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THE RELATIONSHIP OF PERSONALITY AND  
WORK ADJUSTMENT OF VOCATIONAL REHABILI-  
TANTS: A TEST OF HOLLAND'S THEORY.**

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THE RELATIONSHIP OF PERSONALITY AND WORK  
ADJUSTMENT OF VOCATIONAL REHABILITANTS:  
A TEST OF HOLLAND'S THEORY

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GORDON L. BATES  
Norman, Oklahoma  
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THE RELATIONSHIP OF PERSONALITY AND WORK  
ADJUSTMENT OF VOCATIONAL REHABILITANTS:  
A TEST OF HOL' ID'S THEORY

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CHAPTER I

INTRODUCTION

The theory of vocational choice as advanced by John L. Holland (1959a) ". . . assumes that at the time of vocational choice a person is the product of the interaction of his particular heredity with a variety of cultural and personal forces including peers, parents, and significant adults, his social class, American culture, and the physical environment. Out of the experience the person develops a hierarchy of habitual or preferred methods of dealing with environmental tasks [p. 35]." Stated another way, the interaction of personality and environment explains a person's vocational behavior, and the process. Thus, Holland's theory may be categorized as a personality theory that emphasizes vocational behavior. The research reported in the present study was concerned with one aspect of vocational behavior, work adjustment, as related specifically to a vocational rehabilitant group.

The purpose of the present study was to test several hypotheses derived from Holland's recently revised theory (1966b). Holland's (1963) Vocational Preference Inventory (VPI) was employed to ascertain relationships between levels of three hypothesized dimensions of person-environment interactions and work adjustment of vocational rehabilitants. The sample for this study was drawn from all clients (3,300) of the Vocational Rehabilitation Division, State Board of Vocational Education, State of Oklahoma, classified as "rehabilitated" during the Fiscal Year 1967 (July 1, 1966 through June 30, 1967).

### Theoretical Propositions

Four major working assumptions proposed by Holland (1966b) as the heart of his theory, included:

1. In our culture, most persons can be categorized as one of six types -- Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic [p.9].
2. There are six kinds of environments: Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic [p.11].
3. People search for environments and vocations that will permit them to exercise their skills and abilities, to express their attitudes and values, to take on agreeable problems and roles, and to avoid disagreeable ones [p.11].
4. A person's behavior can be explained by the interaction of his personality patterns and his environment [p.12].

### Theoretical Models of Vocational Behavior

Holland postulated theoretical models for each of six personality types (see Table 1), which were identified as

TABLE 1<sup>a</sup>

## THEORETICAL MODELS FOR PERSONALITY TYPES

Code Number	Personality Type <sup>b</sup>	Description
1	<u>Realistic</u>	The model type is masculine, physically strong, unsociable, aggressive; has good motor coordination and skill; lacks verbal and interpersonal skills; prefers concrete to abstract problems; conceives of himself as being aggressive and masculine and as having conventional political and economic values.
2	<u>Intellectual</u>	The model type is task oriented; intrareceptive, asocial; prefers to think through rather than act out problems; needs to understand; enjoys ambiguous work tasks; has unconventional values and attitudes; is anal as opposed to oral.
3	<u>Social</u>	The model type is sociable, responsible, feminine, humanistic, religious; needs attention; has verbal and interpersonal skills; avoids intellectual problem solving, physical activity, and highly ordered activities; prefers to solve problems through feelings and interpersonal manipulations of others; is orally dependent.
4	<u>Conventional</u>	The model type prefers structured verbal and numerical activities and subordinate roles; is conforming (extrareceptive); avoids ambiguous situations and problems involving interpersonal relationships and physical skills; is effective at well structured tasks; identifies with power; values material possessions and status.

TABLE I -- Continued

Code Number	Personality Type <sup>b</sup>	Description
5	<u>Enterprising</u>	The model type has verbal skills for selling, dominating, leading; conceives of himself as a strong, masculine leader; avoids well-defined language or work situations requiring long periods of intellectual effort; is extrareceptive; differs from the Conventional type in that he prefers ambiguous social tasks and has a greater concern with power, status, and leadership; is orally aggressive.
6	<u>Artistic</u>	The model type is asocial; avoids problems that are highly structured or require gross physical skills; resembles the Intellectual type in being intrareceptive and asocial; but differs from that type in that he has a need for individualistic expression, has less ego strength, is more feminine, and suffers more frequently from emotional disturbances; prefers dealing with environmental problems through self-expression in artistic media.

<sup>a</sup>Holland (1966b, pp. 16-17).

<sup>b</sup>The personality type code numbers are consistent with the numbers assigned for coding VPI scores.

"model orientations." In addition to the theoretical propositions, Holland's (1966b) description of the types included an empirical summary consisting of occupational titles (see Table 2). It was in this manner, he wrote, that ". . . a large portion of the voluminous vocational literature was

TABLE 2<sup>a</sup>

## VOCATIONAL PREFERENCES FOR PERSONALITY TYPES

Code Number	Personality Type <sup>b</sup>	Vocational Preference
1	<u>Realistic</u>	Persons who choose or prefer the following occupations resemble this type: airplane mechanic, construction inspector, electrician, filling station attendant, fish and wildlife specialist, locomotive engineer, master plumber, photoengraver, power shovel operator, power station operator, radio operator, surveyor, tree surgeon, tool designer.
2	<u>Intellectual</u>	Vocational preferences include: aeronautical design engineer, anthropologist, astronomer, biologist, botanist, chemist, editor of a scientific journal, geologist, independent research scientist, meteorologist, physicist, scientific research worker, writer of scientific or technical articles, zoologist.
3	<u>Social</u>	Vocational preferences include: assistant city school superintendent, clinical psychologist, director of welfare agency, foreign missionary, high school teacher, juvenile delinquency expert, marriage counselor, personal counselor, physical education teacher, playground director, psychiatric case worker, social science teacher, speech therapist, vocational counselor.
4	<u>Conventional</u>	Vocational preferences include: bank examiner, bank teller, bookkeeper, budget reviewer, cost estimator, court stenographer, financial analyst, IBM equipment operator, inventory controller,

TABLE 2 -- Continued

Code Number	Personality Type	Vocational Preference
		payroll clerk, quality control expert, statistician, tax expert, traffic manager.
5	<u>Enterprising</u>	Vocational preferences include: business executive, buyer, hotel manager, industrial relations consultant, manufacturer's representative, master of ceremonies, political campaign worker, speculator, real estate salesman, restaurant worker, sports promoter, stock and bond salesman, television producer, traveling salesman.
6	<u>Artistic</u>	Vocational preferences include: art dealer, author, cartoonist, commercial artist, composer, concert singer, dramatic coach, freelance writer, musical arranger, musician, playwright, poet, stage director, symphony conductor.

<sup>a</sup>Holland (1966b, pp. 16-17).

<sup>b</sup>The personality type numbers are consistent with the number assigned for coding VPI scores.

sorted into six conceptual bins so that it could be comprehended with greater ease [p. 18]." He cautioned that ". . . The theoretical formulations for each type are assumed to be consistent with their empirical summaries, but they were arrived at by a subjective process. They should be regarded as potentially useful speculations rather than as substantive accounts of our knowledge [p. 19]."

A model orientation was described by Holland as ". . . a cluster of characteristic adaptive behaviors (coping mechanisms), psychological needs and motives, self-concepts, life history, vocational and educational goals, preferred occupational roles, aptitudes, and intelligence [p. 16]."

### Work Adjustment

The concept, work adjustment, was postulated within the theory of work adjustment discussed by Dawis, England, and Lofquist (1964). They defined work adjustment as "The process by which an individual (with his unique set of abilities and needs) acts, reacts, and comes to terms with his work environment [p. 8]." Dawis, et al., theorized that "satisfactoriness" and "satisfaction" were outcomes of the interaction between the individual and his vocational environment. They defined these work adjustment variables as follows:

Satisfactoriness: -- Evaluation of the individual's work behavior principally in terms of the quality and quantity of task performance and/or performance outcomes (products, service).

Satisfaction: -- The individual's evaluation of stimulus conditions in the work environment with reference to their effectiveness in reinforcing his behavior [p. 9].

The theory of work adjustment was formulated as the basic theory upon which the Minnesota Studies in Vocational Rehabilitation were undertaken. Lofquist, Siess, Dawis,

England, and Weiss (1964) developed a monograph which defined disability in terms of its consequences for work adjustment. In their approach, disability of rehabilitants was considered another variable of work adjustment. Therefore, the employment of the work adjustment variables and the associated measurement instruments in the present study of rehabilitants appeared particularly relevant.

### Derivation of Hypotheses

Holland's (1966b) theory assumed that personality patterns may be derived for individuals from the VPI scale scores obtained for each of the six personality types. In the present study the highest scale score plotted on a VPI profile represented the primary personality type for each subject. The second highest scale score then became the secondary personality type. A complete rank ordering of the six scale scores by their assigned code numbers (see Table 1) constituted a subject's personality pattern, and was recorded as a six digit personality code. All personality codes so derived by this system should have ordinal-scale properties.

Vocational environments were similarly coded from an aspect of Holland's theory (1966b) which assumed that ". . . the character of an environment is dependent upon the nature of its members, and that the dominant features of an environment are dependent upon the typical character-

istics of its members [p. 53]." Thus, vocational environments were coded utilizing the following systems: (a) Holland's Table 1, "The Personality Types and the Vocational Preferences Defining Each Type [1966b, pp. 16-17];" (b) Appendix A from Holland's "Classification Scheme for Determining a Person's Resemblance to the Model Types [1966b, pp. 109-124];" (c) "A Psychological Classification Scheme for Vocations and Major Fields [Holland, 1966a];" (d) the matching of occupational descriptions in the Dictionary of Occupational Titles, Volume I and Volume II (U.S. Department of Labor, 1965) with VPI empirical and theoretical descriptions of the personality types; (e) the establishment of local norms by testing rehabilitants with the VPI and coding the vocational environments; or (f) combinations of these classification schemes.

Holland also regarded personality and environmental coding as having dimensional values, three of which will be considered. First, a congruence incongruence dimension (referred to hereafter as "congruency" dimension) was postulated in Holland's theory (1966b). He assumed that better predictions could be made about human behavior if both the individual and his environment were assessed. For example, if a person's personality code matched his environmental code, then certain beneficial results could be anticipated. Some beneficial outcomes should include higher

vocational achievement (satisfactoriness) and greater satisfaction (vocational achievement and satisfaction were defined as "work adjustment" in the present study). For example, code patterns such as a 534621 personality code and a 536421 vocational environmental code would, in terms of the theory, be congruent since both the primary codes (first digit in each code) and both the secondary codes (second digit in each code) are in agreement (53).

