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AN INVESTIGATION OF LANGUAGE REPRESENTATIONAL SYSTEM UTILIZATION BY PERSONALITY TYPE

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AN INVESTIGATION OF LANGUAGE REPRESENTATIONAL SYSTEM UTILIZATION BY PERSONALITY TYPE

APPROVED BY

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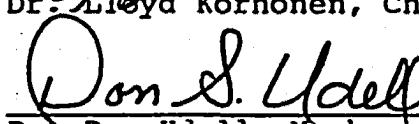

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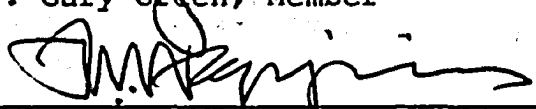

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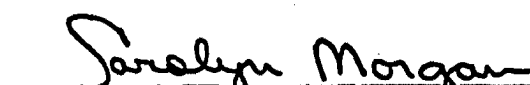

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ABSTRACT

AN INVESTIGATION OF LANGUAGE REPRESENTATIONAL SYSTEM UTILIZATION BY PERSONALITY TYPE

By: Cresencio Torres

Major Professor: Lloyd J. Korhonen, Ph.D.

The purpose of this study was to investigate the relationship between personality type and language representational system utilization in the verbal communication process. Although numerous studies have been conducted exploring personality type, there has been little research examining the relationship between personality type and verbal communication patterns.

This research attempted to determine whether personality types as identified by Jungian psychological typology utilize specific language systems as described in the Neuro-Linguistic Programming model.

Procedure

A sample of 115 adult students from the College of Education at the University of Oklahoma were administered both the Myers-Briggs Type Indicator (MBTI) and the Language System Diagnostic (LSD) test. All subjects were volunteers between the ages of 19 and 39; 96 were female and 19 were male.

Results

Subject preference scores obtained from the MBTI and LSD test were analyzed using Chi Square analysis procedures in the Statistical Analysis System (SAS).

The results of a 3 x 4 Chi Square test (x^2 =4.079, df=6, p .05, probability factor 0.6660) found that there was a significant distribution by percentage of primary language representational systems between introvert and extrovert types. Auditory-Extrovert = 52.18 percent and Auditory-Introvert = 47.83 percent; Kinesthetic-Extrovert = 58.14 percent and Kinesthetic-Introvert = 41.86 percent; Visual-Extrovert = 53.06 percent and Visual-Introvert = 46.94 percent. However, there were no significant differences found in the obtained and expected frequency responses among LSD test variables of Auditory, Kinesthetic and Visual, and MBTI variables of Introvert-Sensing, Introvert-Intuitive, Extrovert-Sensing and Extrovert-Intuitive types.

Another important finding supports previous work conducted concerning representational system distribution patterns. The Visual (42.61 percent), Kinesthetic (37.39 percent), and Auditory (20 percent) were reported by adults in the same order as previous studies but did reflect different percentage distribution.

In addition, the development of the Language System Diagnostic (LSD) test was an important outcome of this re-

search. It is the first instrument developed that operationalizes a key element from the Neuro-Linguistic Programming model, specifically, language representational systems.

Conclusions

This study indicates that there is a significant distribution of introverts and extroverts utilizing the auditory, visual and kinesthetic language represenational systems. However, this study clearly suggests that there is no significant relationship between language system utilization patterns and specific psychological typology. In addition, the conclusions reached from this research suggest that language systems exist and can be measured using the Language System Diagnostic (LSD) test.

Finally, language system patterns are not related to personality type as measured by the MBTI, but they may be related to some unknown variable not yet researched.

AN INVESTIGATION OF LANGUAGE REPRESENTATIONAL SYSTEM UTILIZATION BY PERSONALITY TYPE

CHAPTER I

INTRODUCTION

Neuro-Linguistic Programming (NLP) is a new body of knowledge that describes patterns of communication and mental processes. The earliest and most noted experts in NLP believe that it represents a quantum leap in understanding human behavior and the human communication process (Bandler & Grinder, 1979).

The NLP model encompasses the following components: (1) rapport and communication; (2) information gathering; and, (3) change strategies and interventions. Within the rapport and communication component, there exists the dimension of language representational systems. This component is the focus of this study.

Language representational systems are particular patterns of communication based on sensory experience. The three major output channels of communication are the visual, kinesthetic and auditory language representational systems. The remaining senses of smell and taste are little utilized in the verbal communication process (Torres & Katz, 1983).

Language representational systems are identified by the predicates used in communication patterns. Predicates are verbs, adjectives and adverbs used to describe the portion of an experience that corresponds to the process and relationships in the experience itself (Bandler & Grinder, 1975).

Representational systems can be compared to computer languages. "In the same manner that computers need to use the identical language format or language system to effectively interface with other computers, so humans need to use the same language or representational system to communicate effectively with others" (Andreas & Andreas, 1982, p. 37). By modifying, adding to them, or replacing computer languages which are similar to language representational systems, it becomes possible to develop more flexibility, new capacities and greater abilities in the communication process.

Language representational systems are linked to personality types as described by Jung's psychological typology. This relationship is being investigated to determine whether there is a direct correlation between the two models.

According to Jung, there are two major dimensions of brain activity, the conscious and the unconscious that contribute to personality type. Consciousness describes an

individual's awareness of internal as well as external events, thoughts, feelings, attitudes and perspectives. The unconscious serves as both a repository of repressed personal memory and the transmitor of the collective images of humankind (Jung, 1968). The conscious and the unconscious together provide both direct and indirect means for individual expression (Jacobi, 1962).

Both Neuro-Linguistic Programming and Jungian psychological typologies are concerned with mental process and their expression. It is because of these similarities that the two models are being investigated to determine whether a relationship exists between personality type and language representational system utilization.

The outcome of this study will contribute to the knowledge base of Neuro-Linguistic Programming and expand the existing research related to Jungian personality types.

Problem Statement

DO PERSONALITY TYPES AS IDENTIFIED BY JUNGIAN PSYCHOLOGICAL TYPOLOGY UTILIZE SPECIFIC LANGUAGE REPRESENTATIONAL SYSTEMS AS DESCRIBED BY THE NEURO-LINGUISTIC PROGRAMMING MODEL?

Purpose of the Study

The purpose of this study was to investigate the relationship between personality type and language representational system utilization in the verbal communication

process. Although numerous studies have been conducted exploring personality types, there has been little research examining the relationship between personality type and verbal communication patterns.

Personality types were measured by the Myers-Briggs Type Indicator, (MBTI) a self-report inventory based on Jung's personality typology. Language representational systems were identified by the Language System Diagnostic (LSD), a self-report instrument based on the Neuro-Linguistic Programming model.

Specific Hypotheses

The following are the hypotheses tested in this study:

H_1 There is a significant distribution of primary language representational systems between introverts and extraverts.

H_2 There are significantly more introverted sensing types utilizing both the auditory and kinesthetic language representational systems in the communication process.

H_3 There are significantly more extraverted intuitive types utilizing both the auditory and kinesthetic language representational systems in the communication process.

H_4 There are significantly more introverted intuitive types utilizing the visual language representational system in the communication process.

H_5 There are significantly more extraverted sensing

types utilizing the visual language representational system in the communication process.

Operational Definitions of Terms

The following operational definitions are used in this research study:

Language Representational Systems: Language communication patterns based on the five recognized senses of hearing, seeing, feeling, tasting and smelling (Grinder & Bandler, 1976).

Visual Language Representational Systems: Language patterns characterized by the use of visual verbs, adjectives and adverbs, i.e., look, see, picture and perspective (Grinder & Bandler, 1976).

Kinesthetic Language Representational System: Language patterns characterized by the use of kinesthetic verbs, adjectives and adverbs, i.e., feel, hold, grasp and handle (Grinder & Bandler, 1976).

Auditory Language Representational System: Language patterns characterized by the use of auditory verbs, adjectives and adverbs, i.e., hear, say, listen and talk (Grinder & Bandler, 1976).

Predicates: Words used to describe the portion of a person's experience that corresponds to the processes and relationships within the experience. They are words made up of verbs, adjectives and adverbs divided into categories

corresponding to language representational systems (Grinder & Bandler, 1976).

Primary Language Representational System: The most highly developed communication channel utilized during times of stress or when problem solving (Grinder & Bandler, 1976).

Secondary Language Representational System: A communication channel that can be used in normal everyday conversation in combination with the primary language representational system (Grinder & Bandler, 1976).

Tertiary Language Representational System: A communication channel used in combination with the Primary and Secondary Language Representational Systems but is usually beyond conscious awareness and infrequently utilized (Grinder & Bandler, 1976).

Intuitive Type: Subjects scoring higher on the intuitive scale than on sensing scale on the Myers-Briggs Type Indicator.

Sensing Type: Subjects scoring higher on the sensing scale than on the intuitive scale on the Myers-Briggs Type Indicator.

Thinking Type: Subjects scoring higher on the thinking scale than on the feeling scale on the Myers-Briggs Type Indicator.

Feeling Type: Subjects scoring higher on the feeling scale than on the thinking scale on the Myers-Briggs Type

Indicator.

Perceptive Type: Subjects scoring higher on the perceptive scale than on the judging scale on the Myers-Briggs Type Indicator.

Judging Type: Subjects scoring higher on the judging scale than on the perceptive scale on the Myers-Briggs Type Indicator.

Introvert: Subjects scoring higher on the introvert scale than on the extravert scale on the Myers-Briggs Type Indicator.

Extravert: Subjects scoring higher on the extravert scale than on the introvert scale on the Myers-Briggs Type Indicator.

Limitations of the Study

The following limitations impinge on this study:

(1) The sample used for the study consisted of adult students who were predominately from one program area--Adult and Continuing Education. Generalization to other disciplines warrants further investigation.

(2) The instruments utilized in the study were paper and pencil self-report measures. The bias of subject self-evaluation must be examined more closely to determine the accuracy of the report. Such measures only address the subject's perception at a point in time rather than over time.

(3) Although the study investigates the relationship between language systems and personality type, it does not explore the application of the resulting data to adult training or other adult education programs.

Significance of the Study

This study was designed to contribute to the limited body of empirical data related to the Neuro-Linguistic Programming (NLP) model. Since NLP is a new model for analysis of communication and behavior, only a limited amount of research has been conducted in this area. In order to design and implement this research, a diagnostic for identifying a key component of the NLP model, the language representational systems, had to be developed by the researcher. The Language System Diagnostic (LSD) test was necessary in order to further our understanding of Neuro-Linguistic Programming and the communication process. This research, also, broadens the existing knowledge base associated with personality types as measured by the Myers-Briggs Type Indicator, a self-report inventory based on Jungian personality typology.

This study is significant in that it makes an important link between personality type and language system utilization. In an exhaustive search of the literature, no other study could be found that attempts to determine whether such a relationship exists.

CHAPTER II

THEORETICAL FRAMEWORK AND SURVEY OF RELATED LITERATURE

This chapter contains the theoretical framework for Neuro-Linguistic Programming and Jungian Psychology and the survey of related literature for Neuro-Linguistic Programming and the Myers-Briggs Type Indicator.

