previously knowing what that type is.

### Target Population

The audio-visual program is aimed towards experienced managers who are working on Master's Degrees in Administration. The specific target population used here are EMBA (Executive Master in Business Administration) students, who are all middle to top-level executives and managers who are pursuing an M.B.A. degree.



## Type Theory Hypotheses

The audio-visual program was developed as an educational tool to teach managers type recognition skills. When Jung (1968) and Myers (1962) speak of type, they use the term "preferences" and speak of them as being partially under the control of the will. As Myers (1962) states:

Preference type is the product of a person's conscious orientation to life, his habitual, purposeful ways of using his mind, chosen because they seem to good and interesting and trustworthy. (p. 74)

It seems to follow from this that people should be generally aware of how they operate typologically. Therefore, if the audio-visual program is as bias-free as possible (that is, not biased towards or away from any of the types), subjects would be able to determine which type they are after viewing the program.

The following hypotheses have been developed:

### Hypothesis I

After viewing the audio-visual program, but without knowledge of their own type, when asked which of the four basic types (ST, NT, SF, NF) they believe themselves to be, the subjects will choose their own type, as measured by the M-B Indicator.

### Hypothesis II

In the same situation as above, when asked which type the subjects would like to be, they will select their own, measured type.

### Hypothesis III

In the same situation as above, when asked which type they find desirable, the subjects will choose their own, measured type.

### Related Studies

Though Jung's Type theory (1971a) is given great practical value by latter-day analytic psychologists (Brawer and Spiegelman, 1964), outside of the two attitude types of introversion and extraversion, little empirical research has been done on the four function types of thinking/feeling and sensation/intuition. (Richek and Brown, 1967) This may be due, in part, to what Marshall (1967b) claims, that even those with extensive experience in typology can show uncertainty or disagreement about the function-type of a particular person.

### Earlier Work

In the early 1940's a questionnaire containing 75 items was developed by Gray and Wheelwright (1964a) and subsequently sent out to an unspecified (Gray, 1949c) number of people, 1000 of whom returned the completed questionnaire, which Gray (1947b) reports to have a 50% internal consistency. On the whole, it seems difficult to evaluate the results Gray and Wheelwright published in numerous journals, since they never discuss the research design itself. For example, they do not address themselves to the following questions. Who were the questionnaires sent to? How were these persons chosen? What percentage returned the questionnaire completed? Did this "return group" comprise a subgroup sharing certain commonalities? These questions need to be answered to make a final, critical evaluation of the Gray-Wheelwright research. It is interesting to note that Gray or Gray and Wheelwright published about 10 papers in the space of a few years (Gray, 1945, 1946, 1947, 1948, 1949a, 1949b, 1949c and Gray and Wheelwright, 1944, and

1946), each dealing with some specific topic, such as "Jung's Psychological Types and Marriage," (Gray and Wheelwright, 1944) or "Psychological Types and Changes with Age," (Gray, 1947). However, the same group of 1000 questionnaires seems to have been used for all the analyses. Evidently they feel justified in generalizing for much of mankind on a wide range of topics, based on a single group of questionnaires. Their findings are listed below.

On the basis of 200 early received questionnaires, Gray and Wheelwright (1946a) compare the relative frequency of the types, finding introvert-sensation-thinking at 31% of the sample to be the most common and extravert-intuitive-thinking with 5% of the sample to be the least common. Breaking it into frequency of single-type categories, they found: (Gray and Wheelwright, 1946, p. 10)

Introvert 54%	Sensation 71%	Thinking 60%
Extravert 46%	Intuition 29%	Feeling 40%

Gray (1948), using the 1000 questionnaires, found the introverted-sensation-thinking type to be most common, comprising 15.6% of the sample (He dealt here with permutations, and the introverted-thinking-sensation totaled 11.4% of the sample), while introverted-feeling-intuition was least common at 2.1%. Some differences were shown according to sex in the sixteen permutation types, but the basic trends of high frequencies to low frequencies of types were similar.

Using questionnaires from sixty married couples, Gray and Wheelwright (1944) exhibit interesting results, comparing couples of opposite types, i.e., introvert vs. extravert, sensation type vs. intuitive or thinking type vs. feeling type. Ninety percent of the couples were found to have at least one complementary power (function or attitude

type), with 33% showing all three powers as complementary. In addition, an inverse correlation was found with strength of the powers. For instance, a husband who scored extremely high as a feeling-type would have not merely a thinking-type wife, but one who scored very high on thinking. Or a moderately-scored extravert woman would have a husband who scored moderately as an introvert. This relationship is shown in figure 3. (Gray and Wheelwright, 1944, p. 38) In a later report, Gray (1949b) with a sample of 271 couples found similar results. Gray and Wheelwright (1945) see complementary types as an important factor in a solid marriage, as they are seen more often in this case than in friendships.

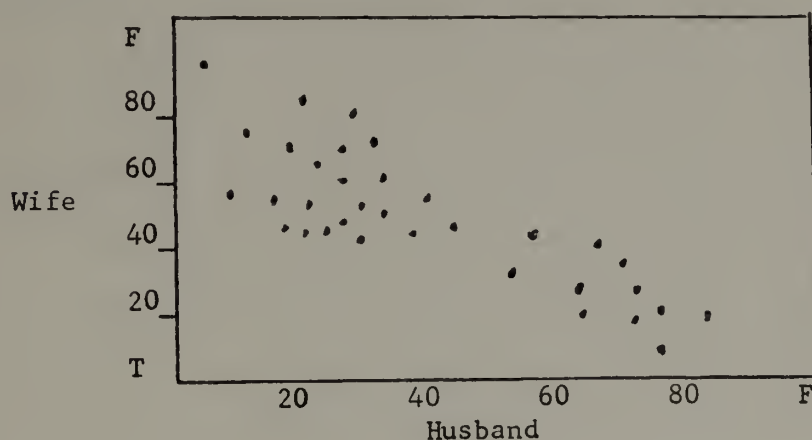


Figure 3. Quantitative Balance between Thinking (T) and Feeling (F) Valuations (From Gray and Wheelwright, 1944, p. 38)

Gray (1945) found from the 1000 questionnaires that three-fourths of the physicians in the sample were sensation types, while of the 54 psychotherapists who answered, 74% were intuitives, prompting the inference that physicians who perceive with their intuition function more than with their sensation are specially fitted to go into psychotherapy.

Later, Gray (1946b) compared psychological types to various occupations and body-builds. He found, for instance that out of 160 housewives, 55% were extraverts, a fact which seemed to contribute to their unhappiness. Gray felt it would be better if more housewives were introverts. He also found a greater proportion of introverts and thinking types in medicine, with writers showing more introversion than other occupations. In this sample, obesity had a significant correlation with extravert-sensation-feelers.

Using data from the 1000 questionnaires, Gray (1947a), in order to show type changes with age, compared type of the younger sample with type of the older sample, concluding that, as age increases, extraversion, intuition and feeling decrease. He neglects to take into account environmental factors which may make one generation more extraverted, for instance, than another.

In analyzing ambiguous test scores, Gray (1949c) explains this may be due to emotional problems or to the overt vs. the actual type phenomenon.

Finally, Gray (1949c) analyzed the types of Jung and Freud, concluding that Jung was an introverted-intuitive-thinker, while Freud remained an extraverted-sensation-feeler.

#### More Recent Work

Since the 1960's there have been a number of studies and theoretical models applied to the Jungian typology by a variety of researchers and writers.



Introversion/Extraversion. A vast proportion of these studies dealt with the introversion/extraversion dimension. While some of these relate introversion/extraversion (I-E) to functions of the nervous system (Eysenck, 1957 and Jones, 1960 and Holland, 1960 and Reid, 1960 and Dicks-Mireaux, 1964), most of them do not concentrate on the physiologic factors of the attitude types, but rather limit themselves mainly to attitudinal and behavioral aspects of I-E.

The degree of extraversion of a person at any moment is defined by Marshall (1967a, p. 134) as the ratio:

$$\frac{\text{amount of libido turned outwards}}{\text{amount of libido turned inwards}}$$

Using 50 undergraduate students, Mann (1956) administered the Binet association task and the Rorschach test, finding correlations between extraversion and responsiveness to the environment as well as between introversion and lack of responsiveness to the environment.

Also studying Rorschach were Brawer and Spiegelman (1964), who compared his I-E dimensions, as measured by the Rorschach technique, for a selected adult population, with independent judgments on I-E by Jungian analysts of this same population. The I-E dimensions of Rorschach and the Jungian analysts related positively to each other.

Several studies identified personality factors as correlated to I-E (Introversion/Extraversion). Karson and Pool (1958) found I-E to be correlated with adventurous autonomic resilience, surgency, dominance and anxious insecurity in a study of seven United States Air Force officers who took a battery of tests.

North (1949) administered three instruments for measuring I-E traits and identified correlations with two dimensions:

- 1) Cycloid emotionality and depression
- 2) Impulsiveness or freedom from restraint--also positive correlation here with Weight/Height ratio.

Similar results were gathered by Eysenck and Eysenck (1963) using a factor analysis carried out on a matrix containing 66 I-E and neuroticism items (N = 300). Two separate traits of extraversion were found, that is, impulsiveness and sociability.

Using the Thematic Aperception Test (TAT), Palmiere (1972) demonstrated that introverts quantitatively produce more fantasy than extraverts.

In order to measure amounts of dissonance produced by introverts vs. extraverts in certain situations, Cooper and Scalise (1974) studied 85 male students who were put into groups discussing critical political issues. They were made to believe their first impulse was either conformity or independence from the unanimous majority. The introverts, who, as Jung (1923) states do not usually conform to the opinion of others, experienced dissonance when told they had acted contrary to their introverted attitude and had agreed with the group. Similarly, extraverts, who are not likely to stand independent to group pressure, experienced dissonance when told they had disagreed with the unanimous majority, and they changed their stand.

Figure 4 shows this relationship.

	I	E
Conform	Dissonance	Normal
Independent	Normal	Dissonance

Figure 4. Relationship of Extraversion/  
Introversion to Conformity and Independence  
(From Cooper and Scalise, 1974)

Attitude/Function Type. Though the bulk of research on Jung's type theory in recent years has been concerned with the I-E dimension, some work has been done on a broader approach to the typology.

Bradway (1964) compared the type measurements of the Myers-Briggs Type Indicator (M-B Type Indicator), the Gray-Wheelwright Questionnaire, and Jungian analysts' self-typing, by administering the two instruments to 28 Jungian analysts, who also typed themselves. The three methods proved quite similar, especially on I-E, where there was an almost complete concordance. However, this study did not provide for measurement of conscious or unconscious motivations of the analysts, who were probably experienced enough to know what the questions on the instruments referred to.

Also using analytical psychologists as subjects, Plaut (1972) sent out questionnaires, 46% or 173 of which were returned. The study showed that 53% of these analysts found typology helpful in one or more ways, though the extraverts were more prone to use the psychological tests than the introverts. Seventy-two percent of the analysts stated



unequivocal confidence in their own type, but on the whole, the group was more sure of its attitude (I-E) type than function types.

Richek and Brown (1967), using the M-B Type Indicator and the Brown Self-Report Inventory (SRI) on 149 students, found Jungian type theory to contribute information of value in the selection and training of prospective teachers.

Kilmann and Taylor (1974) studied the reactions of the different personality types in a laboratory setting which had experiential norms of extraversion, intuition, feeling and perceiving. They found that individuals who were oriented to psychic functions compatible with the norms tended to accept the laboratory experience, while the reverse was true with individuals whose psychic orientations were incompatible with the norms. However, if a person was more balanced on the dimensions, rather than on the incompatible side (introversion, sensation, thinking, judging), then he would experience support as well as resistance.

Mitroff and Kilmann (1974a) explored the effects of the Jungian typology on individual and group expectations of the ideal organization. They also elucidated the relationship between a manager's personality variables and his preference of the ideal organization, with the subsequent kinds of information sources he prefers in the context of an open-ended decision-making situation. (Mitroff and Kilmann, 1974b)

Mason and Mitroff (1973) further develop this thesis of the need for an awareness of psychological variables (types) when designing Management Information Systems.

Mogar (1969) was perhaps the first to tie together Jung's typology with a number of other models, like those of Maslow (1962), Kluckhorn

and Parsons (1961) and others. He used the theories of Jung, Maslow and others as tools for designing more effective learning environments, stating that the needs and the behaviors of teachers and pupils are affected not only by their Jungian types, but also by their position on Maslow's need hierarchy. For instance, an NF student who is deficiency motivated will react and learn differently from certain kinds of instruction than will a growth motivated NF student. The matrix shown in table 1 was developed by Mogar (1969, p. 27), to show the relationship between preference-types and need levels.

### Closure

People are continuously making decisions on various issues. Knowledge of underlying forces in the decision-making process can aid in not only making more conscious decisions, but also in understanding this process in other people. Being more aware of these underlying factors in ourselves and others can also aid in human relations. The psychological typology of Carl Jung offers a system for classification of certain attitudes and behaviors, as a method to aid in the understanding of ourselves as well as others.

Jung's type theory identifies two attitude types, extraversion and introversion, and four function types on two dimensions, sensation/intuition and thinking/feeling.

The purpose of this dissertation is to develop an educational tool for teaching experienced managers type recognition skills, as an aid to better decision making and also to determine whether the program can be used to help the managers in self-type prediction.

While this chapter was more concerned with a broad overview of type theory and research related to it, the next chapter will consider Jung's typology, as operationalized by Myers-Briggs, in greater depth.