Secondly, a consistent/inconsistent dimension (referred to hereafter as "consistency" dimension) of person-environment interaction was postulated by Holland (1966b). The rationale for this dimension was developed from his hypothesis that if the primary and secondary personality types were consistent (i.e., the theoretical and empirical descriptions of the primary personality type overlapped the secondary type) then higher vocational achievement and greater work satisfaction would result. To illustrate, Holland (1966b) gave an example of a 21 code (Intellectual-Realistic) as a "consistent" code, ". . . because the model formulations and the empirical evidence indicate that the Intellectual and the Realistic types have many traits in common -- unsociability, an orientation toward things rather than people, self-deprecation, and masculinity [p.44]." Personality types having contradictory attributes were labeled "inconsistent,"

such as a 13 (Realistic-Social) code. These codes possess ". . . an orientation toward things versus an orientation toward people, masculinity versus femininity, poor interpersonal skills versus good interpersonal skills, motoric skills versus verbal skills [p. 44]." Thus, according to Holland, psychological integration is implied by consistent codes (1966b). He provided the following combinations as representative of consistent codes: 12, 21, 14, 41, 26, 62, 36, 63, 45, 54, 56, 65, 53, 35, 34, and 43, as empirical evidence for support for his consistency hypothesis. These codes were obtained from the interest profiles of a group of National Merit Scholarship finalists (307 boys, and 226 girls) by correlating the primary and secondary personality types of the subjects from their VPI scale scores (Holland, 1966b). The following inconsistent codes were also provided: 23, 32, 24, 42, 16, 61, 25, 52, 46, 64, 13, 31, 15, and 51.

A third dimension of personality and environmental typing hypothesized by Holland's theory was a homogeneous-heterogeneous dimension (referred to hereafter as "homogeneity" dimension). This dimension may be explained best by viewing it in terms of the profile of a homogeneous personality pattern or environmental model. A homogeneous VPI profile would have high peaks and low valleys (i.e., the profile would reflect a prominent or readily apparent orientation toward one of the six personality types, and a

lesser orientation toward secondary or other types) A relatively flat VPI profile (i.e., no prominent orientation toward any one personality type or model) would be viewed as heterogeneous. From this concept it was postulated that high levels of homogeneity would be associated with high levels of work adjustment (satisfactoriness and satisfaction).

Holland (1966b) further hypothesized that combinations of successively higher levels of congruency, consistency, and homogeneity were also conducive to higher levels of satisfactoriness and satisfaction. Incongruent, inconsistent, and heterogeneous combinations of personality patterns and environmental models would be conducive to less desirable outcomes. Thus, it was hypothesized that combinations of progressively higher levels of the three dimensions would be associated with higher levels of work adjustment.

Finally it was assumed that subjects, whose eligibility for rehabilitative services was based on psychological disabilities rather than other types of disabilities, would be less stable; and consequently, their dimension levels would be less likely to discriminate a relationship with their work adjustment measures. Thus, it was hypothesized that subjects with psychological disabilities would have weaker dimension-work adjustment relationships, than subjects with other disabilities.

### The Hypotheses

One. Rehabilitants, whose VPI personality patterns (using primary and secondary types only) were congruent with their associated vocational environmental models, would exhibit higher work adjustment than rehabilitants having patterns incongruent with their models.

Two. Rehabilitants whose VPI personality types were consistent (i.e., the first two digits of their personality patterns must be consistent), employed in vocational environments which similarly had consistent patterns, would exhibit higher work adjustment than rehabilitants with lower levels of consistency.

Three. If the personality patterns of rehabilitants were homogeneous, then their work adjustment would be higher than that of rehabilitants who did not exhibit such homogeneity.

Four. When VPI personality patterns and environmental models possessed higher levels of one, two, or a combination of all three personality dimensions, then rehabilitants would show progressively stronger relationships between personality dimensions and work adjustment.

Five. Rehabilitants determined eligible for vocational rehabilitation services and classified as having psychological disabilities, would exhibit weaker relationships between their personality dimensions and their

work adjustment measures, than would rehabilitants no so classified.

### Background for the Study

Extensive research has been devoted to the study of vocational behavior, investigating numerous theoretical formulations of the proposed theories (Brill, 1949; Ginzberg, Ginsburg, Axelrad, and Herma, 1951; Holland, 1958; Roe, 1957; Super, 1953). Recognizing the need for comprehensive theory exploration, Holland (1966b) attempted to provide a theoretical framework for the integration of current knowledge of vocational behavior within the main body of psychological and sociological knowledge, and to provide a theory which would be amenable to confirmation. He considered vocational behavior to be related to life history, personality, and self conceptions, as well as to attitudes and interests.

Considerable attention has also been devoted to the relationships between personality and vocational choice (Bordin, Nachmann, and Segal, 1963; Hollander, 1968; Irvin, 1968; Osipow, Ashby, & Wall, 1966; Segal, 1961). Although this relationship is of vital concern to Vocational Rehabilitation (VR) counselors, it is the work adjustment outcomes of rehabilitants in their work settings that is their ultimate concern. The counselors' objective is to habilitate or rehabilitate clients in the world-of-work. The relation-

ship between specific personality dimensions postulated in Holland's theory (congruency, consistency, and homogeneity) and work adjustment outcomes was considered most useful to VR counselors in the achievement of the objective. Consequently, it was Holland's relating of personality dimension to vocational behavior, as well as his theory's amenability to research, that suggested to this investigator the testing of these formulations from the theory and the study of subjects from a population of vocational rehabilitants.

Holland's theory (1966b) could be viewed as a matching model, because of its concern with the psychological "goodness-of-fit" of persons and environments. The assessment of both would appear essential to the prediction of the goodness-of-fit. Holland considered "vocational interest" as another aspect of personality. He concentrated on the development of vocational interest scales for the identification of personality types. The typing of persons and environments resulted in the matching process.

Parsons (1909) developed a matching-model in his early theory of vocational choice in which he proposed bringing together information derived from analyses of individuals and their jobs. The Dictionary of Occupational Titles (U.S. Department of Labor, 1965) has provided the most extensive present-day classification system which

facilitates implementation of the matching process. Holland's theory (1966b) and the Theory of Work Adjustment (Dawis, et al., 1964) essential to the Minnesota Studies in Vocational Rehabilitation could be considered as representative of this model. Strong's (1943) measurement of vocational interest, and the occupational aptitude patterns of the General Aptitude Test Battery (U.S. Department of Labor, 1966) are seen as additional examples of well established vocational instruments developed around the matching concept.

A psychological relationship between persons and environments was proposed in the early work of Stern, Stein, and Bloom (1956), and later by Sanford (1962). The theory of work adjustment (Dawis, et al., 1964) was concerned with this same relationship. However, unlike Holland's theory, ability and aptitude measures (predictors for satisfactoriness) and needs (predictors for satisfaction) were used to evaluate persons. Since the present study used only the outcomes from the theory of work adjustment, i.e., the work adjustment measures (satisfactoriness and satisfaction) for testing hypotheses derived from Holland's theory, a review of the vocational development literature was not undertaken.

From the studies in vocational psychology based on the matching model, an important statistical procedure was developed: the trait-and-factor-centered approach. Guilford,

Christensen, Bond, and Sutton (1954) undertook extensive research using factor-analytic statistical procedures. Six major factors: mechanical, scientific, social welfare, clerical, business, and esthetic (Guilford, et al., 1954) were those which Holland (1966b) believed most closely approximated his model personality types.

The matching model approach, to be effective, would require a classification system to facilitate the matching process. Several theorists have emphasized the importance of a psychological classification of occupations. Roe (1957), for example, used a two-way system to classify occupations and occupational levels, encompassed within a scheme for evaluating an individual's orientation toward persons or not toward persons. Tiedeman and O'Hara (1960) suggested a classification system based on the styles they exhibited; Roe, Hubbard, Hutchinson and Bateman (1966) studied job changes and the classification of occupations; and Holland (1959b) explored the classification of occupations in terms of personality and intelligence. A dual classification scheme was also employed in Holland's theory to determine a person's resemblance to the model types (Holland, 1966b, pp. 109-121). Astin and Holland (1961) used a two-way classification system to measure college environments. Their Environmental Assessment Technique (EAT) was the forerunner of the present Psychological Classification Scheme for Voca-

tions and Major Fields (Holland, 1966a). The EAT grew out of a suggestion of Linton (1945) who postulated that environmental forces were transmitted largely through other people. Although the EAT was validated on college groups, it was based on Holland's (1959a, 1961) theory of vocational choice. The assumption was made that a social environment of an occupation and a college environment could be classified with the same techniques.

The Holland theory could also be classified among the personality theories as typological. When Osipow (1968), for example, reviewed Holland's theory of vocational behavior, he categorized it as a "Career Typology Theory." Examples of personality classification employing typological principles would include: Cattell's "trait theory" (1946), Eysenck's organization of traits into a "personality type" (1947), Freud's "anal and oral types" (1933), Jung's "extraverted and introverted types" (1933), and Sheldon's "somatotypes" (1940). The concept of typology was integral to Super and Crites' (1962) definition of personality, which ". . . treats personality as a pattern of traits or ways of reacting to external stimuli [p. 515]." This definition, intrinsic to Holland's theoretical model for his personality types, could also be described as a "pattern of traits."

In his development of personality types, Holland was influenced by Super's (1953) theory of vocational

development (a term for the gradual synthesis of vocational choice). Super implied that vocational development involved the interaction of inherited individual resources and an individual's own environment. The process of synthesis (needs, values, interests, and opportunities), by reason of the person-environment interaction, was present in Holland's interacting individual, who searched for environments and vocations compatible with his personality pattern.

Vocational interest was another aspect of the theories of vocational choice on which their interrelatedness could be compared. Strong's (1943) basic work in vocational interests, for example, and Holland's work bore a close relationship through a conceptual definition: "If vocational interests are an expression of personality, then it follows that interest inventories are personality inventories [Holland, 1966b, p. 3]." The relationship could be carried one step further: they were also operationally related since both inventories used occupational content.

Three types of appraisal of vocational fitness were proposed by Super and Crites (1962):

- (1) The problem presented by the client must be identified and its seriousness appraised by the counselor, so that he may know what he is expected to work with, whether or not he should continue to work with it, and what kind of approach he might best use.

- (2) The person being counseled must be appraised, that is, the counselor must attempt to formulate an idea as to the manner of man with whom he is dealing and what the man's needs, capacities, and resources are.

(3) The prognosis stems directly from the appraisal of the person; it is, in other words, an appraisal of the person's prospects [p. 3].

VR counselors, concerned with all three types of appraisal, have shown major interest in prognosis.