Neuro-Linguistic Programming

Neuro-Linguistic Programming (NLP) is a new model of human behavior and communication (Bandler & Grinder, 1975; Grinder & Bandler, 1976). It is a discipline whose domain is the structure of subjective experience (Dilts, Grinder, Bandler, Bandler & De Lozier, 1980).

Initially developed in the 1970's by Richard Bandler and John Grinder, NLP has been described as the fourth force in understanding human behavior and experience. It is also claimed that NLP represents a quantum leap in understanding the human communication process (Bandler & Grinder, 1979).

NLP was developed through the systematic study of Virginia Satir, Milton H. Erickson, Fritz Perls and other therapeutic masters (Harmon & O'Neill, 1981). Additionally, NLP draws from the knowledge bases of psychodynamics,

behavioristic, and humanistic theory. Overall, NLP is concerned with the identification of patterns in communication and behavior, and more important, how they interact in the process of change. NLP combines both conscious and unconscious experience and is specifically geared at helping people understand the structure of their own experience.

> "Neuro" (derived from the Greek neuron for nerve) stands for the fundamental tenet that all behavior is the result of neurological processes. "Linguistic" (derived from the Latin lingua for language) indicates that neural processes are represented, ordered and sequenced into models and strategies through language and communication systems. "Programming" refers to the process of organizing the components of a system (sensory representation in this case) to achieve specific outcomes (Dilts, et al., 1980, p. 2).

The model and techniques of NLP have been utilized by a wide range of individuals beyond the therapeutic context including educators, business executives, health practitioners, medical professionals and writers. (Andreas & Andreas, 1982; Conway & Siegelman, 1983; Moran, 1979).

The NLP model embodies several key elements. More specifically, the components are as follows: (1) rapport and communication; (2) gathering information; and, (3) change strategies and interventions. Within the component of rapport and communication exist the dimensions of language representational systems, eye accessing movements, verbal and non-verbal pacing and leading, communication skills of translation, and representational system

overlapping. Within the component of gathering information are the dimensions of the meta-model, behavioral accessing, sensory and interpretation based data gathering, and identification of specific outcomes. Finally, within the third component of change strategies and interventions, there are the dimensions of eliciting resources, imbedded commands, anchoring, reframing, changing history, visual-kinesthetic dissociation, strategy installation, sub-modality change, and the use of metaphor (Bandler & Grinder, 1979, 1982; Cameron-Bandler, 1978; Dilts, et al., 1980; Gordon, 1978; Grinder & Bandler, 1976, 1981). Each of these components has a specific purpose and serves to operationalize the NLP model.

It becomes obvious that NLP addresses a wide range of the human experience. In totality, the NLP model represents a powerful technology for creating change.

It is beyond the scope of this investigation to examine each part within the NLP model. Rather, this study will focus on one key NLP component within the rapport and communication component, more specifically, language representational systems.

NLP and Language Representational Systems

The basic premise of NLP is that people operate and make sense of their world through information received from the world around them (Bandler & Grinder, 1975). This

information if filtered through their sensory systems, provides them with a steady stream of information which they use to organize their experiences. The data they receive is first processed at the unconscious level, experienced internally, and then manifested in external behavior. The existing language patterns are one method people use to communicate those internal responses. Therefore, it is through an understanding of language patterns based on information people receive through their senses that enables them to comprehend both their internal and external world (Torres & Katz, 1983). NLP, then, is a model for understanding the basic process used by all people to encode, transfer, guide, and modify human behavior (Dilts & Meyers-Anderson, 1980).

In order to better understand how the specific processes function, the sensory systems used to experience the external world will be examined.

Representational Systems

People have available to them a number of different ways of representing their experiences. "We have five recognized senses for making contact with the world--we see, we hear, we feel, we taste, and we smell. In addition to these sensory systems, we have a language system which we use to represent our experiences" (Grinder & Bandler, 1976, p. 6). The NLP model suggests that we store our ex-

periences in these same systems (Harmon & O'Neill, 1981). NLP also believes that all of the distinctions we make concerning our environment, both internal and external, are represented in terms of these sensory representational systems (Dilts, et al., 1980).

Of the five senses that people have, only three are widely used by individuals as major input channels--these are the visual, auditory and the kinesthetic senses. The remaining two, smell and taste, are little utilized ways of gaining information about our external world (Bandler & Grinder, 1975). For those people who rely on their visual systems, it may be as though they run movies in their heads when remembering or storing information. If people are primarily auditory, i.e., taking information in through sounds, they may actually hear original tones or dialogue in their heads when remembering. For many auditory people, accessing information may be like hearing the replaying of a tape recorder. For those people who are primarily kinesthetic, i.e., responding to whole body internal feelings or tactile sense, they may associate body sensations as a way to recall an experience. Once it is understood how people experience their worlds, we can then turn to exploring how they communicate about them (Torres & Katz, 1983).

Predicates

Predicates are words used to describe the portion of experience which corresponds to the processes and relation-

ships in that experience (Bandler & Grinder, 1975). They are words made up of verbs, adjectives and adverbs. Predicates are divided into three categories corresponding to the three major representational systems. People either see (visual) pictures or have images about their experiences; or they hear (auditory) sounds and talk about their experiences; or they experience sensations (kinesthetic) and have feelings about their experiences (Grinder & Bandler, 1976). When individuals describe their world, for example, using a visual representational system, they will use such words as "look,", "see," "picture," or "perspective." Kinesthetic people will use words like "feel," "hold," "handle," or "grasp." Auditory people will use words such as "hear," "say," "listen," "sound," or "talk."

Individuals have a primary representational system (more highly developed) which they rely upon during times of stress or when they are problem solving. They have a secondary system which may be used in normal everyday conversation in combination with their primary representational system. A tertiary system exists and may be used but it is usually beyond conscious awareness. For example, a person whose primary representational system is kinesthetic and secondary system is visual may be aware of what they "see" and "feel" at any given moment, but not be in "tune" with the sounds and noises around them.

In order to discover which representational system is primary and which representational system a person favors most, we simply need to listen to the predicates used in a person's language pattern (Torres & Katz, 1983).

In summary, sensory systems in the NLP model serve a more functional significance than is attributed to them in more classical models of communication where the senses are regarded as passive imput mechanisms. Thus, it is understood that all the distinctions that people are able to make concerning their environment and behavior can be represented in terms of representational systems. These perceptual classes constitute the structural parameters of human knowledge according to the NLP model.

Literature Review

Neuro-Linguistic Programming

A review of related literature for this study revealed that minimal research has been conducted to verify the theory and model of Neuro-Linguistic Programming (NLP). However, there have been several systematic studies of NLP that have been conducted more recently.

Falzett (1981) examined the statement that trust in a relationship would be enhanced if the counselor matches the primary representational system (PRS) of the client. An interview was structured with 24 female volunteers in which the interviewers either matched or mismatched their

predicates to the PRS of the subjects. Levels of perceived trustworthiness were assessed by the Counselor Rating Form (CRF)-Trustworthiness scale. The results showed that when interviewers matched predicates to subjects PRS as determined through eye-movement observations, levels of perceived trustworthiness were higher.

In another Primary Representational matching experiment, Dowd and Pety (1982) tested the effects of counselor predicate matching according to the NLP model. A total of 84 college students listened to one of four audio tapes representing a 15 minute segment of a simulated counseling interview. Prior to listening to the tape, subjects rated their willingness to see a counselor about salient problems. After listening to the tape, the subjects rated the counselor on the Counselor Rating Form and the Counselor Evaluation Inventory and rated their willingness to see that particular counselor. Results showed no predicate matching effect on post interview willingness to see the counselor.

Owens (1977) examined the degree to which the three methods of assessing Primary Representational Systems reflected the same PRS in a sample of 79 male and female college students. Although there was a significant agreement between the verbal report and eye movement methods, the other comparisons, between verbal report and self-report

and between eye movements and self-report, were not significant.

Gumm, Walker and Day (1982) examined the preferred modality by which 50 right-handed female college students encoded experience was assessed by recordings of conjugate eye movements, content analysis of the subject's verbal report, and the subject's self-report. Contrary to the prediction of the theory of Neuro-Linguistic Programming (NLP), analysis failed to reveal any agreement of the three assessment methods. In addition, each assessment method was shown to be biased towards revealing a particular representational modality. The application of certain principles of NLP in counseling settings was therefore questioned.

Allen (1982) investigated the effectiveness of Neuro-Linguistic Programming procedures in treating snake phobics. Thirty-six undergraduate students, identified as snake phobics by their response on the Fear Survey Schedule II and Behavior Avoidance Test, took part in the experiment. Results of the data failed to support statistically significant differences existing between subjects who received no treatment and those who received NLP treatment. The conclusion was that NLP treatment had little effect on the subject's fear of snakes. However, while NLP treatment subjects neither completed more snake approach tasks nor reported less fear while performing those tasks, they did

report more frequently that they thought they were over their fear of snakes.

Yapko (1981) investigated the effect of matching Primary Representational System predicates on hypnotic relaxation. This study tested the assumption that by using similar language structure while interacting the outcome would be increased rapport and trust. Thirty subjects were exposed to three different hypnotic inductions varying in sensing language structure according to representational systems. Subjects were evaluated by EMG for relaxation obtained from compatible and noncompatible inductions. Subjects objectively obtained greatest relaxation when experiencing hypnotic inductions containing predicates corresponding to their PRS. Matching PRS predicates increased the relaxation level of subjects exposed to matching and non-matching hypnotic inductions. The results suggested that matching PRS language structures appears to enhance rapport and influence with clients.

Dorn (1983a) investigated the effects of counselor-client predicate usage and client attractiveness to counselor. The participants of the study were 180 undergraduate students at a major univeristy. All were between the ages of 18-25. Personal interviews were conducted to determine predicate preference. The predicate content (verbs, adjectives, adverbs) of each interview was assessed by three

Ph.D. level counseling psychologists. The raters were instructed to listen to each interview and to assign the participant an overall rating according to the frequency of either visual, auditory, or kinesthetic predicates. A series of six tapes were constructed to serve as counselor stimulus. The recordings contained 20 predicates each (either visual, auditory, or kinesthetic) and were read by one of three males or one of three females. Six groups of 20 participants were formed and randomly exposed to one of the six tapes. The subjects rated each tape and counselor using the Interpersonal Judgment Scale immediately after the tape was heard. Results did not support the hypothesis that clients perceive counselors with similar predicate preferences as more attractive. The assumption that predicate similarity in the context of natural language was too subtle for participants to detect was also not supported by the results of this experience.