## JUNGLIAN TYPE

Need Level	ST	SF	NT	NF
Growth	Efficiency and achievement	Sensitivity and loving kindness towards others	Knowledgeable and Wise	Enlightenment and Serenity
Deficiency	Obsessions Compulsions Ulcers Phobias	Hysteria Alcoholism Anti-social behavior	Anxiety Depression Insomnia Migraine	Hallucinations Delusions Autism

Table 1. Extreme Features of Perception-Judgment Types Associated With Need Level  
(From Mogar, 1969, p. 27)

## C H A P T E R    I I

### T Y P O L O G Y

The utility, in the decision-making process, of the psychological typology of Carl Jung was discussed in chapter one, along with a brief description of the types and a discussion of related research. This chapter will focus on a detailed description of typology, according to the theories of Jung, as expanded and refined by Myers-Briggs and others. Topics of related interest which are included here are the various perception and judgment combinations, the "shadow" or less developed side of the personality, time perception of the types, the virtue of the types together and the use of typology in decision-making.

#### Introduction

A system for classification of human behavior can be helpful in understanding ourselves as well as others; it can aid in the decision-making process. As far as psychological typologies are concerned, it can be argued that Jung's has several advantages:

1. The system is value free; no type is inherently better or more valuable than another one--each has its strong and weak points.
2. The typology encompasses several dimensions, all of which are independent of one another, so there are eight possible attitude-perception-judgment combinations or sixteen if one considers permutations, similar to the Myers-Briggs model,

determining the dominant function.

3. The typology offers, for differing and opposing types, the opportunity to understand each other as well as to see the importance of working together, to complement each other.

This chapter will discuss in detail the typology, both Jung's conceptualization of the two attitudes, introversion and extraversion, with the four function-types, sensation/intuition and thinking/feeling, as well as the Myers-Briggs expansion, adding the perception/judgment preference, which basically determines what Jung would define as the dominant function. In addition, advantages will be listed of the different types working together, i.e., how the qualities of the various types complement one another.

### Type Classification

As explained in chapter one, the idea of classifying people and behaviors into certain types is not new, it dates back to astrology in the ancient times and Galen's theories in the second century, A.D.

Stagner (1974) summarizes the importance of type theories:

Type theories have certain values for psychology, in that they emphasize the importance of conceiving the personality as a gestalt, a pattern in which the parts are to some extent determined by the whole. Types are also valuable in the sense that certain experiments in physical science are valuable; they call attention to certain processes in relatively pure form, uncontaminated by accidental and confusing factors. Finally, types are especially useful in providing reference points for the psychologist as he attempts to comprehend and understand an individual personality under investigation.  
(p. 329)



Because of a number of reasons, as explained in chapter one and section 2.1, the typology of Jung will be used in this dissertation. However, a complaint sometimes directed at this typology is that it lacks the conceptual clarity (Marshall, 1967b) or explanatory value (Mann et al., 1967) of a theory. Myers-Briggs (Myers, 1962) and other writers have helped to solve this deficiency and will be included in the following discussions.

### Type Theory

Brawer and Spiegelman (1964, p. 137) state that Jung's type theory "stands as one of the most important contributions of Jung--second only, perhaps, to the discovery of archetypes...." Further, they feel that Jungian analysts see Jung's typology as a "gem based on solid empirical evidence...."

Basically, Jung (1971a) saw the two possible attitude types of introversion/extraversion (I-E) and the four possible function types of sensation/intuition (S-N) and thinking/feeling (T-F). In addition, the Myers-Briggs (1962) expansion included the perception/judgment dimension, determining what Jung calls the "dominant function," i.e., the one function out of four which is most developed or differentiated.

### Attitude Types

Jung (1971a) terms the two different attitudes as extraversion and introversion. Extraversion is an outward-turning of libido or psychic energy. Extraverts think, feel and act in relation to the outer, objective world. When this extraverted attitude is habitual, it is

referred to as the extraverted type. Extraversion is characterized, as Jung (1936) describes, by an interest in external objects; by responsiveness and a willing and ready acceptance of external events; by a desire to influence and be influenced by events, a need to join in, the capacity to endure and the actual enjoyment of all kinds of noise and bustle; by a constant attention to the environment, the cultivation of friends and acquaintances, none too carefully selected; and finally by the great importance associated with the image one projects, and therefore a strong tendency to make a show of oneself. As a result, the extravert's philosophy and morals tend to be highly collective with a strong streak of altruism, while moral misgivings result when "other people know."

The extravert dislikes self-communings and lives outside, in and through the environment. Anything that may tarnish his optimism is avoided. Provided he is not too pushy, superficial or too much of a busybody, he can be a useful member of the community.

Briefly, extraversion is generally characterized by a candid, outgoing and accommodating nature which is easily adaptable to new situations, quickly forms attachments, and putting aside any misgivings, often ventures forward with careless confidence into new or unknown situations. (Jung, 1953)

Introversion, on the other hand is defined by Jung (1971a) as an inward turning of libido or psychic energy. With an introverted attitude, a person feels, thinks and acts according to the inner, subjective world and often develops defenses against the outer, uncertain world. When this attitude is habitual, it is called an introverted type. (Jung



1971b)

The introvert seems to be in continuous retreat from the objective world, holding himself aloof from external happenings, feeling lonely and lost in large gatherings. In fact, the more crowded it is, the greater is his resistance. He is not a good mixer and has no love of enthusiastic get-togethers. He may often appear awkward and inhibited, since he keeps his best qualities to himself. He is easily mistrustful and self-willed; however his apprehensiveness of the objective world is not due to fear, but because the outer world seems to him negative, demanding and overpowering. He therefore suspects all sorts of bad motives, and surrounds himself with a very thick wall of defense, compounded by frugality, cautiousness, painful conscientiousness, politeness and open-eyed distrust. The world to him does not appear very rosy, since he is over-critical and finds a hair in every soup. Generally he is pessimistic and worried, since the world and its people are not good but only crush him, and he does not feel accepted by them; yet, he, too, does not accept the world. (Jung, 1936)

For the introvert, the world of the self is his safe harbor; self-communings are a pleasure. His own company is best. He is completely at home in his own world, where the only changes are made by himself. His best work is on his own initiative, with his own resources and in his own way. He is in no way influenced by majority views or public opinion. (Jung, 1936)

As to his relations with other people, he gets close only when safety is guaranteed, which means he usually has a limited number of friends. (Jung, 1936)

Jung (1928) summarizes introversion as being:

...normally characterized by a hesitant, reflective, retiring nature that keeps itself to itself, shrinks from objects, and is always slightly on the defensive and prefers to hide behind mistrustful scrutiny.... (p. 41)

Despite these peculiarities, the introvert is by no means a social loss. His inner retreat is not a final renunciation of the world, but rather a search for quietude, where alone he can make his contribution to the community. (Jung, 1936)

These descriptions were of the so-called, hypothetical pure type. However, Jung (1971a) states that there can never actually be a pure type, in the sense that one mechanism or preference completely dominates the other; rather the two mechanisms of introversion and extraversion are in a relative state of equilibrium or balance with one another, that is, one preference has a relative dominance over the other one. The ideal or pure types are only meant to be abstractions.

In summary, for the extravert the object is interesting and attractive, while for the introvert it is the subject, or psychic reality which is meaningful. (Jung, 1936) However, it seems better not to have a very extreme attitude type, but to be more balanced. Whitmont (1971) warns that:

Just as an overemphasis on introversion may result in inadequate external adaptation, extreme extraversion, which is fostered by prevailing cultural and educational values, may lead to depersonalization, loss of a sense of identity, and submersion of the individual in conformist herd psychology. (p. 133)

One more point is necessary before turning the discussion over to the function types. Jung (1971b) explains that if a person is extra-

verted, the attitude of his unconscious will be introverted and vice versa. While a person has more control over his differentiated or conscious attitude, the unconscious opposite attitude is usually childish and archaic, to the degree that the conscious attitude is developed, and the person has less control over his unconscious, less developed attitude. (Jung, 1971b) This differentiated/conscious, less developed/unconscious character also holds true for the function types, which will be discussed in the following section.

### Function Types

Jung (1971a, p. 436) defines a psychological function as a "particular form of psychic activity that remains the same in principle under varying conditions." Four basic functions are distinguished, two rational and two irrational, namely, thinking and feeling, sensation and intuition.

Rational Functions. Thinking and feeling are termed rational functions by Jung (1971a) since they operate best when in accord with the laws of reason or with objective values, which may include external or inner, psychological facts. They are rational because they are discriminative functions (Jung, 1936), that is, they present two ways of making judgments (Myers, 1962), whether with regard to concepts as in the case of thinking, or with regard to values as in the case of feeling. (Jung, 1971a)

Thinking brings ideas into conceptual connection with one another (Jung, 1971a), and tends to be a logical process, aimed at an impersonal finding. It is concerned with the true/false status of an idea. (Myers,

1962) The thinking type, or one whose thinking function is the most differentiated or developed of the functions, is totally oriented by what he thinks and has often an impossible time adapting to situations which he is unable to understand intellectually. (Jung, 1923)

The feeling function, also a way of judging, is based on values, making judgments on the basis of like/dislike, good/bad, pleasant/unpleasant. (Myers, 1962) Whereas thinking judges by objective criteria, feeling makes judgments on the basis of subjective criteria or values. Feeling in this sense is distinguished from emotion or affect, since this function is only evaluative in nature and is not accompanied by physiological changes. (Jung, 1971a) These feelings are mental and not emotional. (Jung, 1968)

The feeling-type person lives according to subjective judgments based on a value system which is either related to society's values, as in the case of the extravert, where choices must be suitable and acceptable; or else the judgments are reflected on inner, personal values, as in the case of the introvert. (Jung, 1971a)

The difference between these two rational functions is described by Jung (1931) below:

When we think, it is in order to judge or to reach a conclusion, and when we feel it is in order to attach a proper value to something. (p. 539)

Further, Marshall (1967b, p. 9) states that "thinking is concerned with efforts to describe or present realities; feeling is concerned with efforts to influence or interact with realities."

Whichever judging process a person prefers, he tends to use it and develop it more, at the same time trusting it and having greater

facility with it, while the undeveloped judging mode is rather like a minority opinion (Myers, 1962) and, as such, is often repressed, child-like and archaic (Jung, 1971a).

The person who prefers thinking is more "adult" in the organization of facts and ideas, while the person who prefers feeling becomes more "adult" in the handling of human relationships. Both are happiest and most effective in activities that call for the sorts of judgments they are each, individually, equipped to make. (Myers, 1962)

Irrational Functions. Sensation and intuition are termed irrational functions, not because they denote something contrary to reason, but rather something beyond reason, that is, not grounded on reason. Both these functions are means of perceiving the world, and, as such, are concerned with facts and the fact-world. (Jung, 1971a)

Sensation is sense-perception, i.e., perception through the five senses (Jung, 1971a); it is the sum total of the awareness of external facts given to a person through his senses. Sensation gives the information that something is; it does not say what it is, only that it is. (Jung, 1968)

People whose sensation function is the dominant or principal function are oriented towards the concrete realities of a situation (Jung, 1923) and are too interested in the actuality around them to listen to ideas that come from nowhere. Instead, they work steadily, like an established routine, seldom make errors of fact and rarely trust inspirations. (Myers, 1962)

Intuition, on the other hand, is defined by Jung (1971a) as the function that perceives in an unconscious manner; it cannot be traced



back directly to conscious sensory experience (Jung, 1931). These perceptions may come in the form of a hunch or "women's intuition" and seem to come out of the blue (Myers, 1962), giving the hidden possibilities in the background of a situation (Jung, 1923).

In fact, it may be said that the intuitive type is so interested in the possibilities around him that he does not give much attention to that which the sensation type notices, namely the actualities around him. He is further characterized by the kind of person who seeks new problems, new challenges, getting bored when he has mastered something; he is impatient with routine details. (Myers, 1962)

In total, these four functional types are a means to apprehend the world. Sensation tells us something exists, thinking tells us what that something is, while feeling enables us to make value judgments on this object and intuition gives us the ability to see the possibilities inherent in the object. (Mann et al., 1967)

### Perception-Judgment Combinations

The refinement and expansion of Jung's typology by Myers-Briggs (Myers, 1962) included building a model of the combinations of perception and judgment. The S-N perception index is independent of the T-F judgment index, so that either type of perception can combine with either type of judgment. The four possible outcomes are:

ST sensation plus thinking

NT intuition plus thinking

NF intuition plus feeling

SF sensation plus feeling



Each of these four combinations produces a different kind of personality. Where two combinations share a common preference, there will be some similar qualities, but each of these four types has a uniqueness all its own--due to the interaction of the preferences for perceiving and judging. (Myers, 1962)

Whatever combination a person may be, it is argued that he will find it easiest to understand and get along with those of the same combination type. Similarly, he will generally find it harder to predict or understand his opposite combination type (with no shared preference), and personality clashes may ensue. When this happens, says Myers (1962), if the origin of the conflict is understood, i.e., because of using opposite kinds of perception and judgment, the conflict is usually easier to take and easier to cope with. Clashes may also result between a person and his job, if the job does not make use of his perception and judgment preferences, but rather demands the opposite combination.

Following are descriptions of the personalities resulting from the four possible perception-judgment combinations. The main development in this area of the perception-judgment combinations has been done by Myers-Briggs (1962), as Jung did not speak of the perception and judgment preferences as together in one personality. The bulk of this work was carried out by Myers-Briggs, with some additions by other writers. In addition, the conceptualization of the judgment versus perception preference was carried out by Myers-Briggs (Myers, 1962) as well.