The present investigator, being concerned ultimately with prognosis, selected the statistical approach in lieu of clinical methods for this study. This choice stemmed from an assumption by the writer that VR counselors would be more confident of the potential work adjustment of their clients when employing a statistical approach. This position was taken by Meehl (1954) after analyzing a number of studies. He summarized his findings for 20 studies involving a comparison of clinical and statistical methods for predicting performance, and concluded: "In about half of the studies, the two methods are equal; in the other half the clinician is definitely inferior [p. 119]." Goldman (1961) also compared the statistical and clinical approaches and evaluated the evidence in favor of the statistical over the clinical methods. Additional support for the statistical methods was provided by other studies: e.g., Kelly and Fiske (1951), Halbower (1955), Hathaway and McKinley (1967), and Strong (1943). The clinical approach has not been without its proponents (e.g., Holt, 1958; Trankell, 1959; and others), thus pointing up the need for continued research into the efficacy of both major approaches in order

to better understand the conditions under which each method would be most effective.

Another important consideration is the choice of methods of vocational appraisal should be the time and expense that may be saved through VR counselors' use of the approach. Goldman (1961) pointed out that it made sense to use the clerk to do the predictive work and to leave the clinician free to do things that could not be done by the clerk or the machine. This consideration appeared important to VR counselors, in a society requiring and demanding an increased use of counseling services.

Research, which partially tested the theoretical formulations of person-environment interactions from Holland's theory (1966b), was conducted by him as part of two longitudinal studies (1962 & 1963). These studies found some support for higher levels of specific personality dimensions (congruency, consistency, and homogeneity) as being conducive to certain desirable outcomes for students in college environments. No specific studies have been conducted involving non-college populations which approximate that of vocational rehabilitants.

The theoretical implications for congruency were evidenced in much vocational literature. In addition to Holland's own studies, the literature provided extensive support for the hypothesis that congruency of personality

and environment were conducive to certain desirable vocational outcomes (Barnette, 1961; Boyd, 1961; Clark, 1961; Ferguson, 1960; Ghei, 1960; Kelly & Fiske, 1951; Kilbrick, 1961; Rosenberg, 1957; Stern, Stein, & Bloom, 1956; Stone, 1960; & Strong, 1943). Some support for the consistency hypothesis (Holland, 1963) was also found: but no studies exploring the homogeneity hypothesis were reported.

Holland's own research (1958, 1959b, 1960a, 1962, 1963, 1964, & 1968) together with research conducted with associates (Astin & Holland, 1961; Holland & Astin, 1962; Holland & Nichols, 1964; Nichols & Holland, 1963), constituted the major effort to validate his theory. This research was largely confined to the studies of populations of National Merit Scholarship finalists and to general college populations. Holland (1965) provided norms for 18 reference groups with which comparisons could be made, giving some support to the generalization of the research findings to non-college populations.

In summary, a review of the literature provided an extensive base for Holland's theoretical formulations. Applications of such theoretical concepts as the matching model, typology, occupational classification, and the relating of personality to vocational choice, were prevalent in much of the theorizing, and were the focal point for

related research. However, the characterizing of people by six personality types, and the characterizing of six corresponding environments by a common set of constructs (thus making it possible to classify people and environments in the same terms and permitting the prediction of outcomes by matching people and environments) were theoretical concepts original to Holland's theory.

### Need for the Study

Vocational rehabilitants appeared to be a select group of persons in the world-of-work. By virtue of having a classifiable disability (physical, psychological, or a combination of both), which impeded them from becoming vocationally self-sufficient, they required special habilitation or rehabilitation assistance before they could become effectively employed. Consequently, VR counselors would experience more complex counseling problems with their clients than customarily encountered by counselors in other settings. Additionally, through the years VR counselors have experienced pressure to assume larger caseloads, due to the growing societal awareness of the extensive needs for such services. From these circumstances an increasing need has developed to provide VR counselors with testing and assessment devices specifically suited to their needs. The extensive Minnesota Studies in Vocational Rehabilitation provided an example of such an effort.

Holland's VPI (1965) would seem to be an instrument particularly suited to the needs of the VR counselors. Holland has stated that the chief value of the VPI, as a brief screening inventory, would seem to be its economical use of time and money. The present study was undertaken to explore the potential of the VPI for such use with rehabilitants. It was anticipated that some of the more time-consuming techniques currently in use could be reduced. It was further anticipated, as suggested by Holland (1965), that rehabilitants with abnormal or inappropriate VPI profiles could be referred by their VR counselors for a more complete psychological evaluation. Early identification of clients requiring special assistance, using these latter profiles, would be one of the potential advantages to the use of the VPI. A second possible advantage of this instrument, and a prime concern of the present study, was the possible predictive potential of the VPI in its use by VR counselors. If the VPI could be employed as a predictive device of work adjustment, then vocational choice and ultimate vocational placement would be facilitated. Some of the more time-consuming devices would still be necessary when need for additional vocational data was indicated.

VR counselors have also experienced a need to gain insight into the personality dynamics of their clients. The VPI Manual (1965) provided scale summaries ". . . in terms

of three crude levels of inference [p. 16].": (a) an Empirical Summary, consisting of a list of adjectives and phrases that may be used to describe clients with high scores on specific VPI scales; (b) a Clinical Interpretation, interpreting the scale scores, scale items, and their interrelationships; and (c) a Conceptual Definition, integrating the evidence and clinical experience of the test users. Used with caution and in conjunction with other data, the levels of interpretation may provide useful insights for VR counselors. These insights might not otherwise be readily available, without recourse to a complete psychological evaluation.

Approximately twenty per cent of the subjects in the sample for the present study, exclusive of mental retardates, were determined eligible for rehabilitation services on the basis of vocational limitations of a psychological nature. Assuming about this same distribution would be expected by VR counselors (1967 Annual Report, Oklahoma Vocational Rehabilitation Division of the State Board of Vocational Education), prediction of the level of potential work adjustment for such a group would appear to be an important consideration.

## CHAPTER II

### METHOD

#### Research Design

The design for the research being reported was formulated essentially as a correlational study. The aim was to facilitate inquiry into the relationships between levels of three dimensions of person-environment interaction, hypothesized in Holland's theory (1966b), and two independent measures of work adjustment. It was planned to determine if any support for the predictive efficiency of Holland's VPI could be inferred from its use and interpretation for the vocational rehabilitants used as the sample in the present study.

The work adjustment outcomes selected for the present study were those postulated in the theory of work adjustment (Dawis, et al., 1964). This theory used the variables satisfaction, satisfactoriness, and tenure to evaluate work adjustment outcomes. The tenure variable was controlled for by the selection of all of the subjects "rehabilitated" during Fiscal Year 1967. In this way only subjects having at least one to two years of job tenure

were used in the study. The Minnesota Satisfaction Questionnaire (MSQ) was selected as the measure of employee's job satisfaction, and the Minnesota Satisfactoriness Scales (MSS) were used as the companion measure of employers' satisfaction with their employees (satisfactoriness). Together, these instruments constituted the primary assessment of work adjustment.

The empirical relationship between personality types and vocational preferences in Holland's model orientations (1966b) has been previously discussed. It may be stated further that the measures of work adjustment used in the present study were employed for an empirical measurement of the variables, "satisfaction" and "satisfactoriness."

### The Instruments

Holland's (1965) Vocational Preference Inventory (Sixth Revision) is self-administering, requiring between 15 and 30 minutes for completion. The inventory contains 160 selected occupational titles, to which the client responds on the basis of "like" or "dislike." Six personality scales (Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic) contained in the VPI are used for typing a person. Three additional personality scales (Self-Control, Masculinity, and Status), plus an Acquiescence and an Infrequency scale are provided. Holland

(1966b) stated that the primary purpose of the VPI, is to assess personality. Additionally, he also asserted that its occupational content would make it useful as an interest inventory.

The first six scales, reported to have only moderate intercorrelations in a sample of employed adult males, appeared relatively homogeneous and independent (Holland, 1965). These intercorrelations ranged from a  $+.54$  between the Realistic and Intellectual scales, to a  $-.23$  between the Intellectual and Enterprising scales. Moderate to high internal consistency reliability coefficients were also reported for the first six scales, ranging from  $+.69$  to  $+.86$ . Retest reliability coefficients were reported in the same range.

Several studies which provided support for the construct validity of the VPI, were reported by Holland (1958). These studies and the normative data published in the Manual for the VPI (1965) suggested that a wide range of normal and abnormal groups may be differentiated. Appropriate and statistically significant differences between these groups were found. Several other studies involved correlating the VPI with personality scales and inventories (California Psychological Inventory, Minnesota Multiphasic Personality Inventory, Sixteen Personality Factor Questionnaire, National Merit Student Survey, and Barron's Indepen-

dence of Judgment, Originality, and Complexity-Simplicity).

These correlations were reported as supportive of the validity and the meanings of the VPI scales (Holland, 1960b; 1962; 1963). In summary, support has been found for the meanings assigned to the scales, although some overlapping prevailed in the meanings between scales. As a general evaluation Holland stated "It is unlikely that the VPI has more validity than comparable inventories [Holland, 1965, p. 17]."

Although some studies found the VPI (Holland, 1962; 1963) demonstrated a degree of predictive validity, Holland (1965) considered its predictive efficiency to be only moderate. The studies cited were concerned with: prediction of academic, artistic, scientific, and social achievement of undergraduates with superior aptitude (Holland & Astin, 1962); prediction of first year college performance of high aptitude students (Nichols & Holland, 1963); prediction of deviant academic performance in the junior year of college (Winkelman, 1960); and prediction of college grades from personality and aptitude variables (Holland, 1960a).

Although these studies indicated some moderate predictive efficiency for the VPI, none of their results necessarily generalized to prediction of work adjustment of rehabilitants. The normative data cited by Holland (1965) failed to provide reference groups with which rehabilitants could be

meaningfully identified. VR clients represented individuals with many disparate disabilities and employment in a wide variety of occupations. Abnormal normative samples for Drug Addicts, Psychopaths, Psychiatric Patients VA Hospital, and TB Patients VA Hospital provided limited atypical normative data for use with rehabilitants.

The Short-Form Minnesota Satisfaction Questionnaire (MSQ), a subtest of the Long-Form Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967), was one of the two work adjustment measures employed in the present study. These measures were used to assess the current status of work adjustment for the subjects. The short-form MSQ is a twenty-item, self-administering questionnaire. Each item was selected as representative of one of the scales in the long-form MSQ (ability utilization, achievement, activity, advancement, authority, company policies and practices, compensation, co-workers, creativity, independence, moral values, recognition, responsibility, security, social service, social status, supervision-human relations, supervision-technical, variety, and working conditions). Responses to each item are made by selecting one of the five possible choices to express the status of job satisfaction (very dissatisfied, dissatisfied, neither dissatisfied nor satisfied, satisfied, and very satisfied).