Thomason, Arbuckle, and Cady (1980) tested the eye-movement hypothesis of Neuro-Linguistic Programming. To test the hypothesis that most people make characteristic eye movements based on whether they are processing visual, auditory, or kinesthetic information, 40 subjects were recruited from a psychology class at a state university. The majority were female, caucasian, single, and between the ages of 18 and 25 years old; all were right-handed by self report. The experiment was conducted in a small room with

a one-way mirror. Each subject, facing the mirror, was asked a series of 30 questions. There were 10 questions for each of the three sensory modalities, arranged in random order. Each question required the subject to mentally see an image, hear a sound, or feel a tactile sensation.

Three observers (graduate students naive to the model) watched the subject's eye movements in response to each question and noted the direction on a scoring sheet coded with eight possibilities.

The results of the study found that although eye responses were not random, i.e., most were "visual." The sensory process obligated by the question did not influence eye movement as hypothesized. Although some other aspects of Neuro-Linguistic Programming may be valid, the present study did not support the eye-movement hypothesis of the model.

Birholtz (1981) tested some basic assumptions of the Neuro-Linguistic Programming model. Her study examined the use of verbal predicates to determine whether persons tend to exhibit preferred modes of expression that correspond to the concepts of preferred modes of representation asserted by Bandler and Grinder. The study also tested the implied assumption that these preferred modes of expression are stable; over time; over reports of positive and negative experiences; and over reports of past, present and future

experiences. Also tested was the assumption that of the five identified modes, the three most often identified would be visual, auditory and kinesthetic.

Results indicated that the subjects had a deliberate or non-deliberate preference for words that reflected one sensory category more than another. However, all subjects were identified as having a preferred mode of kinesthetic. The subjects showed stability over time reference; past, present, and future experience. The three most often identified modes were visual, auditory and kinesthetic. These three modes accounted for nearly 100 percent of the predicate words used.

In summary, it should be obvious that the majority of studies conducted concerning NLP have focused only on selected components of the overall NLP model. According to Dilts and Green (1982), this is the major drawback of those who have attempted to evaluate the effectiveness of NLP. Therefore, a broader view of the NLP model should be developed by those researchers interested in investigating and researching the model further.

Theoretical Framework

Jungian Psychology

Carl Jung is known to be one of the foremost psychological thinkers of the 20th century. Although Jung's theory of personality is usually identified as a psychoanalytic theory because of the emphasis it places on unconscious processes, it differs in several respects from Freud's theory of personality (Jacobi, 1962).

> The total personality or psyche, as it was called by Jung, consists of a number of differentiated but interactive systems. The principle ones are the ego, the personal unconscious and its complexes, the collective unconscious and its archetypes, the persona, the anima and animus, and the shadow. In addition to these interdependent systems there are the attitudes of introversion and extraversion, and the functions of thinking, feeling, sensing, and intuiting. Finally, there is the self which is the center of the whole personality (Hall & Lindsey, 1970, p. 82).

In addition to Jung's ideas and challenge to Freud's theory of the sexual nature of the Libido, his observations on how individuals orient themselves to the world, i.e., in differentiated and consistent ways, led him to describe human behavior as resulting from personality types.

Jung's publication of Psychological Types in 1921 represented a refinement of his earlier writings concerning the topic. He later described the motivation for writing his book in the following manner:

> Psychological types, first published in 1921. . . sprang originally from my need to define the ways in which my outlook differed from

> Freud's and Adlers. In attempting to answer this, I came upon the problem of types; for it is one's psychological type which from the onset determines and limits a person's judgment. . . Therefore, my book was an effort to deal with the relationship of the individual to the world, to people and things. It discussed the various aspects of consciousness and the various attitudes the conscious mind might take toward the world . . . Information on types yields the insight that every judgment made by an individual is conditioned by his personality type and that every point of view is necessarily relative (Jung, 1923, p. 621).

In those few sentences, Jung presents the foundation of his psychological typology, a part of his own personality theory that helped distinguish his work.

Jungian Typology

Jung believed that there are two major dimensions of personality, the conscious and the unconscious that contribute to type.

> By consciousness, I understand the relatedness of psychic contents to ego in so far as they are sensed by the ego. In so far as relations are not sensed by such by the ego, they are unconscious. . . Consciousness is the function or activity which maintains the relationship of psychic contents with the ego. Consciousness is not identical with psyche, since, in my view, psyche represents the totality of all the psychic contents, and these are not necessarily all bound up directly with the ego, i.e., related to it in such a way that they take on the quality of consciousness (Jung, 1923, p. 535).

Consciousness, thus, describes an individual's awareness of internal and external events, thoughts, feelings, attitudes and perspectives. Furthermore, the conscious mind provides the individual with the ability to react and

adapt to the environment. Whereas the unconscious, consisting of the personal and collective unconscious, remains inaccessable to the individual. It serves as both a repository of repressed personal memory and the transmitor of the collective images of mankind (Jung, 1969). The conscious and unconscious together provide both direct and indirect means for individual expression (Jacobi, 1962).

Furthermore, Jung distinguishes two major orientations of personality, the attitude of extraversion and the attitude of introversion. The extravert has an orientation toward the external, objective world; the introvert has an orientation toward the inner, subjective world (Hall & Lindsey, 1970).

Behaviorally, extraverts are described as outgoing, accomodating, and action oriented. They are viewed as adapting easily to different situations, are willing to take risks and exhibit confidence while doing so (Jung, 1971).

Introverts focus on the subjective nature of their perceptions of objective reality. Unlike the extravert, subjective perceptions are the determinants of the introvert's behavior (Jung, 1971).

These two attitudes are present in the personality but ordinarily one is dominant and conscious while the other is subordinate and unconscious (Cohn, 1975).

In addition to extraversion and introversion, Jung (1921) described four fundamental psychological functions: thinking, feeling, sensing and intuiting.

> Thinking is the ideational and intellectual. By thinking, man tries to understand the nature of the world and himself. Feeling is the evaluation function; it is the value of things, whether positive or negative, with reference to subject. The feeling function gives man his subjective experience of pleasure and pain, of anger, fear, sorrow, joy, and love. Sensing is the perceptual or reality function. It yields concrete facts or representations of the world. Intuition is perception by way of unconscious processes and subliminal contents. The intuitive man goes beyond facts, feelings and ideas in his search for the essence of reality (Hall & Lindsey, 1970, p. 89).

These four functions represent pairs of polar extremes on two continua. Intuition and sensing are considered opposite ways of perceiving, while thinking and feeling are opposite ways of judging. Whereas the basic attitudes reflect a way of orienting consciousness to the world, the functions are regarded as a system for relating various facts and data collected from the environment (Jung, 1968).

Thinking and feeling are called rational functions because they make use of reason, judgment, abstraction, and generalization. Sensation and intuition are considered irrational functions because they are based on the perception of the concrete, particular and accidental (Jung, 1923).

In every personality, there is a superior function which is the most differentiated and under conscious control, and an inferior function which is least

differentiated, repressed and unconscious. One of the three functions acts in an auxiliary capacity to the superior function. If the superior function fails to operate the auxiliary function takes its place. The inferior function expresses itself in dreams and fantasies. The inferior function also has an auxiliary function associated with it (Jung, 1923).

Jung viewed the personality type of an individual as resulting from the interaction of their own orientation to the world (Extraversion/Introversion) and their superior, inferior, and auxiliary functions. While an individual may utilize any of the functions, and either orientation, it is the habitual nature of their use that determines the "type" for the individual (Jung, 1969).

In conclusion, Jung's personality theory has at its core a complex framework with numerous components. It is the interaction between those separate parts that differentiates Jung's perspectives from other personality theorists.

Literature Review

Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator (MBTI) was developed by Isabel Briggs-Myers to assess personality types as described by C. G. Jung (1923). The MBTI is a forced choice inventory which provides scores for Jung's personality

dimensions of Extraversion-Introversion (EI), Sensing-Intuition (SN), Thinking-Feeling (TF), and two additional categories not part of Jung's original typology, Judgment-Perception (JP) (Myers, 1962).

Myers describes the intent of the Indicator in the following way:

> The main purpose of the Indicator is to ascertain a person's basic preferences. EI, SN, TF, and JP scores are therefore indices designed to point one way or the other, rather than scales designed to measure traits. What each is intended to reflect is a habitual choice between opposites, analogous to right-or-left handedness. Thus EI means E or I rather than E to I (1962, p. 2).

The literature review for this study will focus primarily on research conducted that combines the Myers-Briggs Type Indicator with studies utilizing various assessment instruments. The purpose of this review is to investigate the relationships between psychological types and characteristics which differ from those measured by the MBTI.

McGinn (1976) investigated the usefulness of the MBTI as an assessment and counseling tool with talented adolescents. The evaluation of the MBTI included three studies. In the first study, the results of factor analyses and multiple regression analyses found that the relationships of the MBTI to the California Psychological Inventory and the Self-Directed Search was consistent with theoretical meanings attributed to the MBTI. Additionally, results showed that the MBTI can be used to clarify and interpret

results of the other two tests. Using a description checklist developed for this research, the second study confirmed that the results of the MBTI were understandable to the students and accepted by them. The third study compared the merits of two strategies for predicting non-academic accomplishment--a regression analysis using MBTI trait scores and an actuarial analysis using MBTI Type scores. Neither approach achieved a satisfactory level of prediction upon cross validation. It was suggested that the MBTI does not assess the important determinants of adolescent accomplishment.

Bruhn, Bunce and Greaser (1978) investigated correlations of the Myers-Briggs Type Indicator with other personality and achievement variables. The personality instruments used in this study were Rotter's Internal-External (I-E) Locus of Control Scale, Budner's Intolerance of Ambiguity Scale and the Myers-Briggs Type Indicator. In addition, the Otis-Lennon Mental Ability Test and the Nelson-Denny Reading Test were used.

The subjects were 98 physician assistants and 67 pediatric nurse practitioners enrolled at a major university. The purpose of the study was to determine; (1) the correlations among the scales of the MBTI; the correlations among the MBTI scales and other personality and achievement

variables; and (3) predictors of academic performance from personality characteristics and aptitude variables.

Results for correlation among Myers-Briggs scales for physician assistants and nurse practitioners found a small but significant negative correlation between the Extraversion-Introversion scale and the Sensing-Intuition scale for nurse practitioners. A significant positive correlation was found between Thinking-Feeling and Judgment-Perception for nurse practitioners. Positive low correlations between Sensing-Intuition, Thinking-Feeling, and Judgment-Perception indicated limited interdependence among the scales.

Results for correlations among Myers-Briggs scales and other personality variables found a significant correlation between Judgment-Perception and Internal-External control among nurse practitioners. In regards to correlations between the Myers-Briggs scales and the Intolerance of Ambiguity scales, the results were negative suggesting no interdependence between the two scales.

Results for correlation between Myers-Briggs scales and aptitude and achievement variables found a significant positive correlation between Extraversion-Introversion and IQ for females; extraverts tended to have lower IQ scores than introverts. There were no significant correlations between Myers-Briggs scales, National Board scores and grade point average upon graduation.

Significant positive correlations were found between extraversion, judgment and reading comprehension for males and between sensing, reading, rate and vocabulary for females. The Nelson-Denny Reading Rate and IQ predicted performance on the certifying examination taken by the subjects.