Sensation plus Thinking. The ST people mainly rely on sensation and thinking for perception and judgment, respectively. Their main

interest is in facts, since these facts can be collected by the senses-- by seeing, hearing, feeling, touching, measuring, counting, etc. and their approach to these facts is one of impersonal analysis, since they prefer the thinking mode, with its logical, step-by-step process.

Intuition plus Thinking. The NT people perceive through intuition and combine it with thinking. However, instead of their thinking function being used mainly for analysis of facts, as the ST people do, the NT thinking is related to possibilities, often theoretical, technical or executive ones, with the human element subordinated. They tend to be intellectually ingenious.

Intuition plus Feeling. The NF people, also using intuition for perception, focus on possibilities; however because of their feeling function, they see possibilities for people or seek new truths. Their personal warmth and commitment in following up a possibility tend to make NF people enthusiastic as well as insightful. Often they have a great gift of language and can communicate both the possibility they see as well as the value they attach to it.

Sensation plus Feeling. The SF people likewise rely primarily on feeling for purposes of judgment, but prefer sensation for perception. Like the ST people, they are concerned with facts and fact-gathering, but they approach this process with personal warmth and valuations in terms of how much something matters to themselves and others. And they are more concerned with facts about people than facts about things. As a result, their personalities tend to be sociable and friendly.

Briefly, the four perception-judgment combinations are

typified as:

- ST hard-headed and practical
- NT intellectually ingenious
- NF enthusiastic and insightful
- SF sociable and gregarious

### Dominant Process

Thus far the preferences in terms of attitude type, I or E, and function types, T or F, S or N, have been discussed. The remaining preference determines which function is the principal or dominant one, i.e., whether perceiving or judging is the primary mode. For instance, if a person follows explanations open-mindedly, he is preferring perception; if on the other hand, he rather quickly makes up his mind as to whether he agrees or disagrees, he is preferring judgment.

A fundamental difference in these two preferences is manifested in terms of which process is turned off or ignored. In order for judging to take place, perception must stop; all the facts are in, so a decision can be made. On the other hand, in order for perception to continue, judgments are put off for the time being as there is not enough data, new developments may occur.

Basically, the preference shows the difference between the perceptive types who live their lives as opposed to the judging types who run theirs. Each type is useful, but works better if the person can switch to the other mode when necessary. For a pure perceptive type is like a ship with all sail and no rudder, while a pure judging type is all form and no content.

As mentioned above, the perception-judgment (P-J) preference determines the principal function. For instance, an ST who prefers perceiving would have sensation, that is, the perceiving function, as his principal function. The principal function of an NF who prefers judging would be feeling, the judging function.

However, in the case of the introvert, the dominant process is turned inward and his auxiliary or secondary function is shown to the world. Hence, his best side is kept for himself or very close friends. The M-B Indicator measures the principal function that is used on the outside world; in the case of the introvert, this is actually his auxiliary function.

### Shadow Side

Jung (1971a) calls the unconscious of a person his "shadow" side. Alongside a person's conscious introverted type, for example, there is an unconscious extraverted shadow side which compensates his conscious one-sidedness (Jung, 1923). And just as the conscious personality is argued to be the product of the best developed processes, i.e., attitude and functions, so the shadow is the result of the least developed. It uses the relatively primitive and childish perception and judgment, not intentionally in the service of the conscious aims, but rather on its own, when it comes out of its repressed state, as a sort of escape from the conscious personality. (Myers, 1962)

The main ingredient of the shadow, as Myers (1962) explains, is the function which is most antagonistic to the principal function; in the case of an intuitive, his shadow will be dominated by sensation, which,

being inferior, may betray him into a low order of pleasure seeking, or into procrastinating when his inspirations are low. The sensation type's shadow will be primarily intuition, and since it is inferior, may occupy itself in suspecting all kinds of unpleasant possibilities. The shadow of the feeling type will be mainly thinking, likely to be crude and domineering. The thinking-type's shadow will be mostly feeling, which may be explosively unruly. (Myers, 1962)

It is useful to be aware of the shadow, since because it is repressed and undeveloped it may come out in unexpected and undesired ways. (Jung, 1971a)

Another expansion in Jung's type theory, namely the relationship of type to time perception is presented in the following section. It, too, builds on the same conceptual base from which the uses of typology in the decision-making process will later be derived.

### Type and Time

Mann, Siegler and Osmond (1967) felt the need to expand the theoretical base of Jung's typology with a concept of *umwelt* (experiential world) and determined the relationships of type to man's temporal orientations.

#### Feeling Type

The feeling type mainly relates to the past, to memories. For him, the present is constantly becoming the past. Man et al. (1967) state:

Previous experiences are related to present functioning, so providing continuity in life. The two types which can do this (feeling and thinking) we shall call continuous types. (pp. 36-37)



The feeling and thinking types seem to differ in how they perceive time flowing. For the thinker, time is on a line; it flows logically from past, to present, to future. The feeler, on the other hand, sees time as circular; the past is shown in the present and then immediately returns to the past as a memory. Feeling types tend to be great collectors of memories--"this reminds me of...." (p. 37)--diaries, traditions and so on.

This type tends to see present situations in terms of his personal past, and, as he grows older, may have difficulty in adapting to changing times, for he is trapped in memories of the past.

The maintenance of relationships (keeping part of the past) is of central importance to feeling types; they try to avoid blaming others and will prefer to see themselves at fault. Hence, they often take on others' problems and undeserved criticism. Events of the world are seen by them in terms of who did what to whom, and they are liable to suspect sinister motives in people whose behavior seems to them insensitive or thoughtless, for they do not believe that getting a job done may be, in itself, a motive. Rather their motive would likely be something like: to achieve a satisfactory memory, to heighten emotion or to intensify the personal atmosphere. So Mann et al. (1967) state that there may be difficulty when a certain type starts to extrapolate from the behavior of another type. When this happens, the motives behind the behavior may be misconstrued. For instance, a T type might assume that other types do certain actions for the same reasons he would. This perhaps is not a correct assumption, as Mann et al. (1967) explain:



It does not occur to feeling types that others do things in a detached way because of principles (thinking), because of practicality (sensation), or simply out of a desire to make things more exciting (intuition). Thus, others are frequently annoyed or angered at what they feel is the prying of the feeling type, who is often told to 'just accept things as they are and stop trying to read more into it.' For the feeling type, such an admonition is not only useless, it is meaningless. For someone of this nature, things are never simply what they are, they are already colored by their long sustained echoes in the vaults of memory. (pp. 38-39)

### Thinking Type

The second continuous type is thinking, but the nature of the continuity differs in thinking and feeling. In thinking the flow of time is from past, to present, to future. But none of these dimensions is more important than the others, rather it is the process, the flow of time itself, which is the crucial issue. The concern of this type is to see the process through to completion, to extend the line as far as possible into both the past and the future.

But the past of the thinker is not the same as the personal past of the feeler; rather it is the impersonal historical past. No issue can be discussed or understood unless it is known where the event originated, how it developed and either where it is going or how it concluded. Discrete, tangential events are not considered unless they fit into the larger continuity.

Because of this concern over time's flow, the thinking type does not see single events or episodes as important as the ongoing situation. Hence, they tend to appear cold, detached and uncaring. This is not true; it is only that their concern does not reside in any momentary

happening, but in the entire on-going process.

This ability to put events in historical order enables the thinking type to develop hypotheses, to draw conclusions and to make predictions, namely to be scientific.

Living according to principles is another characteristic seen by Mann et al. (1967) in this type. Because they are so concerned with continuity, it becomes essential for them to behave in a way that will fit into some overall theory. And this concern for principle often makes the thinking type move slowly, since he wants to make certain what he is doing is according to his theory. This exact examination of behavior often results in hair-splitting and overscrupulousness. Therefore, the thinking type is not good usually in situations that demand immediate action, but instead works well when care and deliberation are needed about issues. Thinkers may be great planners, but can get quite confused when required to deviate from their prearranged plan.

### Sensation Type

Mann et al. see the sensation type as mainly concerned with what is current and immediate. No other type has the ability to perceive the total reality of the present--the tangible, concrete, sensual and visible events, which take priority for this type. The sensation function is called a discontinuous function because its ties with the past are weak and almost non-existent with the future. Life is a happening; there is little concern for how something got that way or where it is going. All energy is concentrated in the present, which means the sensation type can have a great ability to face the concrete reality

before him, and to deal with it. There is no time-lag, since he responds directly to environmental stimuli, without need for further information. Thus, the sensation type is usually practical. Objects are perceived, messages read and action is taken.

Sensation types are the most manually skillful of the types. They want to influence the environment and often become adept at handling and manipulating tools, material and people.

Because of their time orientation, sensation types are generally efficient in times of emergency and crisis. They do not deliberate on alternative courses of action, but rather act upon the immediate, concrete situation. And since their responses are so swift, the sensation types may give the impression of total competence, which may not be true. As Mann et al. (1967) explain it;

Thinking types assume that no one could possibly be so effective without having thought the thing through and decided that behavior was consistent with principles; feeling types presume that the sensation type is aware of others' feelings and will not act in a way that is hurtful. Neither assumption is true; the sensation type has not thought about things, nor does he particularly concern himself with how others feel. He simply must act, because action is the only appropriate response to the strength of stimuli he is receiving. (pp. 46-47)

It is argued that sensation types are concerned with power. Because of their concentration on the present, they can outmaneuver those who also spend their energies on the past or future. They also find it most difficult to wait; a delay is equivalent to a denial. For the present is all of life, another reason sensation types are always seeking new sensations.

## Intuitive Type

Intuition, the function which relates to the future, seems to be the least understood of the functions. For those weak in this function, explain Mann et al. (1967), it is difficult to imagine putting faith in the future, in the not-yet-manifested. But this is precisely what intuitives seem to do. For them, the future is perceived first, and then in order to reach the present, the intuitive goes backward from the vision of the future to the less clear present.

The intuition function perceives possibilities, what will be or happen. But for this type the present is a pale shadow, the past a mist. The reality, the excitement are to be found beyond the bend in the future; however, when that bend is reached, it only temporarily leads to a straight road--there is always another curve. The intuitive spends his life in the race towards the next beyond.

Because that which will happen is more real to them than what is happening, as Mann et al. (1967) argue, intuitives often suffer the frustration of waiting for events to catch up with what seems clear and apprehensible to them. The time flow in their world is actually backwards; they start out experiencing the future, but then are constrained to return to the present and wait until chronological time has caught up with their vision.

Because intuitives are continuously having new inspirations, they tend to move from one activity to the other. While others are marching along trying to catch up with the intuitive's vision, he will most likely be off on a new inspiration.

Due to this future-orientation and the speed of new inspirations, the intuitive type is usually quite impatient with details, if not incapable of dealing with them.

In summary, there seem to be four realities, as Mann et al. (1967) have determined:

...the thinking reality of process and ideas; the feeling reality of memories and emotions; the sensation reality of immediacy and concreteness; and the intuitive reality of anticipation and visions. (p. 50)

It is not difficult to see that sensation types, who are present-oriented, and intuitives who are future oriented, often have a difficult time communicating. However, the thinking types, because of their past-present-future orientation are able to tie in and be compatible with the other three types, including the feeling type with its present-past orientation.

Finally, it should be stated that the differences in people due to type differences are related to perceptions of the world; and these differences may be of great magnitude, as Mann et al. (1967) conclude:

It is inconceivable that our most pressing social, political, and interpersonal problems can be solved without taking them [types] into account. (p. 55)

#### Virtue of the Types Together

As mentioned earlier, one of the possible advantages of Jung's typology is its lack of value judgments placed on the different types, that is, no type is considered better or more useful than the others. All have their strengths and weaknesses. (Myers, 1962)



And due to the fact that the various types seem to perform in operationally different modes, too much one-sidedness of style can be a limitation factor. For instance, the strength of sensation types, as Mason and Mitroff (1973) explain, is that they are guided by the facts and are reluctant to extrapolate from them, while the strength of intuitive types is their ability to see through the facts and extrapolate beyond them. However, the sensation type may be too data-bound, too afraid to risk a generalization beyond existing information; and the intuitive may be too data-free, spinning out endless hypothetical conclusions, but without any data base. A manager who is a sensation type runs the risk of being too narrow and bound by current facts, whereas an intuitive manager runs the risk of being too future oriented, with too little attention paid to the present.

Both of these types has its strengths and weaknesses. Alone, they may succeed--or fail. However, if they team up together, they can potentially share each others' strengths. Jung (1968, p. 62) says that "no truth can be established without all four functions." All are needed for a complete picture.

And though there may be conflict between types, Jung (1953) further states that:

The greater the contrast, the greater is the potential. Great energy only comes from a correspondingly great tension between opposites. (p. 130)

Clashes between the types, as Myers (1962) describes, arise out of the very reason that makes the types mutually useful to each other, namely that each one sees the other side of the problem which the opposite naturally overlooks. For example, the intuitive is by nature a



thinker-upper and the sensation type a getter-doner. Without an understanding of their need for each other, they may only experience personality clashes. Typology offers knowledge that can not only cut out irrelevant friction, but also point up the advantages of the differences. (Myers, 1962) Table 2 illustrates the mutual usefulness of the opposite types. (Myers, 1962, p. 82)

### Typology in Decision-Making

When one learns about the underlying factors in the decision-making process, both in regard to himself and to others, it may possibly help him to make more effective decisions, as well as help him to collaborate with other persons.

A sensation type is likely to make decisions on the basis of the concrete facts set before him, without much investigation into the past or future. (Mann et al., 1967) Furthermore, he may not even be aware of another style of making decisions. Type theory describes the different modes of perceiving and judging--both components to decision-making--offering a basis for awareness of other alternatives within the decision-making process. This may enhance a person's desire to strengthen his weaknesses, i.e., to develop his shadow side.