When the short-form MSQ was factor analyzed (Weiss, Dawis, Lofquist, & England, 1966), three satisfaction scales

were defined by the loadings from the twenty basic scales. These were: (a) an intrinsic factor, identified as response-specific reinforcers; (b) an extrinsic factor, related to the work environment; and (c) a General Satisfaction Scale, determined for all twenty items.

Internal consistency reliability coefficients (Weiss, et al., 1967), computed separately for the six occupational groups used in the research, were generally high. The Intrinsic Satisfaction Scale coefficients ranged from  $+ .84$  to  $+ .91$ ; Extrinsic Satisfaction Scale coefficients varied from  $+ .87$  to  $+ .92$  (Weiss, et al., 1967). No data were available relative to the stability of the scores; however, the test-retest correlations reported for the long-form MSQ for the General Satisfaction Scale were  $+ .89$  for a one-week period, and  $+ .70$  for a one-year period (Weiss, et al., 1967).

Evidence for the validity of the short-form MSQ was largely inferred from the long-form MSQ. Evidence of the validity of the MSQ itself, particularly for the prediction of general job satisfaction, could be inferred from the results of studies which confirmed the theoretical expectations developed in the theory of work adjustment. Such evidence was reported by Weiss, et al. (1967), indicating that the MSQ does measure satisfaction in accordance with the expectations of the theory. Two such studies were cited as evidence to support the concurrent and construct

validity of the short-form MSQ: (a) occupational group differences, which paralleled favorably the results of the long-form MSQ; and (b) the relationship of satisfaction to satisfactoriness, which supported the expectation that satisfaction and satisfactoriness are independent variables.

The MSS, reported in its revised form by Weiss, et al. (1966), was the second work adjustment measure used in the present research to assess levels of work adjustment. The short-form MSS contains twenty-nine items, and may be completed easily by the employees in about five minutes time. The theory of work adjustment postulated the independence of satisfaction and satisfactoriness as the two variables of work adjustment. Weiss, et al. (1966) reported the correlation between general satisfaction and general satisfactoriness to be  $-.11$ , as confirmation of the lack of relationship.

Four factors were derived from a factor analysis of the MSS scale items (Weiss, et al., 1966): (a) a promotability/competence factor; (b) a personal adjustment factor; (c) a conformance factor; and (d) general satisfactoriness, which is based on all twenty-nine items in the scales. They also reported intercorrelations of the twenty-nine items to range from  $+.07$  to  $+.86$  with a median correlation of  $+.37$ , and moderate correlations among the three factors of the scale ( $+.55$  to  $+.65$ ).

Reliability coefficients for the MSS factor scores were used in the analyses (Weiss, et al., 1966) ranged between +.83 for the conformance factor and +.94 for general satisfactoriness. When testing for the reliability of the scale scores for the five occupational groups used in the analyses (janitors and maintenance men, assemblers and machinists, clerks, salesmen, and engineers), reliability coefficients were found to range from a low of .74 to a high of .94. In summary, the four scales of the MSS revealed high internal consistency reliability over the diverse occupational groups tested. Weiss, et al. (1966) concluded that the scales were somewhat limited by the high correlation between the factor-analytically derived scales. They stated: "However, taken in relation to the high scale reliabilities, sufficient reliable and specific variance is available to warrant considering these scales as relatively unique [p. 51]."

#### The Sample

A total of 2,336 (Fiscal Year, 1967) clients met all the criteria for this study, and from this population the sample was ultimately selected. These clients were all classified as "rehabilitated" at the time of their case closure. The application of population-screening criteria eliminated the following specific categories of clients: (a) all self-employed, including housewives; (b) all those

incarcerated; and (c) all subjects whose rehabilitation eligibility was based upon mental retardation. Criteria for the subjects' inclusion in the population follow:

One. It was necessary for all subjects, except for a special "unemployed" group treated separately, to be employed in order to obtain the employers' evaluations of "satisfactoriness."

Two. The subjects, whose eligibility for Vocational Rehabilitation services was based on mental retardation or deficiency, had to be excluded from the sample, since Holland (1965) cautioned that: "Generally, persons to be tested should be over fourteen years of age, should be free of brain damage, and should have at least normal intelligence [p. 2]."

Three. Participating subjects, other than "unemployed," had to give their permission for their employers to be contacted, since maintaining the clients' privacy was essential.

#### Selection of Subjects

When the subjects were identified in accordance with the screening criteria, the following information was obtained: (a) name; (b) current street address; (c) city; (d) county; (e) sex; (f) major disability; (g) employment status at closure; (h) county and counselor code; and (j) classification as "rehabilitated." This information was

all obtainable from the Case File Copy (Vocational Rehabilitation Administration Form R-300), routinely completed by all VR counselors for their clients at the time of case closure.

IBM cards were punched with the desired information for the selected clients. The set of cards, representing the population (2,336 rehabilitants) was then used to prepare address labels to facilitate corresponding with the clients.

The next step in the subject selection process involved the addressing of a form letter inquiry to the subjects (see Appendix I). This letter explained the nature of their participation, the purpose of the study, and requested the following information:

1. Were they employed at the present?
2. Were they still employed on the same job as indicated at the time of last contact (closure)?
3. Would they be willing to participate in the study?
4. If they were willing, would they consent to their employer being contacted directly to inquire about the status of their work adjustment?
5. If the answers to questions three and four were affirmative, they were asked to provide: (a) the name and address of their employer; (b) the nature of their duties

and the title of their job; and (c) the kind of work performed in their shop, department, or section. The unemployed subjects were asked only to express their willingness to participate.

Subjects who did not respond to the first mailing were sent a follow-up letter encouraging their participation (see Appendix II). The responses to this second letter resulted in further reduction of available subjects. A total of 329 employed subjects were thus obtained for the sample; an additional 84 unemployed subjects also consented to participate in the study.

The final step in the sample selection procedure involved the responses of their employers to the instruments mailed to them for completion. A follow-up letter was addressed to all employers who did not return their instruments, urging their cooperation (see Appendix VII). Subjects who failed to complete and return the VPI and the MSQ, or whose employers failed to complete and return the MSS, were necessarily excluded from the sample. The final sample for this study contained 200 full-participating, employed subjects. A separate sample of 59 unemployed subjects was also obtained.

### Administration of the Instruments

Administration of the instruments followed identification of the sample subjects. Two procedural steps were employed:

1. One copy of the VPI and one copy of the MSQ (see Appendix III) was mailed to each subject for completion and return (the MSQ was inapplicable for use with the unemployed subjects). A self-addressed, stamped envelope was included for use in the return of these materials (see Appendix IV for the complete text of the transmittal covering letter).

2. One copy of the MSS (see Appendix V) was mailed to the employer of each of the subjects, for completion and return. A self-addressed, stamped envelope was enclosed for use in return of the materials (see Appendix VI for the complete text of the transmittal covering letter). Employers were also sent a follow-up letter (see Appendix VII), if the MSS was not completed and returned within three weeks.

### Processing the Data

The VPI Male or Female Profile Sheets were used for recording the data. Upon return of the questionnaire materials, from both subjects and employers, the processed data were recorded on the appropriate profile sheets. These data were used in the computations of Spearman rank correlation coefficients, which will be discussed later in this chapter.

The following procedural steps were followed in processing the data in order that statistical treatment of the data could be undertaken:

1. The VPI answer sheets for the subjects were first scored, using the VPI Scoring Stencil (Sixth Edition). The derived scale scores were then plotted on the individual profile sheets, thus providing the necessary data to rank-order the personality scales (highest to lowest by percentile rank). The two highest scale scores, by rank order, were used as the personality code for each subject.

2. Environmental models were coded in accordance with the procedure presented earlier (see pages 9 and 10).

3. It was possible, with knowledge of the personality and environmental codes, to assign a separate weight of one to four (lowest to highest) to represent each subject's level of: (a) congruency; (b) consistency; and (c) homogeneity (see Table 3). Ordering of the levels so derived provided a scale with ordinal properties, which was amenable to statistical treatment. Levels 3 and 4 were considered by the investigator to be congruent, consistent, or homogeneous; whereas levels 1 and 2 were viewed as incongruent, inconsistent, or heterogeneous as appropriate. The rationale for this system of assigned weights was developed from Holland's "Part II, Experimental Classification for Vocational Choices and Occupations [1966b, pp. 116-122]." This scheme considered only the

TABLE 3

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Dimensions of Personality Patterns and Environmental Models	
<b>Congruency Dimension Levels</b>	
1 =	Incongruent (neither primary or secondary codes match)
2 =	$p_2^a - E_2^b$ ( <u>secondary</u> codes match)
3 =	$P_1 - E_1$ ( <u>primary</u> codes match)
4 =	$P_1 - E_1$ and $P_2 - E_2$ (primary and secondary codes match)
<b>Consistency Dimension Levels<sup>c</sup></b>	
1 =	Inconsistent
2 =	$E_1 - E_2$ (primary and secondary <u>environmental</u> codes match)
3 =	$P_1 - P_2$ (primary and secondary <u>personality</u> codes match)
4 =	$P_1 - P_2$ and $E_1 - E_2$ (most consistent; complete match)
<b>Homogeneity Dimension Levels<sup>d</sup></b>	
1 =	0.0 to 0.9 normal deviations
2 =	1.0 to 1.9 normal deviations
3 =	2.0 to 2.9 normal deviations
4 =	3.0 to 3.9 normal deviations

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$^a p_2$  = Secondary personality code. Primary codes bear subscript "1".

$^b E_2$  = Secondary environmental code. Primary codes bear subscript "1".

<sup>c</sup>See pages 10-11 for a discussion of the rationale for obtaining consistency dimension levels.

<sup>d</sup>Magnitude of the percentile difference, between the highest and lowest percentile rank of the VPI personality code levels, converted to normal deviations.

primary and secondary codes; thus limiting the scoring weights to four levels (see Table 3).

4. The sex identification of each subject was indicated by selection of the appropriate "Male" or "Female" side of the VPI profile sheets.

5. The type of disability classification (psychological or other), which constituted the basis for eligibility for rehabilitation services, was also recorded on the profile sheets. This classification was obtained from the Vocational Rehabilitation Administration Form R-300.

6. Raw scores from the MSQ and MSS scales for each subject were computed and recorded on the profile sheets. Scoring instructions for the MSQ were obtained from the Minnesota Studies in Vocational Rehabilitation, Manual for the Minnesota Satisfaction Questionnaire (Weiss, et al., 1967). Special instructions for the MSS, including the provision for scoring weights, were provided by the Research Director, Work Adjustment Project, Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota (see Appendix VIII).