Edmunds (1982) explored Jungian personality type and imagery ability within a holistic health context. The study investigated the relationship of structured and spontaneous imagery ability to Jungian personality types as measured by the MBTI. A total of 60 musicians between the ages of 18 to 66 participated in the study. A structured imagery procedure, the Survey of Mental Imagery (SMI) measured the ability to produce images in seven sensory dimensions. To measure spontaneous imagery, Bonny's "guided imagery and music" technique was used, and participants reported their train of thought and images after listening to a piece of classical music. The Multiple Affect Adjective Check List (MAACL) was administered before and after the imagery experiences to assess mood changes.

Using stepwise multiple regression, significant relationships were found between personality and imagery ability in four sensory dimensions of the SMI. MBTI preferences for intuition over sensing were associated with significantly higher scores for visual, auditory, kinesthetic,

and somesthetic control. Preferences for thinking over feeling were associated with significantly higher scores for auditory, kinesthetic, and somesthetic control. The interaction of sensing-intuition and thinking-feeling preferences also explained a significant proportion of variance for auditory, kinesthetic and somesthetic control in that participants with the sensing-feeling combination had lower scores than the other three groups. No relationships were found between personality and the SMI vividness scores or ratings of spontaneous imagery.

Introversion-Extraversion mediated responses on the MAACL scales for depression, hostility, and overall positive effect at the second administration. Extraverts had lower depression and hostility scores and higher scores for positive effect, while introverts showed significantly higher depression scores and lower positive effect scores.

The results concluded that personality was an important factor to consider in interventions maintaining health and well-being.

Steele and Kelly (1976) investigated the introversion-extraversion correlation of the Myers-Briggs Type Indicator (MBTI) with the Eysench Personality Questionnaire (EPQ). Similar to the MBTI, the EPQ is a true-false self-report inventory with four scales (extraversion; neuroticism; psychoticism; and lie) derived from factor-analytic studies.

It was hypothesized by Eysenck that given the methods and content similarity of the EPQ and the MBTI, the extraversion-introversion scales of the inventories will be significantly positively correlated.

The subjects of the research were 93 undergraduate students between the ages of 18-22 years old. The results showed a significant correlation between the MBTI extraversion-introversion and the EPQ extraversion-introversion scales.

Despite the differences in the theoretical orientations of Jung and Eysenck, the higher correlation of the MBTI and the EPQ Extraversion-Introversion scales demonstrated an area of equivalency at the self-report questionnaire level dealing with extraversion and introversion.

Stone (1978) assessed the roles of the Strong-Campbell Interest Inventory and the Myers-Briggs Type Indicator in their relationships to grade point average, length of persistence, and study area selected. Participants included 450 incoming freshmen at a major university.

Longitudinal data included academic ability (IQ) as derived from college entrance test scores. Progress level was defined as a combination of grades and rate of program completion. Progress level was cross tabulated with IQ, study area, and a scale composed of interest and personality congruencies. MBTI and SCII results were crosstabulated with the student's area of study.

The findings of the study were as follows: Congruencies of interests and personality, as scaled in the study, lacked reliable statistical significance as progress level predictors. College entrance tests and high school rank had predictive value for grades earned. MBTI personality factors related to GPA and program completion rate. Some disciplines had higher progress levels than others. MBTI and SCII tests showed significance as predictors of study areas. Omitted informational data characterized dropouts.

The conclusions of the study were: Matching student personality types to suitable programs increases probabilities for higher achievement and persistence. Student body personality-type profiles are selectively affected by curriculum offerings. Recruitment efficiency can be increased by intentionally seeking student matches of person and program to increase probabilities of retention and higher achievement. It was determined that more research was needed on combinations of congruencies to increase the effectiveness of currently used predictive variables.

Richards (1982) did an investigation of the therapeutic preference of Jungian personality types using rational-emotive, client-centered and gestalt therapy. Data were secured from 114 subjects, ages 17 to 60 years old. The subjects were classified by personality characteristics as determined by the Myers-Briggs Type Indicator. Subjects were then shown filmed demonstrations of rational-emotive,

client-centered, and Gestalt therapies and subsequently asked to rank order their preferences on the preferences sheet provided. Hypotheses for the study were that introverts and extraverts would show differential therapeutic preferences; thinking types would differ from other types in their preference for rational-emotive therapy; feeling types would differ from other types in their preference for client-centered therapy; sensing types would differ from other types in their preference for Gestalt therapy.

The results of the study indicated analysis of the four research hypotheses found no significant differences between the groups with regard to personality type and therapeutic preference. It was concluded that either more research was needed or that the results accurately reflected existing population trends.

Kuhn (1981) investigated the relationship of personality type and job satisfaction. The Myers-Briggs Type Indicator (MBTI) was used to identify subjects' personality types according to the EI, SN, TF, and JP scales. A modified, expanded version of the Minnesota Satisfaction Questionnaire (MSQ), an instrument for measuring job satisfaction, and the MBTI were administered to 493 volunteer teachers.

The results indicated general satisfaction with teaching for all types, INTP and ISFP types had

substantially lower means, however, than ESFP, ESTJ, ESFJ, and ENFJ types. On both intrinsic and extrinsic dimensions, ES, EJ types had highest satisfaction means. Lowest intrinsic satisfaction means were among NT, IP, and IN types. There tended to be higher mean satisfaction indicated by teachers having extraverted, sensing, and judging characteristics.

In general, all items on the modified Minnesota Satisfaction Questionnaire were considered important to the subjects, but items that failed to meet the 60 percent criterion for satisfaction were salary, advancement, school policies, praise, and the chance to be "somebody" in the community. All types indicated that school policies and salary were higher in importance than in satisfaction. Most discrepancy between satisfaction and importance was noted among ISFP, ENTJ, and ENFP types. Least discrepancy was reported by ESFP types. No differences were found when satisfaction means were compared to variables of sex, race, education, teaching position, or years of experience.

The conclusions of the study showed extraverts tended to be more satisfied with their careers than introverts; satisfiers centered around intrinsic aspects of work, predominantly, helping students; dissatisfiers involved extrinsic motivators such as salary, work conditions, and administrative policies; and findings were consistent with previous research and theories of personality type and job

satisfaction. Additionally, it was found that recurrent modes could be useful in predicting satisfaction variables for teachers of a designated personality type.

Ash (1982) studied the relationship between field dependent/field independent cognitive style, sex role identity, and personality type among 168 young adult female community college office occupations and business administration majors.

The purpose of the study was to determine whether secretarial-office occupations majors differed from business administration majors in: (a) field-dependent/field-independent cognitive style; (b) sex-role identification; and (c) Jungian personality type.

The following instruments were used in the study and administered to both groups: (1) a Personal Data Sheet; (2) the Group Embedded Figures Test (GEFT); (3) the Bem Sex-Role Inventory (BSRI); and (4) the Myers-Briggs Type Indicator (MBTI).

The conclusions of the study found: (1) The community college students in the study have field-dependent cognitive styles. (2) For the population sampled, it was inappropriate to classify the domain of business as "broad gauge." (3) Sex-role identification has no apparent influence on vocational choice. (4) The more field-independent subjects of the study were slightly inclined

toward masculine sex-role identification. (5) Both groups were extraverted, sensing, and feeling in personality type. Business administration students were found to be slightly more judging. (6) Accounting majors distinguished themselves as introverts.

In summary, it is apparent that numerous studies have utilized the MBTI in conjunction with other testing instruments. Although the MBTI was not positively correlated with all the personality and achievement variables in this review, it lends itself to studying questions concerning the relationships between significant dimensions of the individual and important factors of personality. These studies indicate that more research must be conducted to more accurately determine the relationship of external variables and the many dimensions of personality that exist.

CHAPTER III

Methodology

This study was an investigation of Language Representational System utilization by personality type.

Subjects for the Study

The sample of this study consisted of 115 adult students attending the College of Education at the University of Oklahoma. They were all volunteers ranging in age from 19 to 39. There were 96 female and 19 male subjects.

Testing Instruments Used

The subjects were given the Myers-Briggs Type Indicator (MBTI) and the Language System Diagnostic (LSD) test (see Appendix A).

Myers-Briggs Type Indicator (MBTI)

The MBTI is a 166 item forced choice inventory which was developed to assess personality type as described by Carl Jung's type theory. It is a self-report inventory which provides scores for the attitudes of introversion-extraversion, the functions of thinking (T), feeling (F), sensing (S) and intuition (N), and two additional categories not part of Jung's original typology, judging (J) and perceiving (P).

> The main purpose of the Indicator is to ascertain a person's basic preference. EI, SN, TF, and JP are therefore indices designed to point one way or the other, rather than scales designed to measure traits. What each is intended to reflect is a habitual choice between opposites, analogous to right-or-left handedness. Thus, EI means E or I, rather than E to I (Myers, 1962, p. 2).

The items making up the indicator measure typological differences by the use of behavior reports, value judgments and word pairs. Each scored item has one answer weighted in favor of one of the eight preferences and the other answer weighted in favor of the opposing preference. Points for each preference are totaled yielding eight scores. These eight scores are interpreted as four pairs of scores, with the larger of each pair indicating the preferred pole. The result is a dichotomous classification on each of the four continua. Sixteen possible type classifications are generated. Four continuous scores are calculated for each person, one score for each scale (Myers, 1962).

Reliability and Validity of the MBTI

Reliability measures were found to vary with the MBTI. Carlyn (1977) performed a comprehensive assessment of Myers-Briggs Type Indicator which covered an extensive review of intercorrelational studies, reliability studies, and validity studies conducted with the instrument. It was found that:

> results of the studies indicate that the Myers-Briggs Type Indicator is an adequately reliable self-report inventory. The Extraversion-Introversion, Sensation-Intuition, and Thinking-Feeling scales appear to be relatively independent of each other, measuring dimensions of personality which seem to be quite similar to those postulated by Jung (Carlyn, 1977, p. 461).

Levy, Murphy, and Carlson (1972), Stalcup (1968), Stricker and Ross (1964), Wright (1966) have reported test-retest data for MBTI type category scales using several different populations. While the proportion of agreement between the original and the retest type classifications are significant, the results must be received with caution.

Myers (1962) while reporting test-retest reliabilities in the 80's, .85 (Extravert-Introvert), .84 (Sensing-Intuition), .81 (Thinking-Feeling), and .82 (Judging-Perceiving) for most populations, suggests that caution must be used when evaluating the results.

Stricker and Ross (1964) in two separate studies reported only limited support for the SN and TF scales. They further suggested that the dimensions of JP and EI may be measuring other than the dimensions described in the MBTI manual.

Carlyn (1977) suggests that while the question of content validity remains unsettled, an evaluation of the scored items of the EI, SN, and TF, scales are generally consistent with the content of Jung's typological theory.