Part of decision-making may include "people" decisions, namely how to get along with people or to solve interpersonal difficulties, and knowing which people should work together on a given problem; these are problems that people in positions of responsibility must solve in some way. Type theory offers a potential system to help deal with these problems.

Table 2. Mutual Usefulness of  
Opposite Types  
(From Myers, 1962, p. 82)

INTUITIVE NEEDS A SENSING TYPE:	SENSING TYPE NEEDS AN INTUITIVE:
To bring up pertinent facts	To see the possibilities
To remember things that were not relevant at the time they happened	To supply ingenuity on problems
To read over a contract	To deal with a complexity having too many imponder- ables
To check records, read proof, score tests	To explain what another intuitive is talking about
To notice what ought to be attended to	To look far ahead
To inspect	To furnish new ideas
To keep track of detail	To "spark" things that seem impossible
To have patience	
THINKER NEEDS A FEELING TYPE:	FEELING TYPE NEEDS A THINKER:
To persuade	To analyze
To conciliate	To organize
To forecast how others will feel	To find the flaws in advance
To arouse enthusiasm	To reform what needs reforming
To teach	To weigh "the law" and the evidence
To sell	To hold consistently to a policy
To appreciate the thinker himself	To stand firm against opposition

Myers (1962) lists effects of the different preferences in work situations, some of which may be directly related to the decision-making process, such as:

#### Introverts

Like to think a lot before they act, sometimes without acting. (p. 80)

#### Extraverts

Often act quickly, sometimes without thinking. (p. 80)

#### Intuitives

Frequently jump to conclusions.

Like solving new problems.

Follow their inspirations, good or bad.

Often tend to make errors of fact. (p. 80a)

#### Sensation Types

Dislike new problems unless there are standard ways to solve them.

Rarely trust inspirations, and do not usually get inspired.

Seldom make errors of fact. (p. 80a)

#### Feeling Types

Often let decisions be influenced by their own or other people's personal likes and wishes.

Dislike telling people unpleasant things. (p. 80)

#### Thinking Types

Tend to decide impersonally, sometimes ignoring people's wishes.

Like analysis and putting things into logical order. (p. 80)

#### Perceptives

Do not mind leaving things open for alterations.

May have trouble making decisions.

Tend to be curious and welcome new light on a thing, situation or person.

May postpone unpleasant jobs. (p. 80a)

#### Judging Types

Best when they can plan their work and follow the plan.

May decide things too quickly.

Tend to be satisfied once they reach a judgment on a thing, situation or person. (p. 80a)

The above are characteristics of pure types. An ST person can be considered as a collaboration of the sensation and thinking characteristics; and, the dominant or principal function will determine which of the two functions, i.e., sensation or thinking, has the most strength and influence on the personality.

#### Closure

A statement of the problem, along with a brief description of type theory and an examination of related research was included in chapter one. This chapter then gave a detailed report on type theory and discussed some related topics, like the shadow side, time perception of the types and the use of typology in the decision-making process.

Given the potential usefulness of this system, the question arises as to how to determine a person's type. Jung has described the difficulty in such a procedure (Brawer and Spiegelman, 1964), but nonetheless, two major instruments were developed to measure type preference, and though both of them seem to produce fairly reliable results, one of them exhibits several advantages. Chapter three will describe the Myers-Briggs Type Indicator and compare it with the other type-determining instrument, the Gray-Wheelwright Psychological Type Questionnaire.

## C H A P T E R    I I I

### THE MYERS-BRIGGS TYPE INDICATOR

This chapter will discuss the Myers-Briggs Type Indicator (M-B Indicator), the instrument used for this dissertation, which determines Jungian preference types. The M-B Indicator will also be compared to a similar instrument, the Gray-Wheelwright Psychological Type Questionnaire. Development of the M-B Indicator, as well as issues related to its format and scoring mechanism, will be covered. Finally, the chapter will list sample items taken from the M-B Indicator.

#### Introduction

As it was discussed in chapter one, the personality typology of Jung (1971a), as operationalized by Myers-Briggs (Myers, 1962) offers a reasonable system of classification for what otherwise may seem like irrational and random behavior. Such a system can be of use in the decision-making process, especially for those in positions of responsibility.

A detailed description of the Jung-Myers-Briggs typology was presented in chapter two. Basically, Jung differentiates two attitude types, introversion and extraversion, as well as four function types, contained on two dimensions, i.e., sensation/intuition and thinking/feeling. (Jung, 1971a)

Myers-Briggs (Myers, 1962) adds the process types of perceiving or judging, which distinguishes what Jung (1971a) would call the "dominant function." If a person is of the perceiving mode, then his dominant, most differentiated function is either sensation or intuition; but if



he is of the judging mode, then his dominant function is either thinking or feeling. Myers-Briggs (Myers, 1962) also refines and develops in depth the four possible perception-judgment combinations, i.e., ST, NT, NF, SF, the types most relevant for this dissertation.

In this chapter, the Myers-Briggs Type Indicator will be discussed. The indicator, which was used for this dissertation, measures Jungian types by means of a forced-item questionnaire. Another instrument developed for measuring Jungian types, the Gray-Wheelwright Psychological Type Questionnaire, (Gray and Wheelwright, 1946a) will be compared with the Myers-Briggs Type Indicator (Myers and Briggs, 1968).

### The Two Instruments

Although Jung (1923) stresses the difficulty in determining someone's type and is reported to have remarked, half-jokingly, that it would be necessary to wait until thirty years after a person's death to determine to which type he belonged (Brawer and Spiegelman, 1964), yet instruments for measuring type preference have been developed.

#### The Gray-Wheelwright and Myers-Briggs Instruments

The Gray-Wheelwright Psychological Type Questionnaire (G-W Questionnaire) was developed on the west coast, at about the same time the Myers-Briggs Type Indicator (M-B Indicator) was being constructed on the east coast, quite independently of one another and with no intercommunication. (Myers, 1962)

The M-B Indicator (Myers and Briggs, 1968) consists of the three parts totalling 166 items, 97 of which are actually scored, the other



69 being experimental items. Parts I and II are similar in format, both sections entirely made up of forced-choice items, such as:

Are you more careful about

- (A) people's feelings
- (B) their rights

or

In a large group, do you more often

- (A) introduce others
- (B) get introduced

Part II of the M-B Indicator, on the other hand, consists of word pairs, with the instructions to check the word that appeals most in each pair. For example:

systematic	spontaneous
justice	mercy
calm	lively

In contrast, the G-W Questionnaire (Gray and Wheelwright, 1964a) contains only 75 items, all scored in a similar style as Parts I and III of the M-B Indicator, except that the G-W Questionnaire items are not all forced-choice. One-third of the items are of the yes/no type, like:

Do you like pets?

- a) yes
- b) no

Do you criticize current conventions?

- a) yes
- b) no

Such items seem to neglect an acquiescence factor, a concept not overlooked by Crowe and Marlowe (1964), when describing the difficulties inherent in yes/no or true/false items on personality tests.

## Comparison

As mentioned in the previous section, the G-W Questionnaire may be weakened by the fact that one-third of its items are of a yes/no type. The M-B Indicator, on the other hand deals with a potential acquiescence factor by having all forced-choice items, none that are yes/no or true/false.

Both the G-W Questionnaire and the M-B Indicator are self-report inventions, liable to certain difficulties, i.e., faking, "psyching out," etc., problems which Myers (1962) and Gray (1949c) both address. But whereas Myers' (1962, p. 77) solution to this dilemma is to treat the Indicator as experimental in nature, i.e., it affords "hypotheses for further testing and verification rather than infallible explanations of all behavior;" the Gray-Wheelwright method is much different. Gray (1949c) reports that ambiguous and "pseudo-type" scores may be related to emotional disturbances, the admired-type syndrome, bias, ambivalence or pseudo-type; these ambiguities are dealt with by questioning family and friends of the subject's type, after which a review session is sometimes held with the subject to more or less argue the discrepancies between his questionnaire results and the opinions on him by his peers. This may be a questionable method, recalling the research reviewed in chapter one on dissonance produced in extraverts and introverts. (Cooper and Scalise, 1974) An extravert would seem, in this case, to be more likely to agree for the sake of conformity with the peer opinions, even though he himself did not truly believe them.

Another factor which the M-B Indicator handles, through its scoring mechanism, but which the G-W Questionnaire does not, is that of social

desirability. Again, Crowe and Marlowe (1964) stress the crucial aspect of this factor. Edwards (1957, p. 3), too, sees its effect and says that "the social desirability continuum appears to me to be the most important single dimension on which to locate personality statements."

In order to solve the problem of social desirability, i.e., some responses being more socially acceptable than others, the M-B Indicator uses variable weightings in the scoring procedure, the details of which will be discussed later. The G-W Questionnaire, however, weights all responses equally, for such items as:

- (i) How many friends do you have?
  - a) Few                      b) Many
- (ii) In giving praise are you
  - a) Reserved                b) Outspoken
- (iii) When about to travel, do you pack up
  - a) At leisure              b) At the last moment
- (iv) Most of the time, do you prefer to associate with
  - a) Practical people        b) Imaginative people

Compare these items with ones taken from the M-B Indicator:

- (a) In the matter of friends, do you tend to seek
  - (A) deep friendship with a very few people
  - (B) broad friendship with many different people

Both items (i) and (a) measure I-E preference, but whereas either response in (i) scores one point, in (a), response (A) receives one point on I and response (B) gets two points on E, since response (A) was found to be more socially desirable than (B), so that a (B) response is considered more than average indication of an E preference. Similarly in the following items, whose variable weightings are given to the left

of each response:

(b) In getting a job done, do you depend on

- 0-J (A) starting early, so as to finish with time to spare  
 1-P (B) the extra speed you develop at the last minute

(c) Are you likely to speak up in

- 2-N (A) praise  
 0-S (b) blame

(d) Would you rather be considered

- 2-S (A) a practical person  
 0-N (B) an ingenious person

It seems that Gray (1949c) was, at least, aware of some type of social desirability factor, which he said sometimes ethically loaded a response, possibly causing bias, but he discounts this trend, since the "major matter is the total score for . . . each aspect." (p. 80)

What perhaps should be considered here, though, is that even a few responses thrown off by social desirability can change a person's measured type on the Questionnaire.

There is another problem in these type of instruments of multiple correlation with more than one index, a situation which could possibly produce less accurate results. With the M-B Indicator, every item was analyzed for each index (S, N, T, F, P, J) and those which had comparable correlations with more than one index were dropped from the indicator. (Myers, 1962) However, no such analysis is made with the G-W Questionnaire. Again, Gray (1949c) is cognizant of "overlaps" or "overlays" (p. 82) of responses, i.e., one response relating to more than one preference or index, but no objective procedure is followed to correct for such errors.

Another potential weakness in the G-W Questionnaire is the positioning of each preference item on the questionnaire. For example, items 1-25 relate to I-E, 26-50 deal with S-N and 51-75 with T-F. In contrast, the M-B Indicator has each preference scattered throughout the instrument.

Finally, the G-W Questionnaire may be easier to psyche out, or to understand what the questions are meant to determine. For instance it asks:

- (v) As you grow older, are you becoming
  - a) More introverted      b) More extraverted
- (vi) In perceiving things, do you notice
  - a) the details              b) the effect

This last assessment may be borne out by the research Bradway (1964) conducted on 28 Jungian analysts, all of whom were typed according to

- a) M-B Indicator
- b) G-W Questionnaire
- c) Self-typing

Though the results were quite similar for all three methods, the G-W Questionnaire was closer to the analysts' self-typing on T-F and P-J. This may have been due, in part at least, to the fact that the analysts clearly knew which type they thought themselves to be, and with this knowledge in hand, were more able to determine the preference related to each response in the G-W, thus molding the score to their preconceived notions of self-type.



This argument is supported by research conducted by Stricker and Ross (1962), who administered the G-W Questionnaire and the M-B Indicator to 47 male students at Golden Gate College. Reliabilities of E-I, S-N, T-F and P-J with the corresponding G-W and M-B scales are shown in table 3.

Table 3. Split-Half Reliabilities of G-W Questionnaire and M-B Indicator for Male Golden Gate College Students, N = 47.  
(From Myers, 1962, p. 22)

Index	G-W Questionnaire	M-B Indicator
I-E	.64	.84
S-N	.58	.62
T-F	.30	.81
J-P	.00	.84

Therefore because of the apparent superiority of the M-B Indicator over the G-W Questionnaire in dealing with such issues as acquiescence, social desirability, multiple index correlation, the M-B Indicator seems the most appropriate for the present dissertation.

#### The Indicator

In order to test out the hypotheses stated in chapter one, believed, liked and desirable preferences will be measured against

preference types as scored on the Myers-Briggs Type Indicator, an instrument which was developed by Myers and Briggs (1962) in order to determine Jungian preference types. The M-B Indicator was chosen for this dissertation over the other major Jungian preference instruments, the Gray-Wheelwright Psychological Questionnaire (1946a), because of the Indicator's advantages, as discussed in the previous section. Much of the information in the following three sections is taken from the Manual for the Indicator (Myers, 1962).

#### Development of the Indicator

The Myers-Briggs Type Indicator (Myers-Briggs, 1968) developed through two periods of construction, one producing an adult form, the other expanding the form for appropriateness with high school and college students as well. The first period, 1942 to 1944, began with writing a large number of original items based on type theory and observation, then validated by some 20 of Myers' friends. The Indicator was continuously refined and tested on progressively larger samples, mostly adult. These tests were for internal consistency, and since discrimination was desired at the center rather than the extremes, very broad "criterion groups" were used, including in them every case which scored more than one point beyond the margin of the preference. To pass this analysis, items needed to be answered at least 60% of the time in accord with type classification. Because of the inclusiveness of the criterion groups the requirements were quite strict. Each item was analyzed with every index, and those with comparable relationships to more than one index were dropped.