#### Statistical Analysis of the Data

The variables, with which the hypotheses one through five were concerned, are presented in Table 3. The relationships of these variables (congruency, consistency, and

homogeneity) to the MSQ and MSS scores for each of the subjects were assessed by Spearman rank correlation coefficients (Siegal, 1956). The degree of association between Holland's (1966b) hypothesized congruency, consistency, and homogeneity personality dimensions and the Minnesota Studies' (Dawis, et al., 1964) criterion measures of work adjustment (MSQ and MSS scores) was thus determined. Multiple correlation coefficients (Guilford, 1965) were computed to assess the effects of all three dimensions with work adjustment measures. The personality dimensions were statistically treated separately, by sex and by disability classifications (psychological and other), in order to determine the differential effect these variables might have upon the relationships of personality dimensions and work adjustment.

The following assumptions, associated with the statistical models and measurement requirements of the data, were made:

1. Levels of personality dimensions were measures of independent variables, were not normally distributed, and had at least ordinal scale properties.

2. The work adjustment measures, satisfaction (MSQ scores) and satisfactoriness (MSS scores), were independent.

The Spearman rank correlation coefficients were computed to test the independence of the three personality dimensions, and the independence of the work adjustment measures (MSQ and MSS scores).

## CHAPTER III

### RESULTS AND DISCUSSION

The results of the tests of the hypotheses for this study, as well as the separate statistical treatment of the population and the sample, will be presented and discussed in this chapter in the following order: the hypotheses, tests of the statistical assumptions, the population, and the sample. The discussion of the results will be, of necessity, somewhat limited and speculative due to the lack of confirmation for the hypotheses and the lack of other studies with which the results could be compared.

#### The Hypotheses

Only one of the 24 Spearman rank correlation coefficients (Siegal, 1956), used to test the relationships between Holland's hypothesized personality dimensions and the work adjustment measures, achieved statistical significance (see Table 4). Levels of the homogeneity dimension and MSQ scores for males with psychological disabilities were negatively correlated at the .05 level of significance.

TABLE 4

CORRELATIONS BETWEEN PERSONALITY DIMENSIONS  
AND WORK ADJUSTMENT MEASURES

Dimensions	Work Adjustment Measures					
	N	df	MSQ Scores	N	df	MSS Scores
Congruency			a			a
Males-psychological	13	11	-.037	13	11	.259
Males-other	111	109	.100	111	109	-.030
Females-psychological	18	16	.220	18	16	.206
Females-other	58	56	-.169	58	56	.012
Consistency						
Males-psychological	13	11	-.012	13	11	-.199
Males-other	111	109	-.066	111	109	-.043
Females-psychological	18	16	-.040	18	16	-.145
Females-other	58	56	.049	58	56	.193
Homogeneity						
Males-psychological	13	11	-.533*	13	11	-.012
Males-other	111	109	.028	111	109	.080
Females-psychological	18	16	-.332	18	16	-.134
Females-other	58	56	-.028	58	56	.049
Congruency, consistency, and homogeneity			b			b
Males-psychological	13	9	.618	13	9	-.374
Males-other	111	107	.111	111	107	-.071
Females-psychological	18	14	.418	18	14	-.209
Females-other	58	54	.092	58	54	.210

Note: Correlations were computed from dimension levels with work adjustment raw scores.

<sup>a</sup>Spearman rank correlation coefficients. Levels of statistical significance were determined from a Table of Critical Values of *t* (Siegal, 1956).

<sup>b</sup>Multiple correlation coefficients. Levels of statistical significance were determined from Table D (Guilford, 1965).

\**p* < .05.

The eight multiple correlation coefficients (Guilford, 1965), testing the relationships between all three dimensions and the work adjustment measures, did not reach the .05 level of statistical significance. Thus, hypotheses one through five were not confirmed. Since no overall significance was found between the dimensions and MSQ or MSS scores, correlation coefficients were not computed for individual levels of the dimensions, or for the combined MSQ-MSS scores.

Hypothesis one. The congruency hypothesis had face validity, particularly in view of the extensive support in the vocational literature for the general hypothesis that congruency of personality and environment should be conducive to certain desirable vocational outcomes. However, it might be concluded that the lack of confirmation for this hypothesis, as well as for the remaining hypotheses, was due to one or more of several possible factors, such as:

1. None of Holland's schemes (1966a, 1966b) for classifying occupations were sufficiently comprehensive to provide specific codes for all the occupations involved in the present study. Consequently Table 1 and Table 2 were used by the investigator to code occupations which could not be readily classified from available coded lists of occupational titles. The need to use more than one classification scheme for coding occupational environments was a procedural variable that could not be controlled.

2. The mathematical model for investigating the implications of congruency for work adjustment outcomes might not have been a sufficiently comprehensive technique for the adequate assessment of person-environment relationships. The formula has not been tested with any other samples; thus, comparisons of these findings with other rehabilitant groups or other studies was not possible.

3. The theoretical model orientations for the personality types (see Table 1 and Table 2) might not have been valid for a non-college population such as the vocational rehabilitants used in this study.

Hypothesis two. The consistency hypothesis, although not confirmed, has had research support (Holland, 1962, 1963) and has evidenced face validity. Table 5 suggested a possible basis for the lack of confirmation of the hypothesis. Since vocational environments of the subjects were coded from available classification schemes, and the majority of the available codes were consistent, it could be assumed that combined person-environment codes would be more consistent than inconsistent. Inspection of consistency levels two and four in Table 5, showed that 85 per cent of the subjects had consistent environmental codes, thus support was provided for the assumption. Consequently, the classification of vocational environments

TABLE 5

FREQUENCY OF PERSONALITY DIMENSION  
LEVELS IN THE SAMPLE

Dimension Levels (1-4 lowest to highest)	Personality Dimensions		
	Congruency	Consistency	Homogeneity
	Percentages of Dimension Levels		
1	49.5	4.0	7.0
2	12.0	26.5	49.0
3	26.0	10.5	38.5
4	12.5	59.0	5.5

Note: The figures represent the percentage of the total subjects (N = 200 for each dimension), by level. Applying levels 3 and 4 as a criterion for differentiating consistent, congruent, or homogeneous person-environment personality patterns (as opposed to levels 1 and 2 for incongruent, inconsistent, and heterogeneous patterns), the following percentages were obtained: Congruent patterns = 38.5%; Consistent patterns = 69.5%; Homogeneous patterns = 44.0%.

could have distorted the consistency-work adjustment relationship in the direction toward higher expected work adjustment outcomes. Inspection of congruency and consistency levels (see Table 5), suggested that higher work adjustment outcomes would not have been anticipated, as interpreted from Holland's congruency and consistency hypotheses. Thirty-two and one-half per cent of all subjects with the highest consistency level for their person-environment patterns also had the lowest level of con-

gruency for their patterns. In summary, the results of the consistency data indicated that Holland's consistency hypothesis did not hold for the subjects in the present study; however, the relationship with work adjustment outcomes might have been inadequately assessed, due to the classification schemes used to code vocational environments.

Hypothesis three. The homogeneity hypothesis also had face validity, but no specific studies of this personality dimension and its relation to work adjustment outcomes were reported in the literature. Some limited support was found for the homogeneity hypothesis, but overall confirmation was not obtained for the hypotheses relating to the three personality dimensions. One factor which might have contributed to this lack of confirmation could have derived from the subjects in the sample working in many different occupations. To illustrate, Holland (1966b) hypothesized that "The chief effect of pairing a homogeneous type and a homogeneous environment is to make the expected outcomes even more likely [p. 76]." However, in the present study, the coding of the homogeneity levels was limited to personality types and did not include the environmental models. Determination of the homogeneity levels of the vocational environments of the subjects would have required the personality typing of a sample of subjects from each of their work settings; a task limited to the study of individual occupations.

Hypothesis four. Multiple correlations were also computed to test whether or not the combining of the dimensions would reflect any significant relationships with MSQ and MSS scores. These tests failed to provide confirmation for hypothesis four (see Table 4). This finding would be expected, due to the lack of confirmation for the hypothesized relation of the separate dimensions and their associated work adjustment measures.

Hypothesis five. It was hypothesized that subjects with psychological disabilities would reflect a lower relationship between their dimension levels and work adjustment measures than subjects with other disabilities. Since support for the first four hypotheses was not found, the lack of confirmation for hypothesis five was to be expected. The evidence suggestive of a possible negative relationship between homogeneity dimension levels and work adjustment scores (see Table 4) was not expected. The only support for any of the hypotheses was a negative correlation between levels of homogeneity and MSQ scores for male subjects with psychological disabilities ( $p < .05$ ). In addition, the female psychological subjects' correlation between homogeneity levels and MSQ scores approximated significance ( $p < .1$ ). These findings provided very limited support for hypothesis five for the homogeneity dimension only, and that in a negative direction. From these findings

it might be concluded that the VPI profiles for psychological subjects were more heterogeneous than for other subjects, and that there was a trend for the scores of psychological subjects to be inversely related to levels of satisfaction with their jobs. These findings might have been due to more scattered, and less directional, interests of the psychological subjects; and to job insecurity, which could have elevated their reported job satisfaction (MSQ scores).

#### Tests of Statistical Assumptions

Personality dimensions. It was assumed that dimension levels possessed ordinal-scale properties, and that the dimensions were independent. This resulted in the selection of appropriate nonparametric statistics.

Spearman rank correlation coefficients (Siegal, 1956) were computed for the dimension levels (congruency with consistency, congruency with homogeneity, and consistency with homogeneity), and were sub-divided into four groups (see Table 6). Three of the twelve correlations proved to be statistically significant, as follows:

(a) consistency with homogeneity for males with other disabilities,  $p < .05$  ( $r_s = .213$ ); (b) congruency with homogeneity for males with psychological disabilities,  $p < .05$  ( $r_s = .583$ ); and (c) congruency with consistency

TABLE 6

## INTERCORRELATIONS OF PERSONALITY DIMENSIONS

Dimensions by Sex and Disability Variables	N	df	r <sub>s</sub>
<b>Congruency-Consistency</b>			
Males - psychological	13	11	.091
Males - other	111	109	.061**
Females - psychological	18	16	-.702**
Females - other	58	56	-.155
<b>Congruency-Homogeneity</b>			
Males - psychological	13	11	.583*
Males - other	111	109	-.072
Females - psychological	18	16	-.395
Females - other	58	56	-.056
<b>Consistency-Homogeneity</b>			
Males - psychological	13	11	.371*
Males - other	111	109	.213*
Females - psychological	18	16	.167
Females - other	58	56	-.091

Note: Correlations are Spearman rank correlation coefficients computed from levels of the dimensions. Levels of statistical significance were determined from a Table of Critical Values of t (Siegal, 1956).