Bradway (1964) reported that the scores of 28 Jungian analysts on the MBTI and the Gray-Wheelwright Questionnaire, another measure of Jungian typology, and found agreement between both measures. The analysts also self-typed themselves and reported 100 percent agreement with the MBTI on the EI dimension, 68 percent on the SN dimension, 61 percent on the TF dimension and 43 percent agreement between self-typing and the MBTI. These results are considered additional support for the content validity of the MBTI.

Both factor analysis and correlation studies have been used to investigate the relationship between the Myers-Briggs Type Indicator and other instruments as a means of supporting the construct validity of the MBTI. Saunders (1960) compared the continuous MBTI scores of 1132 subjects with their scores on the Allport-Vernon-Lindzey Study of Values (AVL) an instrument based on Spranger's theory of types. Significant correlations were reported on 12 of 16 predicted hypotheses lending further support to the thesis that the MBTI and the AVL are measuring related constructs.

Richek and Brown (1968) conducted a study designed to investigate the correlates of the Jungian types. An additional purpose of the study was to derive support for the construct validity of the MBTI and the Brown Self-Report Inventory (SRI), a 48 item instrument which provides mea-

sures on eight aspects of the phenomenal world. Correlating the scores of 148 female volunteers, they found that the relationship between the two instruments was strong enough to support the construct validity of each instrument.

Language System Diagnostic (LSD)

The Language System Diagnostic test is a 25 item self-report inventory developed by the author to determine primary, secondary and tertiary language representational systems as described by Richard Bandler and John Grinder in the NLP model.

The items making up the inventory measure a person's preference to categories of words (predicates) within the visual, kinesthetic and auditory dimensions. The diagnostic has three parts. Each question within each section has three responses which willbe either auditory, visual or kinesthetic. Part one is made up of paragraph readings; part two is made up of three-word clusters; and, part three is made up of word phrases. Each response has the same value and raw scores are multiplied by four to obtain an actual score which will be in the range of 0-100. Three scores are yielded with the highest score representing the primary language representational system; the middle score representing the secondary language representational system; and, the lowest score representing the tertiary

language representational system.

Reliability and Validity of the LSD

Test-retest reliability for the subjects sampled (n=50) over a one month interval was .86 (see Appendix B).

To test for validity, six certified NLP practitioners evaluated the LSD for item and category accuracy. The validity of each item was determined by how accurate each question within the test fit the representational categories of auditory, visual, and kinesthetic. Of the six experts, one was a NLP Trainer-Modeler, the highest level of NLP certification; one was an Associate Trainer, the second highest level of NLP certification; and, four were certified NLP Practitioners. Two were Ph.D. level, two had advanced degrees, and two had BA degrees. There was 100 percent agreement on all 25 items by the six evaluators (see Appendix C).

An item analysis of the Language System Diagnostic was accomplished and reports were consistent with data referenced by Dorn (1983b) in a study conducted to determine Primary Representational Systems. Similar to Dorn's results, the auditory responses in this study were least reported. Below is a summary of Dorn's results (1983a, p. 153).

TABLE I

Expected and Observed Distribution and Percentages of Participants' PRS According to Method Employed

PRS	Expected	Observed			
		Interview	Word List	Self-Report	Total
Visual	24 (20%)	64 (53%)*	58 (48%)*	110 (92%)*	77 (64%)*
Auditory	48 (40%)	3 (3%)*	30 (25%)*	5 (4%)*	13 (11%)*
Kinesthetic	48 (40%)	53 (44%)	32 (27%)*	5 (4%)*	30 (25%)*

*p <.01

Procedure

All subjects were administered the MBTI and the LSD during the same time period. The MBTI was given first after instructions were read to the subjects. The subjects were given an opportunity to ask questions for clarification. No time limit was placed on completing the MBTI. The LSD was administered following the completion of the MBTI by all subjects. Subjects were then told that the completion time for the LSD was nine minutes. Once the subjects started the test, they were verbally reminded every two minutes of the time remaining to complete the test. This was done to create anxiety in the subjects which was necessary to accurately measure primary language representational systems (Grinder & Bandler, 1976).

Statistical Design

The analysis of the data will be conducted by Chi Squares for H_1 through H_5. The SAS computer system for data analysis at the University of Oklahoma will be utilized for computing the research data.

CHAPTER IV

Analysis of Data

Analysis of the data for this study was accomplished by Chi Square test. A 3 x 4 Chi Square table reporting expected and obtained frequencies from Language System Diagnostic (LSD) test scores and the Myers-Briggs Type Indicator (MBTI) scores was examined to determine whether obtained frequencies from the tests differed from expected frequences as hypothesized by this study.

In the first phase of analysis, a master table for interrelating three variables within the LSD and four variables within the MBTI was developed. The variables in the LSD were as follows: A = Auditory, V = Visual and K = Kinesthetic. The variables in the MBTI clusters were as follows: EN = Extroverted Intuitive, ES = Extroverted Sensing, IN = Introverted Intuitive, and IS = Introverted Sensing.

Primary language representational system preference was used for analysis of the data derived from the LSD test. In the MBTI, 16 different psychological types were reported and categorized into four personality preference clusters representing continuum ends in the MBTI inventory. The clusters were as follows:

EN = ENFP, ENTP, ENFJ, ENTJ

ES = ESTP, ESFP, ESTJ, ESFJ

IN = ISFJ, INTJ, INFP, INTP

IS = ISTJ, ISFJ, ISTP, ISFP

The variables designated by EN, ES, IN, and IS were used for analysis of data for this study.

In the second phase of analysis, each respondent was assigned a number from 001 to 115 (Appendix D). A data file was established for each subject in the University of Oklahoma Computer System containing primary language representational system preferences and Myers-Briggs Type Indicator cluster preference.

In phase three of the data analysis, subject preferences scores were analyzed using Chi Square analysis procedures in the Statistical Analysis System (SAS).

Results from Chi Square indicated that there was no significance between expected and obtained frequencies of LSD and MBTI scores. The results of frequency distribution of subjects are reported in Table 1. The table reports frequency, expected frequency, deviation percent, raw percent, and column percent of scores.

TABLE 1

Chi Square Frequency Distribution of Subjects
by LSD and MBTI Preference

LSD	MBTI				
FREQUENCY EXPECTED DEVIATION PERCENT ROW PCT COL PCT	EN	ES	IN	IS	Total
Auditory	6.0 7.6 -1.6 5.22 26.09 15.79	6.0 5.0 1.0 5.22 26.09 24.00	5.0 4.0 1.0 4.35 21.74 25.00	6.0 6.4 -0.4 5.22 26.09 18.75	23 20.00
Kinesthetic	15.0 14.2 0.8 13.04 34.88 39.47	10.0 9.3 0.7 8.70 23.26 40.00	4.0 7.5 -3.5 3.48 9.30 20.00	14.0 12.0 2.0 12.17 32.56 43.75	43 37.39
Visual	17.0 16.2 0.8 14.78 34.69 44.74	9.0 10.7 -1.7 7.83 18.37 36.00	11.0 8.5 2.5 9.57 22.45 55.00	12.0 13.6 -1.6 10.43 24.49 37.50	49 42.61
	38	25	20	32	115
	33.04	21.74	17.39	27.83	100.00

CHI SQUARE = 4.079 LIKELIHOOD RATIO CHI SQ = 4.349
PHI = 0.188 DF =6
CONTINGENCY COFF = 0.185 $p < .05$
CRAMER'S V = 0.133

Tests of Hypotheses

H_0 1 There is a significant distribution of primary language representational systems between introverts and extroverts.

Results of Chi Square analysis (Table 2) of LSD and MBTI variables indicate a significant percentage distribution of language representational systems between introverts and extroverts. Therefore, the hypothesis was accepted.

TABLE 2

Chi Square Table of LSD and MBTI Percentage Distribution

	Extroverts				Introverts		
	EN	ES	%		IN	IS	%
A	26.09	26.09	52.18	A	21.74	26.09	47.83
K	34.88	23.26	58.14	K	9.30	32.56	41.86
V	34.69	18.37	53.06	V	22.45	24.49	46.94

$H_0$2 There are significantly more introverted sensing types utilizing both the auditory and kinesthetic language representational system in the communication process.

Results of Chi Square analysis (Table 3) of LSD and MBTI variables indicate that expected and obtained

frequencies did not differ significantly between introverted sensing types and auditory or kinesthetic language representational system utilization. Therefore, the hypothesis was rejected.

Table 3

Chi Square Table of Introverted Sensing Types to Auditory and Kinesthetic Language Representational Systems

		IS			IS
Auditory	Frequency	6.0	Kinesthetic	Frequency	14.0
	Expected	6.4		Expected	12.0
	Deviation	-0.4		Deviation	2.0

$p < .05$

$H_0 3$ There are significantly more extroverted intuitive types utilizing both the auditory and kinesthetic language representational systems in the communication process.

Chi square analysis (Table 4) of LSD and MBTI variables indicate that expected and obtained frequencies did not differ significantly between extroverted intuitive types utilizing both the auditory and kinesthetic language representational systems in the communication process. Therefore, the hypothesis was rejected.

TABLE 4

Chi Square Table of Extroverted Intuitive Types to Auditory and Kinesthetic Language Representational Systems

		EN			EN
Auditory	Frequency	6.0	Kinesthetic	Frequency	15.0
	Expected	7.6		Expected	14.2
	Deviation	-1.6		Deviation	0.8

$p < .05$

H_0 4 There are significantly more introverted intuitive types utilizing the visual language representational system in the communication process.

Chi square analysis (Table 5) of LSD and MBTI variables indicated that expected and obtained frequencies did not differ significantly between introverted intuitive types utilizing the visual language representational system. Therefore, the hypothesis was rejected.

TABLE 5

Chi Square Table of Introverted Intuitive Types and Visual Language Representational System

		EN
Visual	Frequency	11.0
	Expected	8.3
	Deviation	2.5

$p < .05$

$H_0 5$ There are significantly more extroverted sensing types utilizing the visual language representational system in the communication process.

Chi square analysis (Table 6) of LSD and MBT variables indicate that expected and obtained frequencies did not differ significantly between extroverted sensing types utilizing the visual language representational system. Therefore, the hypothesis was rejected.

TABLE 6

Chi Square Table of Extroverted Sensing Types and Visual Language Representational System

		EN
Visual	Frequency	9.0
	Expected	10.7
	Deviation	-1.7

$p < .05$

Summary of Data Analysis

The analysis of data tested five hypotheses postulated by this study. Results of the analysis indicated that there was a significant distribution by percentage of primary language representational systems between introverts and extroverts. There was no significant difference in obtained and expected frequencies using Chi Square analysis procedures between primary language representational

systems as reported by the LSD and psychological types as reported by the MBTI.

Other Findings

Chi square analysis found a percentage distribution between auditory, visual and kinesthetic primary language representational system responses similar to those reported by Dorn (1983b)in a study assessing primary representational system preference. The results of this study are similar in respect to which representational system was most reported and which was least reported. This study indicates that visual primary language representational systems (42.61 percent) were reported more frequently by subjects. The kinesthetic primary language representational system (37.39 percent) was reported second. And, finally, the auditory primary language representational system (20.00 percent) was least reported by subjects.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

> There comes a time when it is both useful, and appropriate, for the purpose of continuing to expand our understanding of the universe we live in, for entirely new fields of study to be created. Separating new from old, exceptions from rules, and useful from previously unquestionable. So learning and experiences from entirely divergent fields have the opportunity to combine knowledge and experience into configurations that allow further growth, understanding, and impact upon ourselves as people in a changing environment (Dilts, et al., 1980, Preface).