In the second period of development, from 1956 to 1958, over 200 new items were added, including word pairs. These were given to a small group of people of known type who were familiar with the Indicator. As the Indicator progressed and was revised, it was given to larger groups of people, including high school and college students, when the lower limit of goodness was raised to 0.63. After further revision, an internal consistency analysis was made using 2573 Pennsylvania high school boys in college preparatory 11th and 12th grades, with a similar sample of girls. When supply permitted, students were taken equally from the upper and lower halves of their classes. Priority was given to under and over-achievers to diminish the natural disparity in IQ of the upper and lower halves. There was a balance made between the sexes, and within each sex, responses to items of each sex were reduced to proportions and averaged as a basis for analysis of that item for that sex. Following this procedure was necessary in order to give the rarer introvert types equal weight with the more numerous extravert types and also to prevent a bias by any one type in the analysis. The surviving items became forms E and F, both identical except that F contains unscored experimental items and takes longer to finish. Type E can be taken during a high school class period and may be given to all ages from 7th grade up.

### Issues

Social Desirability. In order to avoid a potential bias due to acquiescence or desirability, the Indicator employs forced-choice items, introduced by a phrase.

For example:

When you go somewhere for the day, would you rather:

- A) Plan what you will do and when
- B) Just go

Part II of the Indicator, which contains only word pairs, poses questions such as:

Which word in each pair appeals to you more?

- A) Literal
- B) Figurative

- A) Gentle
- B) Firm

Effort was made to make the responses appealing to the appropriate type, i.e., J-P items were styled so that J types would be just as attracted to judging responses as the P types would be to perceptive responses. When this was not possible, variable weighting was adopted. This method was employed in order to cancel out items of high social desirability. In about one third of the items, one response is much more popular than the other. In such cases, the response with a high social desirability is given zero weight, while the other response is considered above average evidence of preference for the type and is given a weighted 1 and 2. If both items prove to be equally attractive in practice, no difference is given in weight, with both receiving weights of 1 or 2, depending on the value of item.

The formula used in the weighting is computed by a formula which states the probability of its being given in accord with the total score if it is given at all, in an evenly divided population, and it is

called the goodness of an Indicator response.

$$gJ = \frac{\% \text{ of J's giving J response}}{(\% \text{ of J's giving a J response}) + (\% \text{ of P's giving a J response})}$$

$$gP = \frac{\% \text{ of P's giving P response}}{(\% \text{ of P's giving a P response}) + (\% \text{ of J's giving a P response})}$$

In order for a response to be scored at all, its goodness must be above a certain level and its popularity below a certain level. If the second term in the denominator of this formula is above 0.50, then the response is devinitely overpopular. Since it is considered more harmful in possibly displacing people towards the center of the index than it is worth, it is given a weight of zero.

Multiple Index Correlation. In order to prevent distortion and inaccuracies from correlation, no item is scored for more than one index. As a precautionary measure, all items were analyzed with each index and item showing comparable relationships with more than one index were dropped from the Indicator.

Acquiescence. Since people may differ markedly in acquiescence or general willingness to concur, the Indicator gives no chance to say "no" directly, because the items present choices. But if a person is unwilling to go along with either answer, he may choose to omit the response. This alternative is permitted in the belief that the greater validity achieved by the omission of very doubtful responses is worth any inconvenience it may entail.

Separate Weighting. In about two-thirds of the items, one response was found to be more socially desirable (as discussed previously) than



the other response. Because of this, the more popular response was determined to be less trustworthy evidence of preference. It was therefore given a lower weighting than the less popular response, which was considered above-average evidence of preference, according to the principle that "admissions against interest" are likely to be true.

Sex Differences in T-F Weighting. The goodness of response for the I-E, S-N, and P-J items on the Indicator are quite similar for males and females. On the T-F scale, however, there are some disparities. It has been the case that females with a thinking preference tend to respond to more feeling items than males do. It may be due to a kind of social desirability, i.e., certain feeling responses are more socially desirable for females than for males, or it may be due to effects of training. On the T-F items where there is the most difference between the sexes, the T responses are given more weight than the F response in scoring for females.

#### Division Points

Because the Jungian typology deals with preferences that lie on continuum-indices, as opposed to separate and discrete preference types, the problem arises as to where to put the cutting point to separate the people holding one preference from those holding the opposite preference, so that the two types of people can be most cleanly divided.

A number of measures have been taken to make the division points as clear as possible, namely, permitting omissions with allowance made for this in the scoring; variable weighting because of social desirability, giving double weights to the more significant responses for the sake of

better discrimination at the center.

In order to determine the accurate division points, and also to determine whether the types are dichotomous in nature, Myers (1962) used the method of plotting the regression of various dependent variables upon both halves of an index. This needs a dependent variable that would show disparity between the two halves. Myers (1962) used such variables as GPA, IQ and vocabulary.

### Indicator Items

To better familiarize the reader with the Myers-Briggs Type Indicator (Myers and Briggs, 1968), a sample of items, both phrases and word-pairs, is listed below, with the corresponding preference weights shown to the left side of each response.

Does following a schedule

- 2-J (A) appeal to you  
2-P (B) cramp you

Do you usually get on better with

- 2-N (A) imaginative people  
1-S (B) realistic people

At parties, do you

- 1-I (A) sometimes get bored  
2-E (B) always have fun

Would you rather work under someone who is

- 2-F (A) always kind  
0-T (B) always fair

Are you at your best

- 1-P (A) when dealing with the unexpected  
1-J (B) when following a carefully worked out plan

If you were a teacher, would you rather teach

- 2-S (A) fact courses  
 2-N (B) courses involving theory

Can you

- 2-E (A) talk easily to almost anyone for as long as you have to  
 2-I (B) find a lot to say only to certain people or under certain conditions

Which of these two is the higher compliment

- 1-F (A) he is a person of real feeling  
 2-T (B) he is consistently reasonable

#### WHICH WORD APPEALS TO YOU MORE?

T:1 if male, 2 if female	analyze	sympathize	2-F
2-S	build	invert	1-N
1-E	hearty	quiet	2-I
2-J	systematic	spontaneous	2-P
F:1 if male, 0 if female	soft	hard	T:1 if male, 2 if female
1-S	concrete	abstract	2-N
1-E	party	theater	0-I
2-J	scheduled	unplanned	2-P

#### Closure

Chapters one and two covered the statement of the problem and discussed the Jungian type theory in detail, whereas this chapter was concerned with the Myers-Briggs Type Indicator, the instrument used for this dissertation, which determines preference types according to the model of Jung.

The Myers-Briggs Type Indicator was compared with another similar purpose instrument, the Gray-Wheelwright Psychological Type Questionnaire, and the apparent superiority of the M-B Indicator was shown in several respects.

Now that the foundation has been laid on the theory and the instrument, the next chapter moves to the procedures used in this dissertation and will present the methodology followed here.

## CHAPTER IV

### METHODOLOGY

#### Introduction

Chapter one discussed the utility of the Jungian typology in decision-making and human relations, along with a brief description of typology and a review of related research. A detailed description of Jung's typology, as operationalized by Myers-Briggs, was presented in chapter two. Chapter three was concerned with the Myers-Briggs Type Indicator, comparing it with a similar instrument, giving examples of both and further dealing with issues involved with the M-B Indicator.

This chapter will relate the methodology followed for this dissertation, dealing with such aspects as subjects, procedure for evaluation, procedure for hypotheses testing, and the questionnaire. The experimental design is shown in figure 5.

#### General Description

The main purpose of this dissertation is to develop an educational tool for teaching those in administrative positions about type preferences and also to determine whether this audio-visual program can be used to predict self type of individuals. This educational tool is an audio-visual program, i.e., slides with an audio-tape narration; it was evaluated as to lack of bias towards all types by 33 people of various types. After the demonstration of the audio-visual program to groups of managers, believed, liked and desirable Jungian preferences were compared with type as measured by the Myers-Briggs Type Indicator.



E X P E R I M E N T A L    T R E A T M E N T S

	Completion of Personality Indicator	Audio-Visual Presentation Learning Sequence	Post-Learning Questionnaire Completion	Type Reporting
Pretest Group	Myers-Briggs Type Indicator 166 Items	Color Slide Audio Narration Presentation	12 Items 2 Pages	Learn Self-Type Scores
Test Group	Same as Above	Same as Above	9 Items	Same as Above

Figure 5. Experimental Design

## Procedure

### Audio-Visual Program

The educational tool developed for this dissertation is an audio-visual program, which describes the Jungian typology and its uses in both decision-making and also in human relations. This 15 minute program consists of 90 color slides, along with an audio-narration on quarter-inch tape. The script or scenario of this program is presented in the appendix of this dissertation.

Basically, the program describes the fundamental aspects of typology and relates its utility to the decision-making process, as well as human relations, for those people in administrative positions. It is geared towards experienced managers and executives who are studying for a master's degree in administration.

### Evaluation

In order to ascertain whether the audio-visual program was relatively free from bias towards any of the types, it was presented to people both familiar and unfamiliar with type theory for their evaluations. Initially, a pilot test was made using six persons of varying types, all well-acquainted with typology, who evaluated the program, both in script and audio-visual forms, for possible bias towards any types, or for potential statements involving social desirability in favor of any of the types. Changes were then made in the program, when it was felt necessary. Finally, the program was pretested for differential bias by 27 people who had little, if any, previous background in typology.

## Hypotheses Testing

A total of 54 students, enrolled in master's degree programs in business administration served as subjects in the experimental part of this dissertation.

The subjects completed the M-B Indicator and brought it to class. They were told by the experimenter that they would watch an audio-visual program and afterwards be asked to answer a fairly short questionnaire. After previewing the program, the subjects were handed a nine-item questionnaire, which they then filled out. Following this the M-B Indicators were scored by the subjects, after which each subject found out his own type and the answer sheets and questionnaires were passed in to the experimenter.

For all the subjects involved, then, believed, liked and desirable preferences were compared and analyzed with measured preferences, using the SPSS computer program (Statistical Package for the Social Sciences, 1970).

Through this method, the three hypotheses, as listed below, were tested:

### Hypothesis I

After viewing the audio-visual program, but without knowledge of their own type, when asked which of the four basic types (ST, NT, NF, SF) they believe themselves to be, the subjects will choose their own type, as previously measured by the M-B Indicator.

### Hypothesis II

In the same situation as above, when asked which type they would like to be, the subjects will select their own, measured type.

### Hypothesis III

In the same situation as above, when asked which type the subjects find desirable, they will choose their own, measured type.

### Questionnaire

A nine-item questionnaire was administered to the subjects immediately following their previewing of the audio-visual program. The questionnaire is exhibited in figure 6. Items 6, 7 and 8 are rank-ordered items, that is, the subjects rank ordered (from 1 to 4 on ST, NT, SF and NF and from 1 to 2 on P-J and I-E) the types according to degree of preference.

### Closure

Jung's typology identifies four basic functions, along two dimensions. On the perception dimension lie sensation and intuition, while the dimension of judgment contains thinking and feeling. The other processes in typology are the perceptive type vs. the judging type and the two attitudes of introversion vs. extraversion. The Myers-Briggs Type Indicator, as described in chapter three, measures preferences for the four functions, as well as for the two processes and the two attitudes.

The present chapter described the methodology followed in order to compare and analyze type, as measured by the M-B Indicator, with believed, liked and desirable types of the subjects involved.





## C H A P T E R    V

### RESULTS

#### Introduction

Thus far, the theoretical background and methodology of this dissertation has been covered. Chapter one explained the usefulness of Jung's typology, that it classifies seemingly random behavior into patterns which are quite orderly and consistent. Chapter two offered an in-depth study of typology. Basically, typology describes the various attitudes and functions of extraversion vs. introversion, sensation vs. intuition, thinking vs. feeling and perceiving vs. judging. The Myers-Briggs Type Indicator (M-B Indicator), the instrument used here for measuring typology, was the subject of chapter three. The Indicator was also compared with a similar purpose instrument, the Gray-Wheelwright Psychological Type Questionnaire. And chapter four discussed the methodology used in this dissertation. The present chapter will present the results of both the pretest and the actual hypotheses testing.

#### Pretest

In order to determine whether the audio-visual program was slanted or biased towards any type, it was presented first to individuals of varying types who were quite familiar with type theory, and then to groups of individuals who had taken the M-B Indicator but did not as yet know their types.

Initially, the scenario was shown to seven people, six of whom were well acquainted with typology. Minor changes were made where there was question as to bias. In the final version of the scenario, none of the seven individuals felt there was any bias towards one or more types.

After the program was put together in slide/tape narration form, it was presented to six persons, mainly NT's and NF's, who were well-versed in typology. Again, there was felt to be no bias in the program.

Finally, the program was shown to four groups of people, including professionals, masters level students and student nurses, who were given questionnaires similar to the one shown in chapter four. The respondents were asked which type they liked to be and also which type they believed they were. By comparing their responses with their measured type, it was felt that any possible bias present in the program would be shown.

Table 4 shows the results for the 27 respondents. The ST's and NT's believed they were their own, measured type 100% of the time, while the NF and SF groups did so 46% and 17% of the time, respectively. In response to which type they liked to be, only the ST group had a different accuracy rate than the believed rates. The type the ST's liked to be agreed with their measured type 60% of the time.