\*p < .05

\*\*p < .01

for females with psychological disabilities,  $p < .01$  ( $r_s = -.702$ ). The correlation of congruency with homogeneity for females with psychological disabilities closely approximated significance at the .05 level ( $r_s = -.395$ ). These findings did not challenge the assumption of independence of the dimensions, since the N was small for two of

the three significant correlations; and six of the twelve correlations were in a negative direction, which created an offsetting influence on the positive correlations. Consequently, the overall correlations among the three dimensions were not significant, which confirmed the assumption of their independence.

The congruence consistency-correlations noted from Table 6 revealed an inverse relationship for the female subjects with psychological disabilities ( $r_S = -.702$ ), and for females with other disabilities ( $r_S = -.155$ ). This inverse relationship was also apparent in Table 5, where an analysis of the frequency of the dimension levels was conducted from a count of the levels, and expressed as percentages of the total sample. Table 5 revealed that the highest consistency level occurred most frequently with the lowest level of congruency (32.5 per cent of the subjects possessed this combination of levels). Fifty-nine per cent of the subjects had both consistent personality patterns and worked in consistent environments; 49.5 per cent of the subjects, contrariwise, had personality patterns incongruent with their environments. It might be concluded further that the two dimensions not only measured different variables for the males, but they bore an inverse relationship for the female subjects in the sample. The

females had more consistent personality and environmental codes than did the males, but they were employed in occupations more incongruent with their personality types. This finding appeared to be related to females with psychological disabilities, since the congruence-consistency correlation for them achieved statistical significance at the .01 level ( $r_s = -.702$ ). Thus, it appeared that the largest proportion of the variance derived from the female subjects with psychological disabilities.

Work adjustment measures. MSQ and MSS scores were assumed to be independent measures of work adjustment. A Spearman rank correlation coefficient (Siegal, 1956) was computed to test the independence of general satisfaction (MSQ scores) and general satisfactoriness (MSS scores). The correlation was significant at the .01 level ( $r_s = .266$ ), and indicated that five per cent of the variance was common to the general satisfaction and general satisfactoriness scales as used in the sample. Support for the independence of the general satisfaction and general satisfactoriness scales was not found; however, the small amount (5 per cent) of the total variance common to the two scales was not considered important to the purposes of the study, since each of these criterion variables represented one half of the total assessment of work adjustment. The difference in findings might be attributed to the atypicality of the

present study's sample of rehabilitants, as opposed to the Weiss, et al. (1966) sample used to test the independence of general satisfaction and general satisfactoriness.

### The Population

Although the group of rehabilitants originally selected for study was sufficiently large (3,300) to provide for adequate sampling, the selection criteria reduced this initial group from Fiscal Year 1967 to a population of 2,336. The responses from the rehabilitants in the population, to requests for participation, produced additional shrinkage (see Chapter II), with the result that only 329 subjects (14 per cent of the population) consented to participate in the study. Once having consented to participate, further loss in potential subjects occurred through failure of the subjects, or their employers, to return or adequately complete the instruments mailed to them. The final sample (200) represented only 11.7 per cent of the population. These subjects thus represented a biased sample of the population. Several conclusions about the population thus appeared relevant:

1. As a population, the rehabilitants were itinerant. A total of 570 rehabilitants (24.4 per cent of the population) could not be located by mail.

2. Another 39.3 per cent of the population failed to respond to the initial request for participation, or to a follow-up letter. These "rehabilitated" individuals seemed to desire no further involvement with Vocational Rehabilitation.

3. An additional 12.6 per cent of the population were sufficiently motivated to respond to an appeal for their cooperation in the study, but indicated that they did not want to participate.

In summary, 76.3 per cent of the population was unavailable for study. The sample was, therefore, not random. It was biased to the extent that it did not contain a true random sampling of rehabilitants from the population. This biased sample was not considered a detriment to the study, since the purposes of the study involved the assessment of work adjustment for employed rehabilitants. Inferences about the population were limited to rehabilitants having characteristics that closely matched those of the subjects in the study. These data about the rehabilitation population as a whole appeared to suggest that they had less personal stability than did the subjects in the study, i.e., they were more itinerant, identified less with their communities (mail not deliverable), and felt less obligation to cooperate with the social institution which had rendered them assistance.

Identification of some possible sources of variance, which might have influenced the results of the tests of the hypotheses, was attempted. Comparisons were made of categories of participation in the population, with four pairs of sex and disability classification variables. Partitioned chi squares (Siegal, 1956) were used for this purpose. The data for these comparisons appear in Table 7.

A discussion of the categories of subjects in the population, derived from the results of the partitioned chi squares (see Table 7), and some possible explanations for the results follow:

1. The partitioned sex comparison of the unemployed category of subjects versus the combined categories of non-participants (mail-not-deliverable, no-response, and by-response) plus employed participants revealed a significantly larger ratio of females to males among the unemployed ( $p < .05$ ). All other partitioned sex comparisons failed to reach the .05 level of significance. A possibility for this finding might have been that the unemployed females in the sample were less defensive about participation in the study than the females in the other comparison categories, since they were not employed and possibly did not anticipate employment.

TABLE 7

COMPARISONS OF CATEGORIES IN THE POPULATION BY PARTITIONED CHI SQUARES

Variables	N	Non-Participants			Participants			Total Chi Square
		Mail Deliver- able	No Re- sponse(2 mailings)	By Re- sponse	Em- ployed	Unem- ployed	Do-Not- Contact- Employer	
Males	2268	371	604	176	205	44	44	9.38
Females		199	325	118	124	40	18	
Partitioned Chi Squares		.00	2.85	.43	4.64*	1.47		
Psychological Disabilities	2268	212	195	49	44	18	12	90.23***
Other Disabilities		358	734	245	285	66	50	
Partitioned Chi Squares		51.79***	15.09***	22.57***	.21	.57		
Males- Psychological	530	144	116	28	19	9	5	13.35**
Females- Psychological		68	79	21	25	9	7	
Partitioned Chi Squares		3.03	.83	6.70**	.95	1.84		
Males-Other Disabilities	1738	227	488	148	186	35	39	11.09*
Females-Other Disabilities		131	246	97	99	31	11	
Partitioned Chi Squares		1.00	2.25	.05	3.76	4.03*		

Note: Degrees of freedom for each total chi square = 5.

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

2. Partitioned disability comparisons (psychological and other) resulted in a significantly larger ratio of other disabilities ( $p < .001$ ) for these categories: (a) no-response than for mail-not-deliverable; (b) by-response than for mail-not-deliverable, combined with no-response; and (c) employed than for mail-not-deliverable, no-response, and by-response categories combined. Additional partitioning of the disability categories was not significant at the .05 level. From these results it appeared that the subjects with other disabilities were significantly: (a) more reticent about answering appeals to participate in the study; (b) more inclined to avoid participating when they did respond; and (c) more agreeable to participate if they were employed. One explanation for these data might have been the possibility that unemployed subjects with other disabilities (physical handicaps) were more conscious of being different than other rehabilitants, and avoided discussing or revealing attitudes about themselves. If they were employed, however, it would seem that they had rejected attitudes of being different (better self concept), as inferred from their willingness to then talk about their work adjustment attitudes.

3. The partitioned psychological disabilities, by sex, produced only one significant comparison. The ratio

of females to males in the employed category versus the combined non-participant categories (mail-not-deliverable, no-response, and by-response) was significantly larger than the combined ratio ( $p < .01$ ). This finding might have been due simply to the fact that a larger ratio of females to males, among the employed rehabilitants, were classified with psychological disabilities. It also appeared reasonable to conclude that these same females would have been prone to experience family dislocations, which would have resulted in their seeking rehabilitative services to qualify for employment. Females with physical handicaps appeared less likely to seek employment, by reason of breakups of their family units and the sheltered role usually assigned to physically handicapped females.

4. The only partitioned comparison for other disabilities, by sex, that proved significant was in the do-not-contact-employer category versus the combination of all other categories. A significantly larger ratio of males to females ( $p < .05$ ) appeared in the do-not-contact-employer category. Physically handicapped males in the sample might have been less secure and might have had less confidence about their employer relationships, thus affecting this result. Females, in comparison, might not have been as sensitive to the nuances of effective employer-employee relationships, since their traditional role was not that of the primary wage-earner of their families.

In summary, the findings from the study of the categories of participation in the population suggested the following: (a) a larger proportion of female rehabilitants, than the males, might be expected to be unemployed; (b) among the employed rehabilitants, a proportionately larger share of females than males will have psychological disabilities; (c) male rehabilitants appeared to be less secure than females, in their employer relationships, irrespective of their disability classification. The present investigator assumed that the subjects with psychological disabilities would have less stability than those with other disabilities. The findings, however, suggested that the physically handicapped rather than the psychologically handicapped rehabilitants were the more reticent and the less cooperative if they were unemployed, but more cooperative when employed.

#### The Sample

The sample ( $N = 200$ ) as previously discussed, was atypical of the population from which it was drawn. The small group (59) of unemployed rehabilitants studied did not represent an effort to overcome the atypicality of the sample, but was treated as a special sample. Levels of congruency and consistency could not be determined for unemployed subjects, nor could work adjustment score be

obtained for this group. However, unemployed subjects could be compared with employed subjects in terms of their homogeneity levels.

Chi square comparisons (Siegal, 1956) were made of the categories of subjects investigated in the sample. The results of these comparisons appear in Table 8. The ratio of females to males in the psychological disability category was significantly larger (.05 level) than the ratio for other disabilities. No significant differences were found in the three comparisons of employment versus sex, or versus disability categories. It was noted that the ratio of females to males in the psychological disability category (see Table 7) was also significantly greater in the population (N = 2,336) when compared with the ratio of other categories of participation. A logical conclusion to be drawn from these data could be that sex differences for the psychological disability variable might have been an important factor which helped to explain the lack of confirmation for the hypotheses, particularly for hypothesis five.

Since the subjects studied represented a biased sample of rehabilitants (they were employed; they agreed to participate in the study and to have their employers participate; they could be located by mail; and they com-

TABLE 8

CHI SQUARE<sup>a</sup> COMPARISONS OF CATEGORIES OF EMPLOYMENT

Disability	Sex (N = 200)		
	Male	Female	
Psychological	14	18	$\chi^2 = 5.39^*$
Other	110	58	

  

Disability	Employment (N = 200)		
	Same-Job	Different Job	
Psychological	21	11	$\chi^2 = .01$
Other	109	59	

  

Sex	Employment (N = 200)		
	Same-Job	Different-Job	
Male	83	41	$\chi^2 = .54$
Female	47	29	

  

Disability	Employment (N = 259)		
	Employed	Unemployed	
Psychological	32	9	$\chi^2 = .02$
Other	168	50	

<sup>a</sup>df = 1.