Summary

This study was designed to investigate the relationship between personality type and language representational system utilization in the verbal communication process.

Personality types were measured by the Myers-Briggs Type Indicator (MBTI), a self-report inventory based upon Jung's personality typology. Language representational systems were identified by the Language System Diagnostic (LSD) test designed by the researcher specifically for this study.

The research attempted to determine whether personality types as identified by Jungian psychological typology utilize specific language representational systems as described in the Neuro-Linguistic Programming model.

A sample of 115 adult students attending the College of Education at the University of Oklahoma were administered both the MBTI and LSD test. Of the 115 subjects, 96 were female and 19 were male. They were all volunteers between the ages of 19 and 39.

In the analysis phase of this research, subject preference scores obtained from the Language System Diagnostic (LSD) test and the Myers-Briggs Type Indicator (MBTI) were analyzed using Chi Square analysis procedures in the Statistical Analysis System (SAS) at the University of Oklahoma's computer center.

The results of the Chi Square Analysis found that there was a significant distribution by percentage of primary language representational systems between introverts and extroverts. However, there were no significant differences found in the obtained and expected frequency responses among LSD test variables of auditory, kinesthetic or visual and MBTI variables of introverted sensing, introverted intuitive, extroverted sensing or extroverted intuitive types.

One finding related to the distribution of primary language representational systems was similar to reports by Dorn (1983b) which suggest that the visual language representational system is reported more frequently by adults; the kinesthetic system reported second; and, the auditory system reported third.

Discussion and Conclusions

Since Neuro-Linguistic Programming and Jungian psychological typologies are both concerned with mental process and their expression, it was the purpose of this study to determine whether a significant relationship existed between the two models.

First, partial findings from this research supported the hypothesis that there would be a significant distribution of primary language systems between introverts and extroverts.

While no normative data is available related to Jungian types and students in colleges of education, it is speculated by this researcher that the field of education attracts more extrovert than introvert types. Extrovert types are said to maintain a more positive relationship with the outside world of things, people and ideas (Myers, 1962). These characteristics have been associated in the literature with qualities of good educators.

The subjects sampled were primarily women. They reported slightly more extroverts than introverts. The small number of men sampled were evenly distributed between introvert and extrovert.

This may be explained by the gender distribution between men and women in the field of education where, traditionally, women participate in greater numbers. Results of this study suggest that women are slightly more extroverted

than men. The findings also suggest that the visual, kinesthetic and auditory language systems were equally shared by introverts and extroverts in both male and female categories.

The conclusions reached from these data are that women in education are slightly more extroverted than men in the field of education. They utilize language systems in even distributions between introvert and extrovert preference.

Second, the findings of this study did not support the four hypotheses relating specific psychological types to language representational system utilization patterns.

The initial pilot study completed with a smaller subject sample indicated a possible relationship between language systems and psychological types. However, this study clearly indicated that there were no relationships between language system utilization and psychological typology other than the distribution between introvert and extrovert preference.

The conclusion reached from this finding suggests that language systems exist and are distributed among individuals in patterns that can be measured by the introvert-extrovert preference scale on the Myers-Briggs Type Indicator. One other conclusion reached from the rejection of the four remaining hypotheses is that language system patterns are not related to personality as measured by the

MBTI but may be related to some other unknown variable not yet researched.

In addition, the development of the Language System Diagnostic (LSD) test was an important outcome of this research. It is the first instrument developed that operationalizes a key component of the Neuro-Linguistic Programming model, specifically, language representational systems.

Finally, an important finding was the distribution patterns of visual, kinesthetic and auditory responses reported in this study. The particular distribution of the visual language system being reported most by adults, kinesthetic second and auditory reported least supports previous research conducted in this area.

The high incidents of auditory responses which is slightly higher than previous reports by Dorn (1983b)can be attributed to the subjects sampled in this study. They were all from the education field where verbal communication is an important aspect of the profession.

Further research is necessary to determine what variable links exist that may relate to language system utilization patterns.

Recommendations

The first recommendation concerns replication of this present study with a more diverse population. It is also

suggested that a large sample be utilized to include an equal number of men and women.

The second recommendation is for further research to examine the relationship between language system utilization and sex-roles.

The third recommendation is for further research examining the relationships between language system utilization and age groups.

The fourth recommendation is for further research to examine the variable of culture as it relates to language systems.

The fifth recommendation is for continued research utilizing the Language System Diagnostic (LSD) test in endeavors where communication is being examined.

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APPENDIX A

LANGUAGE SYSTEM DIAGNOSTIC TEST

(LSD)

INSTRUCTIONS FOR SECTION I, II, AND III

Pages 1-8

SELECT THE PARAGRAPH, WORD CLUSTER AND WORD PHRASE WHICH IS EASIEST FOR YOU TO READ.

MARK YOUR ANSWER ON THE ANSWER SHEET PROVIDED FOR YOU. CIRCLE THE APPROPRIATE LETTER A B C WHICHEVER CORRESPONDS TO YOUR ANSWER.

NOTE: YOU HAVE 9 MINUTES TO COMPLETE THIS TEST.

Note: The Language System Diagnostic (LSD) test may be obtain ed by writing to Consultants for Change, Inc., 417 W. Johnson St., Norman, Oklahoma 73069.

SECTION I:

QUESTION 1.

A. You have all heard it repeated, I dare say, that people of science work by means of induction and deduction. To hear all the large words used by people of science, you might think that the man and woman of science must be different from other men and women. To speak scientific language requires a skilled knowledge of the communicative process.

B. Beautiful, beautiful May flowers, that look so bright and graceful, look so colorful and clear, shocking pink and other colors so bright, gorgeous petals, bright happy roses--that's what makes May so pretty and gay.

C. You are living full-time when you have feelings of energy flowing through your body (your juices are flowing) and when you feel in control of yourself. Conversely, you are living part-time when you feel "blah"--or when you experience just going through the motions or feel cheated as a result of not making an active decision concerning your feelings.

QUESTION 2.

A. Warm is a wonderful feeling because I like to be warm; warm, warm, I like to feel warm; warm at night, warm by the fire, warm in my house, a cup of warm cocoa, my warm tummy, a hug from my warm mommy, a warm kiss, my warm blanket, my warm bed. Warm is a wonderful feeling.

B. Have a toy telephone in the room. Encourage a child to talk into the telephone as though s/he were calling his/her mother, father or friend. The other children try to guess what the person on the other end of the line is saying by listening to the one-sided conversation.

C. The flight was perfect. It was one of the most beautiful flights I have ever taken. The sky was a clear azure blue all the way. At times, cloud banks cut off our view of the earth, but most of the way the panorama of countryside stretched out clearly below us in the bright, sparkling sun. The view was magnificent.

QUESTION 3.

A. But in case he took care to avoid catching anyone's eye it was understood. First of all, he had to make clear to those potential companions of his holiday that they were of no concern to him whatsoever. He stared through them, over them--eyes lost in space. The beach might have been empty. If by chance a ball was thrown his way, he looked surprised; then let a smile of amusement lighten his face, looked around dazed to see that there were people on the beach.

B. I think I needed help the first time--my knees felt uncertain. I was helped up and supported until I felt my knees were able to support me. I had a lot of sensation in my legs, especially in my knees, in my hands, and my body was extremely warm. I then had an opportunity to meet each member of the group in a way that felt very different to me, I mean, that I did not feel my whole being threatened by them. I still felt afraid. Finally, I got up by myself. Then I turned to him and felt unafraid. I hugged him briefly.

C. People come to the interview trying to find a way to say something about their interests and concerns. They usually want to talk about their positive assets and make a good impression. In many sales, management, or medical situations, people want to express ideas verbally. It is what people say and how they say it that counts in job interviews.

QUESTION 4.

A. I must be getting better at talking because I think you can hear me now. Cathy was under the impression that it was her fault that we couldn't hear what she was saying. We found that although we were learning to listen better, it was the children that gave us more difficulty in our communication. We seemed often to hear ourselves talking at them rather than with them.

B. It is my purpose to understand how she feels in her inner world, to accept her as she is, to create an atmosphere of freedom in which she can move in thinking and feeling and being, in any direction she desires. How does she use this freedom of new found emotion?

C. The children had been doing things well all along, but we hadn't noticed. We were beginning to stop and watch; our pace had slowed enough for us to see who and what was in front of us. Danny would spot the fish swimming in the waves; Cindy had an eye for finding tiny things, as she would say, "I'm close to the ground so I can see things better."

QUESTION 5.

A. A space order is useful when a person wishes to report what s/he sees. The movement of the paragraph follows the movement of the eyes. That movement must have some continuity which a reader can recognize and follow. It need not start at the far left and move steadily to the far right, or vice versa, since in any view of an observer's gaze is likely to be drawn quickly to the most conspicuous object in sight.

B. This is a good game to teach listening as well as rhyming sounds to children. They should face each other in rows or across from tables. The teacher gives a word like "head." The first child rhymes with "bed." The child across from him tries to think of another word that rhymes and so on down the line.

C. It is often difficult to seek support from others. It may, for example, arouse feelings of guilt--we may think we are "imposing." It may feel like an expression of weakness or an admission of failure. It also opens up the fear we may become dependent on another person rather than self-sufficient.

SECTION II

QUESTION 6-15.

6-A.	WITNESS	6-B.	SPEECHLESS	6-C.	UNBEARABLE
	VISION		TONALITY		PRESSURE
	SIGHT		UTTER		HEATED
7-A.	STIR	7-B.	WATCHFUL	7-C.	SQUEAL
	SENSITIVE		SCOPE		REMARK
	HUSTLE		PINPOINT		ORAL
8-A.	PROCLAIM	8-B.	BEARABLE	8-C.	SHOW
	MENTION		GRIP		OBVIOUS
	EARSHOT		HANGING		INSPECT
9-A.	SCRUTINIZE	9-B.	TELL	9-C.	TENSION
	SKETCHY		STATE		SUPPORT
	VAGUE		SPEAK		SORE
10-A.	SHRILL	10-B.	RUSH	10-C.	OUTLOOK
	SCREECH		PANICKY		NOTICE
	RINGING		LUKEWARM		HINDSIGHT

QUESTION 6-15.