Table 4. Pretest of Audio-Visual Program  
by Respondents of Known Type,  
N = 27

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Type (as measured by M-B Indicator)	ST	NT	NF	SF
No. of respondents in each group	5	3	13	6
Percentage of respondents who <u>believed</u> were own type	100%	100%	46%	17%
Percentage of respondents who <u>liked</u> to be own type	60%	100%	46%	17%

---

## Hypotheses Testing

Hypothesis I

The first hypothesis is listed below:

After viewing the audio-visual program, but without knowledge of their own type, when asked which of the four basic types (ST, NT, SF, NF) they believe themselves to be, the subjects will choose their own type, as previously measured by the M-B Indicator.

Table 5 shows the relationship between type as measured by the M-B Indicator and type as believed, according to the first choice or rank order only. Except for the SF type, the other types seemed fairly accurate in predicting their own types. For instance, 58.8% of the ST's were correct in their prediction, along with 40.0% of the NT's and 44.4% of the NF's.

Table 5. Measured Versus Believed Type  
(First Choice), N = 54

		Believed Own Type to Be (First Choice)					
		ST	NT	SF	NF	Total	
Type as Measured by M-B Indicator	ST	10 58.8	4 23.5	2 11.8	1 5.9	17	count percent
	NT	10 40.0	10 40.0	1 4.0	4 16.0	25	
	SF	2 66.7	1 33.3	0 0.0	0 0.0	3	
	NF	2 22.2	2 22.2	1 11.1	4 44.4	9	
Total		24	17	4	9	54	

Because the subjects were given four choices on the rank orders for ST, NT, SF, and NF, the present writer felt that arriving at the results by using only choice number one might be too limiting. This, in effect, eliminates the other three choices and does not fully utilize the data. Therefore, the present writer thought it appropriate to group together rank orders 1 with 2 and 3 with 4. Table 6 shows these results. Here, 42 out of 54, or 78% of the subjects were able to predict (believe) their own types on either the first or second choice. Comparing measured to believed type, the ST group showed the highest agreement at 88%, while agreement in the NT group was 80%. The SF's and NF's showed agreements of 33% and 67%, respectively.

Table 6. Measured Versus Believed Type  
(Grouping Rank Orders), N = 54

		Believed Own Type to Be		
		Correct (choice 1 or 2)	Incorrect (choice 3 or 4)	Total
Type as Measured by M-B Indicator	ST	15	2	17
	NT	20	5	25
	SF	1	2	3
	NF	6	3	9
	Total	42	12	54



## Hypothesis II

The second hypothesis is listed below:

After viewing the audio-visual program, but without knowledge of their own type, when asked which of the four basic types (ST, NT, SF, NF) they would like to be, the subjects will choose their own type, as previously measured by the M-B Indicator.

Table 7 shows the comparison between measured type and type liked to be, as indicated by rank order number 1 from the questionnaires. In this case, the ST and NT groups indicated they liked to be their own types 58.5% and 60.0% of the time respectively. Even though the SF (0%) and NF (22.2%) groups were not as accurate, they did mostly choose types that had at least one function in common with their own type. For instance, all the SF's chose either ST or NF, both of which have a function in common, while none of the NF group chose ST, which is the opposite type.

Table 7. Measured Type Compared With Type Liked to Be (First Choice), N = 54

		Type Liked to Be (First Choice)					
		ST	NT	SF	NF	Total	
Type as Measured by M-B Indicator	ST	10 58.5	3 17.6	1 5.9	3 17.6	17	count percent
	NT	6 24.0	15 60.0	2 8.0	2 8.0	25	
	SF	1 33.0	0 0.0	0 0.0	2 66.7	3	
	NF	0 0.0	6 66.7	1 11.1	2 22.2	9	
	Total	17	24	4	9	54	

When comparing first and second choice rank orders together, versus third and fourth choices, the results, as shown in table 8, indicate that 41 out of 54, or 76% of the subjects would like to be their own, measured type on the first or second choice. Taking it on individual types the ST's indicated they liked to be ST 76% of the time, the NT's liked to be NT 88% of the time and the SF and NF groups liked to be their own types 0% and 67% of the time, respectively.

Table 8. Measured Type Versus Type Liked to Be  
(Grouping Rank Orders), N = 54

		Would Like to Be Own Type		
		Yes (choice 1 or 2)	No (choice 3 or 4)	Total
Type as Measured by M-B Indicator	ST	13	4	17
	NT	22	3	25
	SF	0	3	3
	NF	6	3	9
	Total	41	13	54

In order to do a chi square analysis, the number of cells in table 7 was reduced to 4, comparing ST and NT measured types with ST and NT liked types. This was done since these cells had larger frequencies, most of them over 5, in contrast to the SF and NF cells which had lower frequencies. Table 9 shows this new table arrangement. With one degree of freedom, the chi square of 5.72 showed significance

at the .017 level.

Table 9. Measured Versus Type Liked to Be  
(First Choice, ST and NT only),  
N = 34

		Type <u>Liked</u> to Be (First Choice)			
		ST	NT	Total	
Type as Measured by M-B Indicator	ST	10	3	13	Count
	NT	6	15	21	
	Total	16	18	34	

### Hypothesis III

The third hypothesis is listed below:

After viewing the audio-visual program, but without knowledge of their own type, when asked which of the four basic types (ST, NT, SF, NF) they find desirable, the subjects will choose their own type, as previously measured by the M-B Indicator.

Table 10 displays the relationship between measured type and desirable type. On both the first and second choices or rank orders, 41 out of 53, or 77% of the sample, thought their own measured type was desirable. Again, doing a chi square using only ST and NT, as seen in Table 11, a significance level of .02 was obtained.

Table 10. Measured Versus Desirable Type  
(Grouping Rank Orders), N = 53

Thought Own Type to Be Desirable			
Type as Measured by M-B Indicator	Yes	No	Total
	(choice 1 or 2)	(choice 3 or 4)	
ST	14	3	17
NT	20	4	24
SF	0	3	3
NF	7	2	9
Total	41	12	53

Table 11. Measured Versus Desirable Type  
(First Choice ST and NT only), N = 33

Type Believed Desirable (First Choice)				
Type as Measured by M-B Indicator	ST	NT	Total	Count
	ST	11	3	
NT	6	13	19	
Total	17	16	33	

#### Other Results

#### Introvert/Extravert

The relationship between accuracy of type prediction (on ST, NT, SF and NF) and measured type of I-E and P-J was analyzed. In a chi

square analysis using the P-J dimension, the data demonstrated that no relationship seemed to exist between accuracy of type prediction and the P-J preference type.

However, when using the I-E dimension, a potential relationship was shown on liked type, where the significance level was .10 (see Table 12). This is somewhat higher than the usual .05 or .01 significance levels, but considering the relatively small sample, it was felt appropriate to include these results. The  $p < .10$  means that there is one chance in ten that such a relationship would be manifested due to chance and/or sampling error.

Table 12. Accuracy of E Versus I Types on Type Liked to Be, N = 54

Of Four Main Types (ST, NT, SF, NF) Type Liked to Be			
Type as Measured by M-B Indicator	Correct (choice 1)	Incorrect (choice 2, 3 or 4)	Total
	Introvert	18	11
Extravert	9	16	25
Total	27	27	54

### Spearman Correlations

As a further analysis, the SPSS computer program (Statistical Program for the Social Sciences, 1970) was used to measure degree of association between measured type scores and the believe, like and desirable



type preferences, according to the questionnaire responses.

Because the questions regarding type preference were rank ordered, Spearman rank-order coefficients were computed. The rank orderings for each variable (variable here refers to BELST, LIKEST, DESST, BELNT, etc.) on the questionnaires were correlated with the continuous type scores of the subjects. The continuous score gives each dimension only one score, rather than the customary two. For instance, instead of having a numerical score for I and another one for E, with the highest one being the type preference, the continuous score is only one numerical value for both sides of the dimension. The continuous score is either positive or negative, depending on which side of the dimension it is on. They are calculated as shown below:

$$I \text{ (continuous)} = 2(I - E) \div 1$$

$$N \text{ (continuous)} = 2(N - S) \div 1$$

$$F \text{ (continuous)} = 2(F - T) - 1$$

$$P \text{ (continuous)} = 2(P - J) \div 1$$

And the continuous scales used are:

INTRO	For I-E; I is positive and E negative
INTUIT	For N-S; N is positive and S negative
FEEL	For F-T; F is positive and T negative
PERCEIVE	For P-J; P is positive and J negative

As shown above, the positive side of each scale is the type preference alluded to in each scale name, i.e., positive INTUIT indicates an N score or type preference. The other side of each dimension, then, is represented by a negative continuous score. In the case of INTUIT, a negative score means a sensation type preference.

The rank-ordered variables used in these correlations are listed, along with their definitions, in table 13. Each variable is grouped with the other variables it was ranked with. Some are in groups of four, and others in groups of two.

Table 13. Description of Variables Used in Spearman Correlations

Variable Name	Meaning
BELST BELNT BELSF BELNF	Subjects rank ordered these variables 1, 2, 3 and 4 as to which type they <u>believed</u> themselves to be--ST, NT, SF, NF
BELI BELE	Rank ordered 1 and 2 as to whether <u>believed</u> self as I or E
BELP BELJ	Rank ordered 1 and 2, whether <u>believed</u> self to be P or J
LIKEST LIKENT LIKESF LIKENF	Rank orders of 1, 2, 3 and 4 were given to indicate measure of <u>liking</u> to be these four types
LIKEI LIKEE	Rank ordered 1 and 2, whether <u>liked</u> to be I or E
LIKEP LIKEJ	Rank ordered 1 and 2, whether <u>liked</u> to be P or J
DESST DESNT DESSF DESNF	Degree of <u>desirability</u> to subject was indicated by rank ordering these variables 1, 2, 3 and 4
DESI DESE	Rank ordered 1 and 2, whether thought I or E more <u>desirable</u>
DESP DESJ	Rank ordered 1 and 2, whether thought P or J more <u>desirable</u>

Table 14 shows the results of the Spearman Correlation Computations.

Significant positive correlations with  $p < .001$  are shown between INTRO and the two variables BELI and WANTI, while significant negative correlations at the .001 level are demonstrated between INTRO and the variables BELE and LIKEE.

A similar trend is exhibited with the continuous Intuition score. It shows a significant negative correlation at the .01 level between INTUIT and the variables BELST, LIKEST and DESST and also a significant positive correlation at  $p < .05$  between INTUIT and the variables BELNT, LIKENT and DESNT.

In relation to the continuous feeling scores, significant correlations exist between FEEL and the variables related to ST, NF, P and J (BELST, LIKEST, BELNF, etc.). Significant negative correlations at  $p < .05$  are shown between FEEL and BELST, LIKEST and DESST. There was positive correlation at  $p < .07$  between FEEL and BELSF and LIKESEF. And a significant positive correlation at  $p < .05$  is shown between FEEL and the variables BELNF and LIKENF.

In addition, correlations at  $p < .01$  are demonstrated between FEEL and the variables related to P and J, showing a positive correlation with LIKEP and DESP and a negative correlation with LIKEJ and DESJ.

And finally, coming to the correlations with the PERCEIVE score. Significant negative correlations at  $p < .05$  are shown between PERCEIVE and BELST, LIKEST and DESST. Conversely, significant positive correlations at the .05 level exist between PERCEIVE and the variables LIKENF and DESNF.

Table 14. Results of Spearman Correlations, N = 54

	BELST	LIKEST	DE SST	BELNT	LIKENT	DESNT	BELSF	LIKE SF	DE SSF	BELNF	LIK ENF	DE SNF
INTRO	.24	.13	.18	.11	.07	.03	-.12	-.13	-.22	-.22	-.05	-.05
INTUIT	-.38**	-.35**	-.34**	.30*	.37**	.35**	-.21	-.16	-.17	.19	.15	.18
FEEL	-.31*	-.47***	-.36**	-.16	-.12	-.17	.26	.25	.20	.32*	.36**	.36**
PERCEIVE	-.34	-.28*	-.29*	.06	-.20	.05	.19	.05	-.02	.18	.28*	.32*

	BELI	LIKI	DESI	BELE	LIKEE	DESE	BELP	LIKEP	DESP	BELJ	LIKJ	DE SJ
INTRO	.72***	.57***	.39**	-.72***	-.57***	-.39**	-.25	-.24	-.14	.25	.24	.14
INTUIT	-.38**	-.20	-.06	.38**	.20	.06	.27	.10	.03	-.27	-.10	-.03
FEEL	-.14	-.09	-.18	.14	.09	.18	.19	.37**	.35**	-.19	-.37**	-.36**
PERCEIVE	-.32*	-.23	-.04	.32*	.23	.04	-.01	-.30*	.20	.01	-.30*	-.20

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

The correlations between PERCEIVE and the P and J variables (BELP, LIKEP, etc.) show a significant positive correlation at  $p < .05$  with LIKEP and a significant negative correlation with LIKEJ. But there seemed to be no correlations between PERCEIVE and BELP or BELJ.

#### Closure

The earlier parts of this dissertation discussed the Jungian typology, as well as the M-B Indicator. Later, the methodology of this dissertation was explained. This chapter discussed the pretest and the results of the hypotheses testing, along with the Spearman Correlation results.

C H A P T E R    V I  
DISCUSSION AND CONCLUSIONS

Introduction

The Jungian typology may offer a reasonable system of classification for often seemingly random behavior. To determine individual typology, the Myers-Briggs Type Indicator was used in this dissertation. The subjects were given the Indicator and, after completing it, they watched an audio-visual program explaining typology. Then the subjects were asked to respond to a questionnaire with items concerning what type they believed themselves to be and which type they liked to be, as well as which type they found desirable. Only after finishing the questionnaire were the subjects informed of their type scores from the M-B Indicator. Chapter five discussed the results of the analyses done on their responses. The present chapter is reserved for the final discussion and conclusions of this dissertation.