\*p < .05.

pleted and returned their test instruments), it was reasonably assumed that the subjects constituted a favorable sample of the population for testing the hypotheses of this study. In addition, support has been found for the ability

of the VPI to significantly differentiate a variety of criterion groups, such as psychiatric patients, TB patients, psychopaths, some specific college student samples, and a variety of employed adults (Holland, 1965). However, the results of this study failed to reveal any statistically significant relationships between Holland's personality dimension constructs (congruency, consistency, and homogeneity) and work adjustment outcomes (satisfaction and satisfactoriness).

Holland (1966b) pointed out that an exploration of the usefulness of his theory had been only partially undertaken. Few, if any, studies reported in the literature explored the applicability of the theory to subjects divided by sex, who were selected from a variety of occupations, who showed diverse disabilities (psychological and other), and who were selected from lower-level socioeconomic groups. Such subjects would normally be expected among vocational rehabilitants. Consequently, a revision of the VPI, or an establishment of separate forms of the VPI, would appear warranted. For example, the present investigator has found, when administering the VPI, that female clients often complained that the occupational titles did not appear applicable to them; and that vocationally immature clients expressed a lack of familiarity with many of the occupational titles.

Much re-evaluation of Holland's (1966b) theory must necessarily be conducted. Because of its limited application, limited populations studied, and limited confirmation for the proposed hypotheses of the present study, much research would be needed to confirm or to deny this theory. A summary of the findings of the current study, and of its implications for future use and research, will be presented in the final chapter.

## CHAPTER IV

### SUMMARY AND IMPLICATIONS

#### Summary

The purpose of this study was to test several hypotheses derived from Holland's recently revised theory of vocational choice (1966b), by seeking to ascertain the relationships between levels of three of his hypothesized dimensions of person-environment interactions and the work adjustment variables (satisfaction and satisfactoriness) for vocational rehabilitants. Each of Holland's theoretical formulations used in this study were briefly described: (a) congruence, a personality dimension of person-environment interactions which assumed that higher relationships between the codes for personality types and environmental models would be associated with higher vocational achievement (satisfactoriness) and satisfaction; (b) consistency, a personality dimension of person-environment interactions which assumed that if the theoretical and empirical descriptions of the primary personality type overlapped the secondary type, then higher

vocational achievement and satisfaction would result (consistent codes implied psychological integration); and (c) homogeneity, a personality dimension of person-environment interactions which assumed that if personality typing of the person and environment revealed a prominent orientation toward any one of the six personality types or models, then higher vocational achievement and satisfaction of the individual would result.

From these theoretical formulations it was hypothesized that higher levels of each personality dimension (using a scale of one to four, lowest to highest) would be positively related to scores on two work adjustment criterion measures: Minnesota Satisfaction Questionnaire (MSQ) and Minnesota Satisfactoriness Scales (MSS). The instrument used to assess the levels of the three dimensions was Holland's (1965) Vocational Preference Inventory (VPI). A fourth hypothesis stated that higher levels of the combined personality dimensions would be related to successively higher scores on the work adjustment measures, based on the contribution from each of the dimensions. Additionally, it was reasoned that subjects classified with psychological disabilities would be less stable than subjects with other disabilities. Consequently, a fifth hypothesis assumed that subjects with psychological disabilities would exhibit lower relationships between the

levels of their personality dimensions and work adjustment measures than subjects not so classified.

The population for the study was selected from all the clients (3,300) of the Vocational Rehabilitation Division, State Board of Vocational Education, State of Oklahoma, who were classified as "rehabilitated" during Fiscal Year 1967, yielding a population of 2,336 "rehabilitated" clients from which the sample was obtained.

The sample consisted of 200 subjects, who were employed, who agreed to participate in the study (both employer and subject), who could be reached by mail, and who returned their test instruments. A separate sample of 59 subjects was also obtained for the purposes of exploring the differential effects of employment versus unemployment. Each of the employed subjects completed the Holland VPI and the short-form MSQ. Their employers completed the short-form MSS. The sample group of unemployed completed only the VPI.

To test the first three hypotheses, Spearman rank correlation coefficients were computed to determine the relationships between each of the three personality dimensions and the work adjustment measures (MSQ and MSS). Correlations were separately computed for males with psychological disabilities, males with other disabilities, females with psychological disabilities, and females with other

disabilities. Of the 24 correlation coefficients computed, only one significant relationship (.05 level) was found, i.e., the homogeneity dimension levels of males with psychological disabilities were negatively correlated with their MSQ scores. When the combined levels of the congruency, consistency, and homogeneity dimensions were similarly compared with their work adjustment measures (Hypothesis four), the multiple correlation coefficients (eight in all) revealed no statistically significant relationships (.05 level). Testing for the fifth hypothesis was accomplished by partitioning the subjects by sex, and by disability variables (see Table 4); however, the fifth hypothesis was not confirmed. The lack of confirmation was further supported, since the only significant relationship with work adjustment measures was for subjects with psychological disabilities (lower relationships were hypothesized).

The population was also studied in order to provide data which would assist in the interpretation of the findings. Three categories of non-participants in the population (mail-not-deliverable, no-response, and by-response) and three categories of clients who agreed to participate in the study (employed, unemployed, and do-not-contact-employer) were compared by partitioned chi squares. Four pairs of variables were used for the statistical comparisons (male versus female, psychological versus other dis-

abilities, male versus female psychological disabilities, and male versus female other disabilities). Three of the four comparisons yielded overall statistically significant chi squares (see Table 7), as follows: (a) the ratio of other disabilities to psychological disabilities was greater in three of the five categories ( $p < .001$ ); (b) the ratio of females to males with psychological disabilities was greater in one of the five categories ( $p < .01$ ); and (c) the ratio of males to females with other disabilities was greater in one of the five categories ( $p < .05$ ).

The subjects in this study represented a biased sample of the population (76.3 per cent of the population were unavailable for study). However, the biased sample was considered more stable than the general population, which could be expected to improve the probability of significant test results. However, no overall confirmation was found for the hypotheses proposed in this study.

The sample data were also statistically treated by chi square in contingency tables, in order to determine the differential effects of three variables: sex, disability (psychological and other), employment (same-job versus different-job, and employed versus unemployed). Only the comparison of sex with disability classifications revealed a statistically significant difference between groups (.05 level). The ratio of females to males was

significantly larger for subjects with psychological disabilities than the ratio for other disabilities. This result was also found to hold for the population in the study. The higher ratio of females to males might have explained, in part, the lack of confirmation for the hypotheses, since Holland's theory was not specifically developed for both sexes. As Holland (1966b) stated: "A special but closely related theory for women is desirable, but at this point I have none to offer [p. 13]."

The present study did not provide support for Holland's theoretical constructs: congruency, consistency, and homogeneity. In addition, it must be kept in mind that the sample employed was a select group of rehabilitants, which should have improved the probability of obtaining significant results. At the same time there were some findings that suggested a possible distortion of the relationships between dimensions and work adjustment. First, the relationships with work adjustment outcomes were limited by the available classification schemes used to code the subjects' vocational environments. Secondly, the congruency and consistency dimensions bore an inverse relationship with each other (the highest consistency level was associated with the lowest congruency level). This relationship was concluded to be largely attributable to the female subjects with psychological disabilities. It

was their high consistency levels and low congruency levels that most strongly influenced the inverse effect. Consequently, Holland's congruency and consistency hypotheses appeared to be least applicable to female subjects in the study. Third, the coding of the subjects' homogeneity levels was limited to only their personality types and did not include the environmental models.

It may be that the findings, which suggested a distortion of the relationships between personality dimensions and work adjustment, resulted from the nature of the dimension variables. The dimensions might have been valid theoretical constructs when related to work adjustment of college-level subjects, but failed to hold for rehabilitants with psychological and physical disabilities. It has been the writer's experience that rehabilitants usually appeared vocationally immature and seemed to lack good personal integration. Holland (1966b) hypothesized that consistent codes implied psychological integration. These personality traits would not be conducive to consistent findings in the present study: i.e., high dimension levels, according to Holland's (1966b) theory, would be significantly related to high levels of work adjustment; and low dimension levels would be significantly related to low levels of work adjustment.

Although the findings of this study provided only limited support for meaningful relationships between personality dimensions and work adjustment outcomes, further exploration of these theoretical formulations from Holland's theory would appear promising. However, these relationships do not appear to be presently useful as a placement tool for VR counselors. Osipow (1968) also arrived at this conclusion, when he reviewed Holland's theory of vocational behavior, and stated that ". . . any attempt to derive a mathematical formula predicting occupational level at this stage of development is likely to be premature and may be deceptive as to the level of sophistication of the theory [p. 67]."

#### Implications and Future Research

Vocational counseling. The testing of this study's hypotheses did not provide meaningful results which would assist VR counselors in the more efficient placement of their clients, when viewed from the potential usefulness of predicting work adjustment outcomes from levels of personality dimensions. Further research and development of Holland's theory and the associated VPI scales, it was believed, might ultimately provide the future support for the development of a mathematical formula, applicable to a diverse population such as rehabilitation clients. The

findings from Hypothesis five suggested that VR counselors might expect a trend to exist for subjects with psychological disabilities to have more heterogeneous VPI profiles than the profiles of other subjects. More scattered interests and feelings of job insecurity may have contributed to these results.

Generalizing the findings of this study to rehabilitant populations or specific clients is not feasible. However, vocational counselors and administrators may draw some cautious inferences about clients with other disabilities, as opposed to clients with psychological disabilities. The results suggest that those with other disabilities are: (a) more reticent about participating in a study that will reveal attitudes about themselves or their jobs; (b) more inclined to be uncooperative if they do respond to an appeal to participate; and (c) more cooperative if they are employed. It may be further anticipated that: (a) the ratio of females to males will be larger in the unemployed category than in non-participant and employed categories; (b) among the clients with psychological disabilities, the ratio of females to males will be larger in the employed category than in non-participant categories; and (c) among clients with other disabilities, the ratio of males to females in the do-not-contact-employer category will be larger than in other categories, thus suggesting less job security.

The findings from the study of the sample provide additional implications for vocational counselors and administrators, which should be viewed in terms of the limitations imposed by the selection criteria for the sample: (a) it may be anticipated that the ratio of females to males will be larger among clients with psychological disabilities than in other disabilities; (b) no significant differences may be expected between clients with psychological disabilities and those with other disabilities when compared with their employment status (remain on the same job or change jobs); and (c) no significant differences may be anticipated between clients with psychological disabilities and those with other disabilities when compared with employment or unemployment.