11-A.	PERSPECTIVE	11-B.	LISTEN	11-C.	TOUCH
	PICTURE		SAY		GRASP
	LOOK		TALK		HANDLE
12-A.	VOICE	12-B.	FIRM	12-C.	FOCUS
	SOUND		FEEL		CLEAR
	COMMUNICATE		CONCRETE		APPEAR
13-A.	AFFECTED	13-B.	DREAM	13-C.	ARTICULATE
	EMOTIONAL		GLANCE		CONVERSATION
	HOLD		ILLUSION		GOSSIP
14-A.	PERCEIVE	14-B.	HEAR	14-C.	SOFT
	IMAGE		INTERVIEW		MOTION
	OBSERVE		LOUD		TENDER
15-A.	VOCAL	15-B.	WHIPPED	15-C.	PERCEPTION
	SILENCE		STRESS		SCENE
	HUSH		SAFETY		VIEW

SECTION III

QUESTION 16-25.

16-A.	AN EYEFUL	16-B.	I HEAR YOU	16-C.	COME TO GRIPS WITH
17-A.	LEND ME YOUR EAR	17-B.	CALM AND COOL	17-C.	BIRDS EYE VIEW
18-A.	HAND-IN-HAND	18-B.	EYE TO EYE	18-C.	LOUD AND CLEAR
19-A.	GET A PERSPECTIVE ON	19-B.	IDLE TALK	19-C.	HEAVY HANDED
20-A.	WALKING ON THIN ICE	20-B.	IN YOUR MIND'S EYE	20-C.	OUTSPOKEN
21-A.	TONGUE TIED	21-B.	UNDER-HANDED	21-C.	TAKE A PEEK
22-A.	STARE OFF INTO SPACE	22-B.	VOICED AN OPINION	22-C.	SMOOTH OPERATOR
23-A.	HANG IN THERE	23-B.	GET THE PICTURE	23-C.	STRUCK A CHORD
24-A.	IT RINGS TRUE	24-B.	SMOOTH AS SILK	24-C.	IN VIEW OF
25-A.	HORSE OF A DIFFERENT COLOR	25-B.	WORD FOR WORD	25-C.	MOMENT OF PANIC

NAME: _____

PLEASE CIRCLE CORRECT RESPONSE

SECTION I	SECTION II	SECTION III
1. A B C	6. A B C	16. A B C
	7. A B C	17. A B C
2. A B C	8. A B C	18. A B C
	9. A B C	19. A B C
3. A B C	10. A B C	20. A B C
	11. A B C	21. A B C
4. A B C	12. A B C	22. A B C
	13. A B C	23. A B C
5. A B C	14. A B C	24. A B C
	15. A B C	25. A B C

PARTICIPANT WORKSHEET/SCORING INSTRUCTIONS

1. Score your responses from the answer sheet by circling the corresponding letter in one of the three categories below.

	Category I	Category II	Category III
Question 1.	A	B	C
2.	B	C	A
3.	C	A	B
4.	A	C	B
5.	B	A	C
6.	B	A	C
7.	C	B	A
8.	A	C	B
9.	B	A	C
10.	A	C	B
11.	B	A	C
12.	A	C	B
13.	C	B	A
14.	B	A	C
15.	A	C	B
16.	B	A	C
17.	A	C	B
18.	C	B	A
19.	B	A	C
20.	C	B	A
21.	A	C	B
22.	B	A	C
23.	C	B	A
24.	A	C	B
25.	B	A	C

RAW SCORE TOTALS:

PARTICIPANT WORKSHEET/SCORING INSTRUCTIONS (Continued)

2. Now, total the letters circled in each category. This represents your RAW SCORE. Place the three scores from Categories I, II, and III in the appropriate box below.

Cat I	_____	x 4 =	_____	(ACTUAL SCORE)
Cat II	_____	x 4 =	_____	(ACTUAL SCORE)
Cat III	_____	x 4 =	_____	(ACTUAL SCORE)

3. Multiply each of the RAW SCORES by 4. This will give your ACTUAL SCORE.

4. Chart your ACTUAL SCORE on the graph below. Darken in the space which represents your ACTUAL SCORE in each of the three categories.

	0	10	20	30	40	50	60	70	80	90	100
Category I (AUDITORY)											
Category II (VISUAL)											
Category III (KINESTHETIC)											
	0	10	20	30	40	50	60	70	80	90	100

APPENDIX B

Test-Retest Scores

	Test No. 1			Re-Test		
	A	V	K	A	V	K
001	5	8	12	5	9	11
002	3	1	21	3	3	19
003	5	9	11	3	10	12
004	4	9	13	2	5	18
010	8	8	9	7	11	7*
011	3	9	13	3	6	16
012	8	14	3	7	12	6
013	6	10	9	5	13	7
016	6	8	11	2	7	16
020	8	10	7	5	11	9
021	7	11	7	5	15	5
026	4	11	10	6	8	11*
028	10	11	4	7	8	10*
029	6	12	7	5	6	14*
031	7	7	11	7	7	11
033	8	6	11	6	4	15
034	5	7	13	4	7	14
035	9	10	6	9	9	7
040	4	12	9	4	11	10
041	6	7	12	4	9	12
042	6	9	10	5	8	12
044	3	14	8	4	9	12*
045	8	9	8	7	11	7
047	3	8	14	2	6	17
049	6	10	9	4	11	10
050	5	8	12	6	8	11
052	0	7	18	1	5	19
054	3	15	7	3	17	5
055	6	5	13	4	5	16
056	3	17	5	2	17	6
057	8	4	13	9	2	14
058	2	14	9	4	14	7
061	8	11	6	2	10	13*
062	3	3	19	5	5	15
063	6	7	12	7	7	11
064	8	5	12	9	3	13
067	7	5	13	9	2	14
069	9	10	6	9	11	5
070	5	12	8	2	15	8
071	12	6	7	9	8	8
072	5	8	12	4	8	13
073	3	4	18	2	7	16
074	3	9	13	3	7	15

075	5	13	7	4	13	8
076	2	12	9	3	9	13*
077	12	5	8	13	4	8
079	8	13	4	8	15	2
084	4	5	16	4	8	13
089	5	12	8	6	13	6
093	6	8	11	2	9	14

*Changes in Primary Language System

APPENDIX C

LANGUAGE SYSTEMS DIAGNOSTIC TEST
RESEARCH INFORMATION

PURPOSE: The Language System Diagnostic (LSD) was developed to determine Primary, Secondary and Tertiary Representational Systems as described by the Neuro-Linguistic Programming Model.

FACE VALIDITY: Face validity is simply determined by how accurate each question fits the representational categories which are: auditory, visual and kinesthetic.

YOUR TASK: Each question has three responses one of which must be selected to answer the particular question. Each question has in its responses a visual response, a kinesthetic response and an auditory response.

Your task is to read each item and verify whether or not the item is written using visual, auditory or kinesthetic predicates.

Attached is a response sheet to facilitate your process in validating the LSD.

I appreciate your help. Thanks!

PLEASE FILL OUT THE INFORMATION ASKED FOR BELOW. IT IS IMPORTANT TO VERIFY EACH PERSON INVOLVED IN VALIDATING THE LSD FOR RESEARCH PURPOSES.

Name: Sharon Taylor (Add Degree/s if appropriate)

Neuro-Linguistic Programming Skill Level: TRAINER

ADDRESS: 1913 Park PHONE NUMBER: _____
McAllen, TX
_____ zip code _____

ANSWER VERIFICATION SHEET: IN EACH QUESTION CIRCLE WHETHER THE QUESTION RESPONSE IS KINESTHETIC, VISUAL OR AUDITORY.

Question #1: a) K V (A)
b) K (V) A
c) (K) V A

#2: a) (K) V A
b) K V (A)
c) K (V) A

#3 a) K (V) A
b) (K) V A
c) K V (A)

#4 a) K V (A)
b) (K) V A
c) K (V) A

#5 a) K (V) A
b) K V (A)
c) (K) V A

#6 a) K (V) A
b) K V (A)
c) (K) V A

Question #7: a) (K) V A
b) K (V) A
c) K V (A)

#8: a) K V (A)
b) (K) V A
c) K (V) A

#9: a) K (V) A
b) K V (A)
c) (K) V A

#10: a) K V (A)
b) (K) V A
c) K (V) A

#11: a) K (V) A
b) K V (A)
c) (K) V A

#12: a) K V (A)
b) (K) V A
c) K (V) A

#13: a) B V A
b) K D A
c) K V A

#14: a) K V A
b) K V A
c) B V A

#15: a) K V A
b) B V A
c) K V A

#16: a) K V A
b) K V A
c) D V A

#17: a) K V A
b) B V A
c) K D A

#18: a) N V A
b) K D A
c) K V A

#19: a) K V A
b) K V A
c) S V A

#20: a) N V A
b) K D A
c) K V A

#21: a) K V A
b) D V A
c) K D A

#22: a) K V A
b) K V A
c) S V A

#23: a) F V A
b) K G A
c) K V A

#24: a) K V A
b) K V A
c) K V A

#25: a) K V A
b) K V A
c) K V A

PLEASE FILL OUT THE INFORMATION ASKED FOR BELOW. IT IS IMPORTANT TO VERIFY EACH PERSON INVOLVED IN VALIDATING THE LSD FOR RESEARCH PURPOSES.

Name: JUDY KATZ (Add Degree/s if appropriate)

Neuro-Linguistic Programming Skill Level: PROGRAMMER

ADDRESS: 417 W. Johnson PHONE NUMBER: 360-2478

Norman, OK

zip code

ANSWER VERIFICATION SHEET: IN EACH QUESTION CIRCLE WHETHER THE QUESTION RESPONSE IS KINESTHETIC, VISUAL OR AUDITORY.

Question #1: a) K V (A)
b) K (A) A
c) (K) V A

#2: a) (K) V A
b) K V (A)
c) K (V) A

#3 a) K (V) A
b) (K) V A
c) K V (A)

#4 a) K V (A)
b) (K) V A
c) K (A) A

#5 a) K (V) A
b) K V (A)
c) (K) V A

#6 a) K (V) A
b) K V (A)
c) (K) V A

Question #7: a) (K) V A
b) K (V) A
c) K V (A)

#8: a) K V (A)
b) (K) V A
c) K (V) A

#9: a) K (V) A
b) K V (A)
c) (K) V A

#10: a) K V (A)
b) (K) V A
c) K (V) A

#11: a) K (V) A
b) K V (A)
c) (K) V A

#12: a) K V (A)
b) (K) V A
c) K (V) A

#13: a) K V A
b) K V A
c) K V A

#14: a) K V A
b) K V A
c) K V A

#15: a) K V A
b) K V A
c) K V A

#16: a) K V A
b) K V A
c) K V A

#17: a) K V A
b) K V A
c) K V A

#18: a) K V A
b) K V A
c) K V A

#19: a) K V A
b) K V A
c) K V A

#20: a) K V A
b) K V A
c) K V A

#21: a) K V A
b) K V A
c) K V A

#22: a) K V A
b) K V A
c) K V A

#23: a) K V A
b) K V A
c) K V A

#24: a) K V A
b) K V A
c) K V A

#25: a) K V A
b) K V A
c) K V A

PLEASE FILL OUT THE INFORMATION ASKED FOR BELOW. IT IS IMPORTANT TO VERIFY EACH PERSON INVOLVED IN VALIDATING THE LSD FOR RESEARCH PURPOSES.