Pretest

The pretest showed the ST and NT groups to be quite accurate in self-type prediction. The F types, however, especially the SF's, were not as accurate and there was some question as to whether the audio-visual program favored the T's over the F types.

At first glance, it may appear that the program is biased against F, especially SF. This sample is rather small, especially for the NT's. In addition, 4 out of 6 of the SF's were student nurses, the only undergraduates in the sample. Their ability to absorb and assimilate



the information on the audio-visual program was probably not as developed as the rest of the respondents, most of whom were graduate students. The undergraduate nursing students may have exhibited such a tendency because of their lack of experience and less overall academic exposure.

However, this seeming avoidance by the subjects of the feeling preference could be due to the emphasis in our society on thinking, impersonal characteristics. Mogar (1969) discusses the effect of the encouragement of feeling judgments, in our educational institutions and in the society in general.

In conclusion, the writer feels that the audio-visual program is generally unbiased. However, there may be a slight bias against F, especially SF, but the sample is too small to be able to draw any concrete conclusions from it. But if the program is indeed unbiased, then these results, i.e., more accuracy in type prediction by T's than F's, may be due to two factors:

- 1) Lack of social desirability for feeling judgments, especially in a managerial population;
- 2) Thinking types may be better equipped to predict self type.

In order to overcome these, it perhaps would have been better to place a heavier emphasis in the audio-visual program on the feeling function, especially in relation to SF, and its usefulness in the managerial setting. It is questionable, though, whether this would have helped the F types in type prediction, since the F sample was really too small to draw any concrete conclusions from. Also, a stronger emphasis in the presentation on F may have caused some of the T types

to choose the feeling type. And, it may be, as suggested above, that the feeling types are simply less accurate, generally, in type prediction.

### Hypotheses Testing

The hypotheses basically stated that the subjects ( $N = 54$ ) would be able to predict their own types, both according to which type they believed they were, as well as the type they liked to be and which type they found desirable, after viewing the audio-visual program, but without as yet knowing their type scores from the M-B Indicator. In order to determine the ability to predict self type, each subject filled out the questionnaire which is discussed and shown in chapter four. All the questions regarding type were to be answered with rank ordered numbers, i.e., the types were rank ordered 1, 2, 3, 4. In the case of the I-E and P-J dimensions, the rank ordered numbers were 1 and 2.

Hypothesis I is concerned with the comparison of type as measured by the M-B Indicator and type as believed. The results indicated that, except for the SF type, the other types were fairly accurate in predicting their own measured types.

The SF sample is too small to draw any conclusions from these results, i.e., none of the SF group predicted type correctly. If the SF sample were larger, it would be possible to ascertain whether the SF's performed poorly, in general, on self type prediction. If this had been so, the conclusion might have been drawn that since the audio-visual program was developed by an NT, i.e., the present writer, and since NT and SF are opposite types with no function in common, the writer may

have had more difficulty displaying the advantages of the SF characteristics in a managerial setting. This possible problem may also have been compounded by the lack of F types and values in the manager population and environment. That is, the environment of managers seems to be more cold and impersonal, indicative of the T influence, rather than the warm, personal environment of F.

However, the results generally support Hypothesis I, especially when considering the grouping of rank orders 1 and 2. In this case, self-type prediction was quite high on all types but SF, which had a fair level of accuracy.

Hypothesis II assumed that the subjects would like to be their own measured type. Here, as in the first hypothesis, the T's were more accurate in type prediction than the F's. Again, this may be related to a social desirability of T over F. Grouping rank orders 1 and 2 indicated more conclusive support of the hypothesis.

In both Hypothesis I and Hypothesis II, the grouping of rank orders 1 with 2 and 3 with 4 showed quite a high level of accuracy in self-type prediction. Very few chose their own type on rank orders 3 or 4. Since the 15-minute audio-visual program was the first exposure most of them had had to typology, it is not difficult to understand the difficulty in absorbing all the concepts in 15 minutes. For this reason, very brief descriptions of the main types were put in the questionnaire. This illustrates further that the purpose of the program was not for memorization of the different types, but rather to teach type recognition skills.

Hypothesis III assumed that the subjects would find their own measured type desirable. As with the previous hypotheses, the results,

especially when grouping rank orders, generally support the hypothesis. But, once more the thinking types were more accurate in type prediction than the feeling types.

There was little difference in the results when comparing measured type versus believed, measured versus liked and measured versus desirable types. This may be due to a cognitive dissonance factor. Since most of the subjects seemed to answer the three questions on type preference (related to believe, like and desirable) similarly, a tendency may be shown here to reduce inner conflict in the subjects. For example, it might cause dissonance if a subject believed he was ST but liked to be NF.

In the analysis of the results supporting Hypothesis II, it was noted that the introverts were more accurate in type prediction than the extraverts were. These results support Jung's (1971a) theory of extraversion/introversion. According to Jung, the introvert focuses his perception and judgment functions on his inner world of ideas, while the extravert turns his perceptions and judgments outward onto the environment. One would therefore expect introverts to be more conscious of who and what they are, that is, to be more aware of their own psychological types than extraverts would be.

The sequencing of items in the questionnaire may have influenced the results somewhat. The item regarding believed type was purposefully placed before the item referring to liked type, since it was felt that if a subject was asked which type he would like to be first, it may have been difficult to give a different answer on the believed type item. In other words, the subject might have been placed in the situation of

liking one type and then being unable to respond differently to believed type. It would almost be like saying, "Well, I like this type, so how can I be a type I do not like?"

### Spearman Correlations

The Spearman Correlations generally supported the hypotheses. It was demonstrated that in most cases type preference score was related to the corresponding believed, liked and desirable type.

For example, the more extreme N a subject was, the less likely he was to see himself as ST, but rather as NT. And similar trends were shown with other types. Extreme introverts were unlikely to choose E as their own type, and so on.

Several correlations were demonstrated which did not relate to the hypotheses. For instance, a relationship was shown between feeling types and liking to be P. This can be explained by examining the proportions of P and J types in the T and F populations; which are listed below:

F (n=12): 50% (6) were P type

T (n=42): 74% (31) were J type

Therefore, since a high proportion of the thinking types were J, we would expect that the T types would like to be J, which was indicated in the results.

In addition, the J types saw themselves as ST. This could be due to the lower proportion of sensation types in this sample who were P, as shown below:

S (n=23): 26% (6) were P  
74% (17) were J



Therefore, it can be demonstrated that even the correlations not related to the hypotheses have a logical explanation.

As indicated before, the results generally support the three hypotheses. However, these results were based on a study which had certain limitations, as explained in the next section.

#### Statement of Limitations

The present writer sees the following limitations in this dissertation:

1. The sample was too small, especially for the SF group. It probably would have been better to have a more equal distribution of the types.
2. The present investigator, being an NT, may have had difficulty portraying (in the audio-visual program) the merits of SF in a managerial setting.
3. The sequencing of the types in the audio-visual program may have affected the results, i.e., ST was always first and SF last. If, on the other hand, SF had been first, perhaps the SF group would have been more accurate in self-type prediction.
4. The audio-visual program did not spend much time on the introvert/extravert dimension, a part which Jung felt to be quite important.
5. This dissertation did not address itself to the question of whether the measured types were the actual types, i.e., whether the subjects took the



M-B Indicator as they really are or rather as they would like to be.

#### Further Studies and Projects

Although the results generally supported the hypotheses, the present investigator suggests the following expansions on this dissertation for further refinements and clarifications:

1. Further audio-visual or film presentations on Jungian typology are needed, aimed at different types of audiences, i.e., teachers, salesman, scientists, etc. Though the emphasis of the present program was on the usefulness of typology in decision-making, it is up to further investigators to determine the utility of typology in other situations besides managerial settings.
2. More analysis of type prediction, with larger samples is needed, especially with more SF types. The present study was hampered by the lack of an adequate SF sample and also too few NF types. In order to determine more concrete results, larger samples are needed.
3. Further analysis of type prediction should be pursued, comparing thinking types with feeling types, to ascertain whether the F types are less accurate in predicting their own type. The same kind of

analysis could be carried out with introverts and extraverts as well. The results in this study seemed to indicate that introverts are better equipped than extraverts are to predict self type. However, this needs to be substantiated further.

4. There should be another study, similar to the present one, but with different sequencing of types in the audio-visual presentation. This would help determine whether the sequencing of SF last and NF next to last caused them to be less accurate in self-type prediction.

#### Closure

An audio-visual program on Jungian typology for managers was developed as part of this dissertation. The program was received well by the managers and it seemed suitable for its target population, namely, managers pursuing a master's degree in administration. The results of the analyses indicated that the program was able to teach type recognition skills to the managers, especially those who were the thinking types of ST and NT. This ties in with the conclusion that a general ability in type prediction was demonstrated by the managers.

APPENDIX  
THE SCENARIO

Visual	Audio				
Titles	(M = Male voice; F = Female voice)				
?	M1 What's a type?				
Types of Types	F1 Well, I'll tell you one thing-- he's sure not <u>my</u> type!				
Two Picture Slides	M2 That's precisely the type of job I am looking for!				
?	M1 Is <u>that</u> what type is?				
<table border="1" style="border-collapse: collapse; text-align: center; width: 50px; margin: 0 auto;"> <tr> <td style="padding: 2px 5px;">O</td> <td style="padding: 2px 5px;">A</td> </tr> <tr> <td style="padding: 2px 5px;">B</td> <td style="padding: 2px 5px;">AB</td> </tr> </table>	O	A	B	AB	F2 What about blood--it has types. There's type O, type A, type B and type AB.
O	A				
B	AB				
?	M1 Is that what type is?				
Type Theory of Personality	M3 It could be. But the type we are interested in here is a type theory of personality which was first				

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 Visual
 

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Carl  
Jung

Myers-Briggs

Type  
Theory =  
Typology

Slide of an abstract picture

Slide of an arrow as if moving

Slide of people

$32qx^3 - 9 = 84yz^2 + x$

Slide of a Pattern

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 Audio
 

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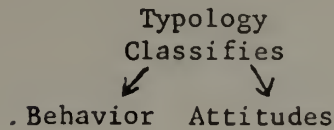
conceptualized by the psychologist Carl Jung. This personality type theory was later operationalized by Myers-Briggs. Briefly, type theory, or typology as it is called, says that much of the apparently random differences in human behavior is really quite orderly and consistent and is caused by certain differences in the way people's minds work. For instance, you probably have heard similar statements as:

- F1 It's not logical! How can I accept it if it isn't logical?
- M1 I'm a man of action!
- F2 But these are people. How can you be so impersonal about it?
- M2 What can I say? I just don't like it--no real reason, except that I just do not like it.
- M3 These and other statements--not to mention the different ways people act--fit into patterns--

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 Visual
 

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Preferences  
in  
Perception  
Judgment

Perception

---

 Audio
 

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patterns which the Jungian typology describes. Typology is a system of classification--for behavior and attitudes. Learning about this system can help you understand your own decision-making process and the way other people decide. Or it may help you to understand why people do certain things which may baffle or even annoy you.

These basic differences in people are a result of the way people "prefer" to use their minds.

Two of these "preferences" concern the way people use perception and the way they use judgment. Later, we will show how different ways of judging affect the decision-making process.

But first, an explanation of how these preferences work.

Perception means the way you become aware of ideas, facts or occurrences.

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 Visual
 

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Perceiving  
by

Sensation Intuition

Slide of eye, nose, ear,  
mouth and hand

Sensation



Blue slide with clouds and the  
word - "Intuition"



Intuition

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 Audio
 

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There are two distinct modes of perceiving--by sensation or through intuition.

When using the sensation mode, we perceive through the five senses.

Data is collected by seeing, hearing, touching, smelling and tasting.

The sensation type sees all the details of a situation and is concerned with the concrete facts available--right now. He is very much present oriented.

Perceiving by intuition, on the other hand is more of an unconscious process. The intuitive gets hunches or ideas "out of the blue." He is not concerned with details, but rather with the overall "gestalt" or picture of the situation. He sees the relationship of certain aspects to each other as well as to the whole. The intuitive is very future-oriented.



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 Visual
 

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Judging  
↓  
Conclusions

Judging  
by  
Thinking Feeling

Thinking  
if  $P \rightarrow Q$

true vs. false  
incorrect vs. correct

---

 Audio
 

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The intuitive is often a "thinker-upper," while the sensation type is the "getter-doner."

In both perceiving and judging, a person "prefers" one mode more than the other. Therefore he uses that mode more often and develops it to a greater degree.

In the same way that there are two modes of perceiving, there are also two opposite ways of making judgments. Judgment is related to the way you come to conclusions on what you perceived. The two ways of making judgments, or we can say decisions, is by thinking and by feeling.

Thinking is an analytical and logical process. When a person makes a judgment by thinking, he is seeking the answer which indicates:

True vs. False

Correct vs. Incorrect

He sees time as a continuous line

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 Visual
 

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Time  
 past present future →

Feeling  
 ↓  
 Values

good vs. bad  
 pleasant vs. unpleasant  
 like vs. dislike

Human angle  
 ↓  
 people

Picture of a chest with "memories"  
 written on it.

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 Audio
 

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going from past to present to future. In order to understand something, he needs to know where it came from, how it developed, and where it is proceeding.

Feeling, on the other hand, is based on a set of values. It can be logical also, but in a different way from the thinking function, because the feeling type's logic uses a set of values from which to make decisions.