Name: LYNNE CONWELL (Add Degree/s if appropriate)

Neuro-Linguistic Programming Skill Level: TRAINER & MODELER

ADDRESS: 1994 Central West PHONE NUMBER: 435-1111
CA
zip code

ANSWER VERIFICATION SHEET: IN EACH QUESTION CIRCLE WHETHER THE QUESTION RESPONSE IS KINESTHETIC, VISUAL OR AUDITORY.

Question #1: a) K V (A)
b) K (V) A
c) (K) V A

#2: a) (K) V A
b) K V (A)
c) K (V) A

#3 a) K (V) A
b) (K) V A
c) K V (A)

#4 a) K V (A)
b) (K) V A
c) K (V) A

#5 a) K (V) A
b) K V (A)
c) (K) V A

#6 a) K (V) A
b) K V (A)
c) (K) V A

Question #7: a) (K) V A
b) K (V) A
c) K V (A)

#8: a) K V (A)
b) (K) V A
c) K (V) A

#9: a) K (V) A
b) K V (A)
c) (K) V A

#10: a) K V (A)
b) (K) V A
c) K (V) A

#11: a) K (V) A
b) K V (A)
c) (K) V A

#12: a) K V (A)
b) (K) V A
c) K (V) A

#13: a) K V A
b) K V A
c) K V A

#14: a) K V A
b) K V A
c) K V A

#15: a) K V A
b) K V A
c) K V A

#16: a) K V A
b) K V A
c) K V A

#17: a) K V A
b) K V A
c) K V A

#18: a) K V A
b) K V A
c) K V A

#19: a) K V A
b) K V A
c) K V A

#20: a) K V A
b) K V A
c) K V A

#21: a) K V A
b) K V A
c) K V A

#22: a) K V A
b) K V A
c) K V A

#23: a) K V A
b) K V A
c) K V A

#24: a) K V A
b) K V A
c) K V A

#25: a) K V A
b) K V A
c) K V A

PLEASE FILL OUT THE INFORMATION ASKED FOR BELOW. IT IS IMPORTANT TO VERIFY EACH PERSON INVOLVED IN VALIDATING THE LSD FOR RESEARCH PURPOSES.

Name: JONELL SINGLETON (Add Degree/s if appropriate)

Neuro-Linguistic Programming Skill Level: PROGRAMMER

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zip code

ANSWER VERIFICATION SHEET: IN EACH QUESTION CIRCLE WHETHER THE QUESTION RESPONSE IS KINESTHETIC, VISUAL OR AUDITORY.

Question #1: a) K V (A)
b) K (A) A
c) (K) V A

#2: a) (K) V A
b) K V (A)
c) K (V) A

#3 a) K (V) A
b) (K) V A
c) K V (A)

#4 a) K V (A)
b) (K) V A
c) K (V) A

#5 a) K (V) A
b) K V (A)
c) (K) V A

#6 a) K (V) A
b) K V (A)
c) (K) V A

Question #7: a) (K) V A
b) K (V) A
c) K V (A)

#8: a) K V (A)
b) (K) V A
c) K (V) A

#9: a) K (V) A
b) K V (A)
c) (K) V A

#10: a) K V (A)
b) (K) V A
c) K (V) A

#11: a) K (V) A
b) K V (A)
c) (K) V A

#12: a) K V (A)
b) (K) V A
c) K (V) A

#13: a) K V A
b) K V A
c) K V A

#14: a) K V A
b) K V A
c) K V A

#15: a) K V A
b) K V A
c) K V A

#16: a) K V A
b) K V A
c) K V A

#17: a) K V A
b) K V A
c) K V A

#18: a) K V A
b) K V A
c) K V A

#19: a) K V A
b) K V A
c) K V A

#20: a) K V A
b) K V A
c) K V A

#21: a) K V A
b) K V A
c) K V A

#22: a) K V A
b) K V A
c) K V A

#23: a) K V A
b) K V A
c) K V A

#24: a) K V A
b) K V A
c) K V A

#25: a) K V A
b) K V A
c) K V A

PLEASE FILL OUT THE INFORMATION ASKED FOR BELOW. IT IS IMPORTANT TO VERIFY EACH PERSON INVOLVED IN VALIDATING THE LSD FOR RESEARCH PURPOSES.

Name: PHILIP FELL (Add Degree/s if appropriate)

Neuro-Linguistic Programming Skill Level: PROGRAMMER

ADDRESS: 27022 Pyeatt Lane PHONE NUMBER: 367-5427
Conroe, TX
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ANSWER VERIFICATION SHEET: IN EACH QUESTION CIRCLE WHETHER THE QUESTION RESPONSE IS KINESTHETIC, VISUAL OR AUDITORY.

Question #1: a) K V (A)
b) K (V) A
c) (K) V A

#2: a) (K) V A
b) K V (A)
c) K (V) A

#3 a) K (V) A
b) (K) V A
c) K V (A)

#4 a) K V (A)
b) (K) V A
c) K (V) A

#5 a) K (V) A
b) K V (A)
c) (K) V A

#6 a) K (V) A
b) K V (A)
c) (K) V A

Question #7: a) (K) V A
b) K (V) A
c) K V (A)

#8: a) K V (A)
b) (K) V A
c) K (V) A

#9: a) K (V) A
b) K V (A)
c) (K) V A

#10: a) K V (A)
b) (K) V A
c) K (V) A

#11: a) K (V) A
b) K V (A)
c) (K) V A

#12: a) K V (A)
b) (K) V A
c) K (V) A

#13: a) K V A
b) K V A
c) K V A

#14: a) K V A
b) K V A
c) K V A

#15: a) K V A
b) K V A
c) K V A

#16: a) K V A
b) K V A
c) K V A

#17: a) K V A
b) K V A
c) K V A

#18: a) K V A
b) K V A
c) K V A

#19: a) K V A
b) K V A
c) K V A

#20: a) K V A
b) K V A
c) K V A

#21: a) K V A
b) K V A
c) K V A

#22: a) K V A
b) K V A
c) K V A

#23: a) K V A
b) K V A
c) K V A

#24: a) K V A
b) K V A
c) K V A

#25: a) K V A
b) K V A
c) K V A

PLEASE FILL OUT THE INFORMATION ASKED FOR BELOW. IT IS IMPORTANT TO VERIFY EACH PERSON INVOLVED IN VALIDATING THE LSD FOR RESEARCH PURPOSES.

Name: METHA SINGLETON (Add Degree/s if appropriate)

Neuro-Linguistic Programming Skill Level: ASSOCIATE TRAINER

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Houston, TX 77052
zip code

ANSWER VERIFICATION SHEET: IN EACH QUESTION CIRCLE WHETHER THE QUESTION RESPONSE IS KINESTHETIC, VISUAL OR AUDITORY.

Question #1: a) K V (A)
b) K (V) A
c) (K) V A

#2: a) (K) V A
b) K V (A)
c) K (V) A

#3 a) K (V) A
b) (K) V A
c) K V (A)

#4 a) K V (A)
b) (K) V A
c) K (V) A

#5 a) K (V) A
b) K V (A)
c) (K) V A

#6 a) K (V) A
b) K V (A)
c) (K) V A

Question #7: a) (K) V A
b) K (V) A
c) K V (A)

#8: a) K V (A)
b) (K) V A
c) K (V) A

#9: a) K (V) A
b) K V (A)
c) (K) V A

#10: a) K V (A)
b) (K) V A
c) K (V) A

#11: a) K (V) A
b) K V (A)
c) (K) V A

#12: a) K V (A)
b) (K) V A
c) K (V) A

#13: a) P V A
b) K P A
c) K V A

#14: a) K P A
b) K V P
c) P V A

#15: a) K V P
b) K P V A
c) K P A

#16: a) K P A
b) K V P
c) P V A

#17: a) K V P
b) P V A
c) K P A

#18: a) P V A
b) K P A
c) K V P

#19: a) K P A
b) K V P
c) P V A

#20: a) P V A
b) K P A
c) K V P

#21: a) K V P
b) P V A
c) K P A

#22: a) K P A
b) K V P
c) P V A

#23: a) P V A
b) K P A
c) K V P

#24: a) K V P
b) P V A
c) K P A

#25: a) K P A
b) K V P
c) P V A

APPENDIX D

RAW DATA

	LSD PREFERENCE	MBTI PREFERENCE CLUSTER
1.	K	EN
2.	V	IN
3.	V	EN
4.	V	ES
5.	K	EN
6.	A	IN
7.	A	EN
8.	K	IS
9.	K	ES
10.	K	EN
11.	V	IN
12.	A	IS
13.	V	IS
14.	K	EN
15.	K	EN
16.	V	IS
17.	A	IN
18.	A	IN
19.	K	EN
20.	V	EN
21.	V	EN
22.	K	IS
23.	V	EN
24.	K	EN
25.	V	EN
26.	V	IS
27.	A	ES
28.	V	ES
29.	V	IN
30.	V	ES
31.	V	EN
32.	V	EN
33.	A	EN
34.	K	IS
35.	A	IS
36.	V	EN
37.	V	ES
38.	K	IS
39.	K	IS
40.	K	IN
41.	A	IN
42.	K	EN
43.	V	IN
44.	V	IS
45.	V	EN
46.	V	IN
47.	K	EN

	LSD PREFERENCE	MBTI PREFERENCE CLUSTER
48.	A	IS
49.	V	EN
50.	K	ES
51.	K	IS
52.	K	EN
53.	A	IS
54.	K	IS
55.	V	IN
56.	K	IN
57.	V	EN
58.	V	EN
59.	K	ES
60.	V	ES
61.	V	EN
62.	K	ES
63.	V	IS
64.	V	EN
65.	V	IS
66.	K	ES
67.	A	IS
68.	K	ES
69.	K	EN
70.	A	ES
71.	V	IS
72.	V	IS
73.	K	ES
74.	A	ES
75.	A	ES
76.	K	EN
77.	K	EN
78.	V	IS
79.	K	IS
80.	V	IS
81.	K	IS
82.	A	IN
83.	V	ES
84.	K	IS
85.	K	IS
86.	V	IN
87.	A	ES
88.	A	EN
89.	V	IS
90.	V	IN
91.	V	ES
92.	K	EN
93.	A	EN
94.	K	ES
95.	K	EN
96.	V	IS

	LSD PREFERENCE	MBTI PREFERENCE CLUSTER
97.	V	IN
98.	V	ES
99.	V	EN
100.	K	IS
101.	K	IN
102.	K	ES
103.	A	EN
104.	K	IS
105.	K	IN
106.	A	ES
107.	V	EN
108.	K	IS
109.	V	IN
110.	K	ES
111.	V	EN
112.	A	IS
113.	V	IN
114.	V	ES
115.	A	EN

N = 115

LSD Preference: A = 20%, V = 43%, K = 37%

MBTI Preference: EN = 33%, IN = 17%, ES = 22%, IS = 28%

Male: 17%

Female: 83%