The feeling type makes judgments or decisions on the basis of good vs. bad, pleasant vs. unpleasant or like vs. dislike. He likes or agrees with something because it fits in with his values. The feeling type is interested in the human angle of a situation, the part that concerns people. Because of their interest in people--and emotions too--they are great collectors of memories, the things from the past.

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 Visual
 

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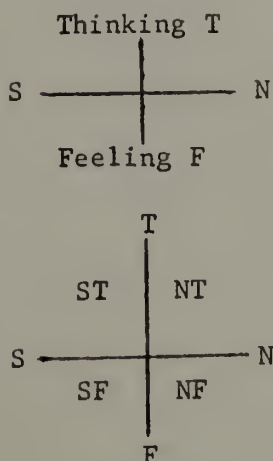
Slide of eye, nose, ear,  
mouth and hand

Blue slide with clouds and the  
word - "Intuition"

Thinking  
if  $P \rightarrow Q$

Feeling  
↓  
Values

Sensation	Intuition
S	N




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 Audio
 

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So, in short, there are four  
perception-judgment functions.

Sensation takes in the data  
through the five senses.

Intuition perceives in an un-  
conscious way--"out of the blue"  
you might say.

Thinking is an analytical and  
logical judging process.

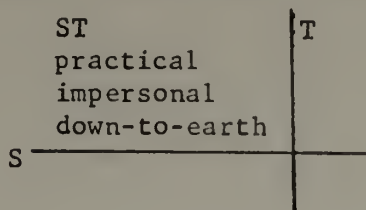
And feeling makes decisions  
based on a set of values.

From these four functions, we  
can construct a diagram. First  
we take the perception dimension  
of sensation vs. intuition. We  
will call sensation "S" and  
intuition "N."

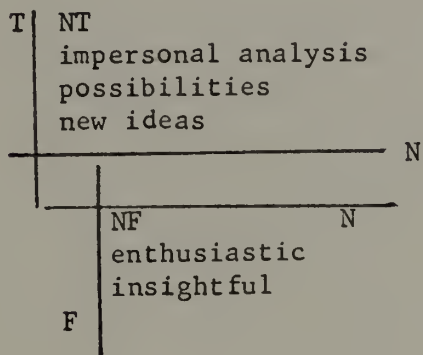
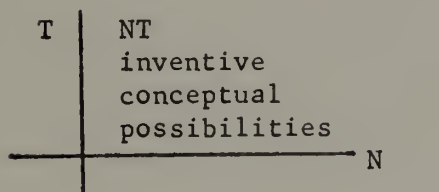
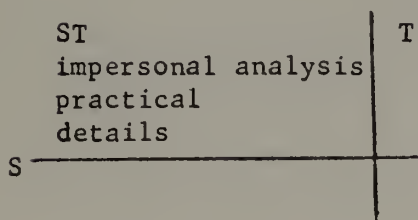
The other dimension is the judg-  
ment dimension of thinking vs.  
feeling. Again, thinking is  
called "T" and feeling "F."

Now we have four possible percep-  
tion-judgments combinations:

## Visual



ST  
interested  
in  
facts  
data



## Audio

Sensation plus Thinking or ST

Intuition plus Thinking or NT

Intuition plus Feeling or NF

Sensation plus Feeling or SF

ST, or sensation-thinking people are characterized by being practical, impersonal and down-to-earth.

They are interested in facts and data and like things to be organized and precise. The qualities the ST brings to the decision-making process are impersonal analysis, practicality and a concern for details.

NT, or intuitive-thinking people are conceptually oriented and are often known to be inventive.

The NT's see theoretical possibilities and frequently come up with new ideas. In decision-making an NT brings impersonal analysis, possibilities and new ideas.

People who are NF or intuitive-feeling are characterized by being enthusiastic and insightful. They,

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 Visual
 

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NF	personal warmth	N
F	possibilities	
	values	

S	SF	
	sociable	
	gregarious	F

S	SF	
	personal warmth	
	practicality	
	concern for	
	individuals	F

	T	
ST		NT
practical		inventive
down-to-earth		concept-oriented
S		N
sociable		enthusiastic
gregarious		insightful
SF		NF
	F	

too, see possibilities--but, possibilities for people or for new truths. An NF brings personal warmth, possibilities and values to the decision-making process. Finally, the SF or sensation-feeling people are generally sociable and gregarious. Like the ST's they are also interested in facts. But the SF is interested in specific facts about people and they bring personal warmth to decision-making, as well as practicality and a concern for individuals.

In brief, the ST is practical and down-to-earth, the NT inventive and concept-oriented. The NF is enthusiastic and insightful and the SF is sociable and gregarious.

None of these types is better than the others. All have their own strength and weaknesses in various situations, like in the decision-making process. But, as

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 Visual
 

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Attitude  
 Extraversion  
 vs.  
 Introversion

Extravert  
 outward→environment

Introvert  
 inward→self

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 Audio
 

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we shall see later, when the different types work together, they can build on each others strengths.

Soon we will go into more detail on how this typology can help you in getting along with other people. But first, let's briefly explain two other aspects of Jung's typology. There are two different attitudes a person can have--either extraversion or introversion.

The extravert turns his perceptions and judgments out onto the environment. He is very much interested in the world around him--people, activities, what's going on.

But the introvert turns his perception and judgments inward--on his world of ideas. He is more interested in being alone and in reflecting.

Briefly, then, the extravert is concerned with the world around



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 Visual
 

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Perceiving  
or  
Judging?

Perception

Perceiving  
or  
Judging?

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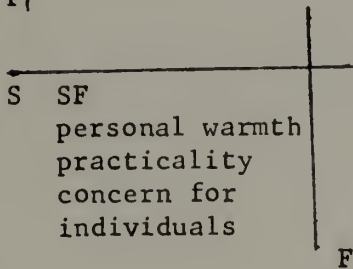
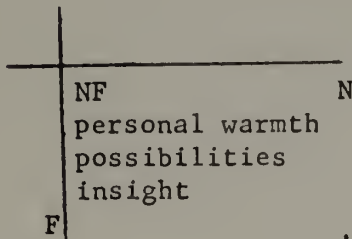
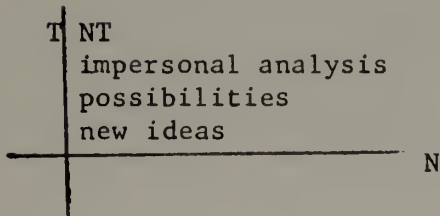
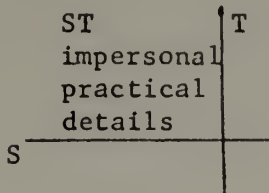
 Audio
 

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him, while the introvert is concerned with the world inside himself. The final dimension determines whether your perception function or your judgment function is the stronger. If your perceiving function is stronger, then you are of the perceptive type. The perceptive is constantly taking in data and information, that is, he is perceiving. As a result, he prefers to let situations make decisions for him and he is flexible and adaptive. But--if your judging function is stronger, then you are of the judging type. The judging type has enough information for decisions. Consequently, he is able to make decisions quickly and with little data. He is a great planner and loves to get all the steps laid out in front of him. So--how can all these ideas help

Visual

Decision Making



ST asks statistics cost effective?

Audio

in decision-making? Well, first let's review what each of the four perception/judgment types brings to decision-making.

Remember, we said the ST type brings impersonal analysis, practicality and a concern for details.

The NT brings impersonal analysis, possibilities and new ideas. Next come the two types that use feeling or values in decision-making.

The NF type brings to decision-making a personal warmth, possibilities and insight.

Finally, the SF brings personal warmth, practicality and a concern for individuals.

Next, let's examine some hypothetical situations.

Several managers are meeting to decide on a project. In order to make a decision, the ST wants to know: what statistics are there and what is the present financial

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 Visual
 

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NT asks  
goals for organization?  
new possibilities?

NF asks  
customer-clients?  
community?

SF asks  
individual tasks?  
morale?

Perception Judgment  
  
 Decision-making

---

 Audio
 

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condition of the organization?

Can we afford this project--is  
it cost-effective?

The NT asks: How does this project fit in with the goals of the organization? What are the possibilities it will bring us in the future? What new areas will it allow us to pursue?

The NF wants to know: How will this project affect our customer-client relationships? Will it put us in better stand with the community? How about our social obligations?

And, the SF asks: How will this project affect individual tasks of employees? Will the new job descriptions fit our workers? How will this project affect morale?

These four types of managers may not be consciously aware of how the way they perceive and judge affects their decision-making

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Visual

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Sketches of meeting

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Audio

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process. Also, they perhaps do not realize that the other managers involved may be seeing the situation from a different viewpoint. Without such an understanding, personality clashes may develop.

Jane (NT) Now, does this project really fit in with the overall, long-range goals of our organization?

Fred (ST) Before we look at long-range anything, we've got to see if the project is practical NOW!

Jane (NT) But if it doesn't fit in with our goals then we don't even need to bother with the practicalities!

Fred (ST) But if it is not practical, then who cares about goals?

George (NF) Wait a minute! You are completely forgetting our customers and clients. They do bring in revenue, in case you happened

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 Visual
 

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Sketches

Appreciate  
Strengths




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 Audio
 

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to forget.

Steve (SF) Hold on--let me say something. Have you even considered the workers? Morale is so low these days--we've got to make sure to bolster it.

Jane (NT) But we still have to consider. . . .

Fred (ST) Just a minute Jane, you're forgetting the main points. . . .  
(fade out)

And so it went. Not much got accomplished at that meeting, except that anger and resentment were produced. But now--let's see what would happen if our four managers have an appreciation for each other's differences. If they know that each type is useful--each one has its strength as well as weaknesses. And that if they team up with other types, they can build on each other's strengths. Here's the new meeting.

Visual

Sketches of meeting

Audio

Fred (ST) Look, we've got to make some decisions about this proposed project. Let's see if we can collaborate and come up with a useful solution. Of course, you all know I'm mainly interested in facts and statistics and in making the project fall in line with the available data. But Jane--you're always good at looking at how a project fits into our long-range goals. And what do you think it can mean in the next few years?

Jane (NT) Yes, it is important to consider the overall goals. You also mentioned something about future possibilities, Fred. I've got some charts here, which I prepared, that show the project's potential in the next four years. But before we go into that, I think we should look at all of the areas we need to consider for this project. Steve's got a



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 Visual
 

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Sketches of meeting

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 Audio
 

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great ability to see the effects of a project on employees. We really need to include that aspect too.

Steve (SF) I'm glad you brought that up Jane. You know, new projects often have quite an effect on morale and, therefore, productivity. Sometimes the individual task change requirements are too much for the workers. Remember the Chicago Project?

George (NF) That one had its problems, you might say.

Steve (SF) There were problems dealing with the community on that one, too--weren't there?

Fred (ST) Sure, and George's expertise in community relations saved the day.

Jane (NT) Maybe we ought to think about that problem before it erupts. What do you say George?

George (NF) Good idea, Jane. Let's consider what might happen this

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 Visual
 

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appreciate ---->  
                   strengths

pool----> talents

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 Audio
 

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time and get ourselves straight with the community. We do have certain social obligations to fill. But wait--don't forget about our clients. . . .

Steve (SF) Oh, right.

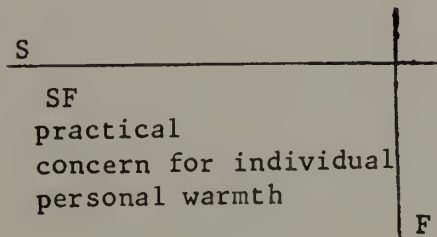
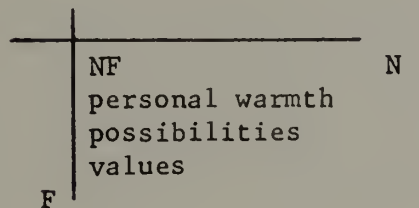
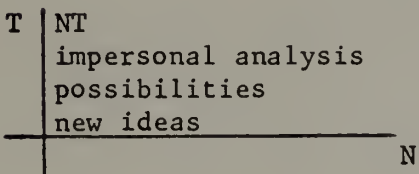
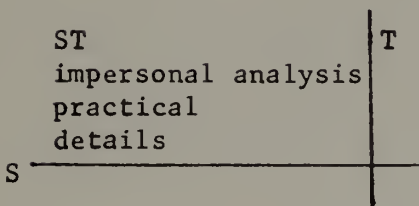
George (NF) We've got to make sure what we do will fit in with their needs. Here--I've got the preliminary results of a survey we conducted.

Jane (NT) Why don't we all get our data charts, graphs or whatever out and compare them.

Steve (SF) Well, here's some information on the . . . . (fade out)  
 It's easy to see that this meeting was more productive than the first. With an appreciation for one another's strengths, the managers were able to pool their talents and come up with a workable, satisfying solution. And, in addition, we can't neglect the fact that the human relations

Visual

Audio



element was more positive in the second meeting than it was in the first. Knowing type theory can help a person to accept, and even appreciate, behavior that previously had seemed baffling and, at times, annoying.

So, in conclusion, let's briefly review the characteristics of the main types to see, once more, what each brings to the decision-making process:

The ST brings impersonal analysis, practicality and a concern for details.

The NT's contribution is in impersonal analysis, seeing possibilities and coming up with new ideas.

The NF brings an appreciation for possibilities, personal warmth and a deep sense of values to decision-making.

Finally, the contribution of the SF is practicality, a concern for

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 Visual
 

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Slide with characteristics  
of Main Types

Credits

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 Audio
 

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individuals and also personal warmth. Each of these types has important contributions to make in decision-making. None of them are better than the others. All have strengths and weaknesses, but if they work together, they can reinforce each other's strengths.

Which Type are you?

Music

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