Suggestions for future research. The sample used in this study of rehabilitants, in terms of disability and sex variables, does not provide sufficiently meaningful reference groups. Norms for rehabilitants confined to more finite groups (high school students, ex-convicts, former in-patients of mental hospitals, clients with psychological disabilities but never hospitalized, high school dropouts, clients with neurological impairments, the chronically unemployed, and other specific groups with which VR counselors generally work) would be more meaningful. Such groups could also be divided into meaningful

samples by sex and type of disability. Holland (1965) suggests the establishment of local norms, and then use of the normative samples in the VPI Manual (Sixth Revision) as comparison groups. However, the data for the 18 reference groups in the normative samples were based on studies involving the use of all eleven scales of the VPI, and provide means and standard deviations of the raw scores for those scales. If local norms, based on various distinct groups of rehabilitants, were similarly established, and correlations with work adjustment measures such as the MSQ and MSS were made, significant data might be derived that would encourage follow-up predictive validity studies for VR clients. If such studies were productive, cutting scores could also be established for the more discriminating scales, to assist VR counselors in predicting levels of work adjustment for their clients.

It may be fruitful to explore the advantages of using the first three digits of personality and environmental codes (primary, secondary, and tertiary), in lieu of two as used in the present study. Eight levels of the dimensions, rather than four, would then be available to assess the relationships between personality dimensions and work adjustment.

Another group of rehabilitants which should be studied is that large segment of individuals (76.3 per

cent of the population in the present study) who cannot be reached by mail, who will not respond to their mail, or who will not cooperate if they do respond. These individuals are an unknown entity at present. Personal contact may prove to be the only means by which such individuals can be included in any future study.

Much of Holland's early work on the development of his theory evolved from the study of National Merit Scholarship finalists and college-level students. Replication of the present study with a random sample from a college population would provide another means to evaluate the feasibility of using dimension levels as a predictive device for levels of work adjustment. Comparison of the results from such a study with the present study could result in meaningful data being made available.

In summary, the results of the present study suggest to this investigator that further exploration of Holland's theory, and possible revision of some of the theoretical models for the personality types and the vocational preferences for the types, is indicated. Further tests of the theory's applicability to such variables as sex, lower-level occupations, diverse disabilities (psychological and other), and lower-level socio-economic groups, as can be expected among vocational rehabilitants, are some areas suggested for future research. The estab-

lishment of separate forms of the VPI for major groupings of individuals by sex, disability classification, and socio-economic level would be one approach whereby testing needs for the many different groups of clients might be satisfied.

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## APPENDIX I

307 Will Rogers Memorial Office Building  
 State Capitol Complex  
 Oklahoma City, Oklahoma 73105

April 22, 1968

Client Code No. \_\_\_\_\_

Dear Vocational Rehabilitation Client:

Since our last contact with you, undoubtedly you have gained valuable experience on your job and formed some important opinions. Your opinions very likely will include some ideas of how satisfied you have been with your employment.

We would like to ask if you will be so kind as to share your ideas and opinions about your job with us, so that we may hopefully better serve our future clients. In order to assist us in this study, would you please indicate your answer to each of the following questions: \_\_

1. Are you employed at present? Yes \_\_\_ No \_\_\_
2. If so, are you employed on the same or a different job than the one held when we were last in contact with you, or when we placed you into employment? Same \_\_\_ Different \_\_\_
3. Would you be willing to participate in the study? Yes \_\_\_ No \_\_\_
4. If you are willing, would you consent to your present employer being contacted directly about your work performance? Yes \_\_\_ No \_\_\_

Please be assured that if you participate, the contact with your employer will be discreet, confidential, and will involve five minutes or less of his time. You may also be assured that all information furnished by you will be held in the strictest confidence. A Client Code number will be used instead of your name in order to protect your privacy.

## APPENDIX I -- Continued

Your participating is most urgent whether you are employed or not; however, if you consent to participate in our study and are employed, please provide the following information:

---

(Present employer's name or I'm unemployed)

---

(Employer's address)

---

(Brief description of your duties)

---

(Title of your job)

---

(Kind of work performed in your shop, department or section)

---

A self-addressed envelope is enclosed for you to return this form with the requested information to our office. Upon receipt of the form, and if you have expressed a willingness to participate in the study, we will send you two questionnaires to fill out and return to our office. These two questionnaires will take about 15-20 minutes of your time to complete. Your participation will not only be invaluable to the study; but will be greatly appreciated.

Sincerely yours,

Harold D. Viaille, Ph.D.  
Chief of Program Development

HDV:GB:tw

Enc. 1

## APPENDIX II

307 Will Rogers Building  
 State Capitol Complex  
 Oklahoma City, Oklahoma 73105

May 27, 1968

Client No. \_\_\_\_\_

Dear Vocational Rehabilitation Client:

Several weeks ago we wrote you requesting your participation in a study. In that letter we asked you to share with us your employment experience since our last contact with you. Your participation is still most urgently needed and will be much appreciated.

We would like to ask if you will be so kind as to share your ideas and opinions about your employment with us, so that we may hopefully better serve our future clients. In order to assist us in this study, would you please indicate your answer to each of the following questions:

1. Are you employed at present?                      Yes \_\_\_ No \_\_\_
2. If so, are you employed on the same or a different job than the one held when we were last in contact with you, or when we placed you into employment?                      Same \_\_\_ Different \_\_\_
3. Would you be willing to participate in the study?                      Yes \_\_\_ No \_\_\_
4. If you are willing, would you consent to your present employer being contacted directly about your work performance?                      Yes \_\_\_ No \_\_\_

Please be assured that if you participate, the contact with your employer will be discreet, confidential, and will involve five minutes or less of his time. You may also be assured that all information furnished by you will be held in the strictest confidence. A Client Code number will be used instead of your name in order to protect your privacy.

## APPENDIX II -- Continued

Your participation is most urgent whether you are employed or not; however, if you consent to participate in our study and are employed, please provide the following information:

---

(Present employer's name or I'm unemployed)

---

(Employer's address)

---

(Brief description of your duties)

---

(Name of immediate supervisor)

---

(Title of your job)

---

(Kind of work performed in your shop, department or section)

---

A self-addressed envelope is enclosed for you to return this form with the requested information to our office. Upon receipt of the form, and if you have expressed a willingness to participate in the study, we will send you two questionnaires to fill out and return to our office. These two questionnaires will take about 15-20 minutes of your time to complete. Your participation will not only be invaluable to the study, but will be greatly appreciated.

Sincerely yours,

Harold D. Viaille, Ph.D.  
Chief of Program Development

HDV:GB:hjr

Enc. 1

## APPENDIX III

Client Code No. \_\_\_\_\_

## MINNESOTA SATISFACTION QUESTIONNAIRE

The purpose of this questionnaire is to give you a chance to tell how you feel about your present job, what things you are satisfied with and what things you are not satisfied with.

On the basis of your answers and those of thousands of other people throughout the nation, we hope to get a better understanding of the things people like and dislike about their jobs.

On the back of this sheet you will find statements about your present job.

\_\_\_\_\_ Read each statement carefully.

\_\_\_\_\_ Decide how satisfied you feel about the aspect of your job described by the statement.

Keeping the statement in mind:

\_\_\_\_\_ If you feel that your job gives you more than you expected, check the box under "VS" (Very Satisfied);

\_\_\_\_\_ if you feel that your job gives you what you expected, check the box under "S" (Satisfied);

\_\_\_\_\_ if you cannot make up your mind whether or not the job gives you what you expected, check the box under "N" (Neither Satisfied nor Dissatisfied);

\_\_\_\_\_ if you feel that your job gives you less than you expected, check the box under "DS" (Dissatisfied).

\_\_\_\_\_ if you feel that your job gives you much less than you expected, check the box under "VDS" (Very Dissatisfied).

Remember: Keep the statement in mind when deciding how satisfied you feel about that aspect of your job.

Do this for all statements. Please answer every item.

Be frank and honest. Give a true picture of your feelings about your present job.

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## APPENDIX III -- Continued

Ask yourself: How satisfied am I with this aspect of my job?

VS means I am very satisfied with this aspect of my job.

S means I am satisfied with this aspect of my job.

N means I can't decide whether I am satisfied or not with this aspect of my job.

DS means I am dissatisfied with this aspect of my job.

VDS means I am very dissatisfied with this aspect of my job.

ON MY PRESENT JOB, THIS IS HOW I FEEL					
ABOUT:	VDS	DS	N	S	VS
1. Being able to keep busy all the time.....	—	—	—	—	—
2. The chance to work alone of the job.....	—	—	—	—	—
3. The chance to do different things from time to time.....	—	—	—	—	—
4. The chance to be "somebody" in the community.....	—	—	—	—	—
5. The way my boss handles his men.....	—	—	—	—	—
6. The competence of my supervisor in making decisions.....	—	—	—	—	—
7. Being able to do things that don't go against my conscience.....	—	—	—	—	—
8. The way my job provides for steady employment.....	—	—	—	—	—
9. The chance to do things for people..	—	—	—	—	—
10. The chance to tell people what to do.....	—	—	—	—	—
11. The chance to do something that makes use of my abilities.....	—	—	—	—	—
12. The way company policies are put into practice.....	—	—	—	—	—
13. My pay and the amount of work I do.....	—	—	—	—	—
14. The chances for advancement on this job.....	—	—	—	—	—
15. The freedom to use my own judgment.....	—	—	—	—	—
16. The chance to try my own methods of doing the job.....	—	—	—	—	—
17. The working conditions.....	—	—	—	—	—
18. The way my co-workers get along with each other.....	—	—	—	—	—
19. The praise I get for doing a good job.....	—	—	—	—	—
20. The feeling of accomplishment I get from the job.....	—	—	—	—	—

APPENDIX IV

307 Will Rogers Building  
State Capitol Complex  
Oklahoma City, Oklahoma 73105

May 29, 1968

Client No. \_\_\_\_\_

Dear Vocational Rehabilitation Client:

Please permit us to first thank you for your willingness to participate in our study.

As we stated earlier in our correspondence, we are enclosing a questionnaire (Vocational Preference Inventory) which will take about 15-20 minutes to complete. Brief instructions for completing the questionnaire are printed on the front cover.

When you have completed the questionnaire, please place it in the enclosed self-addressed envelope and mail it with this letter back to our office.

Again, thank you for your cooperation.

Sincerely yours,

Harold D. Viaille, Ph.D.  
Chief of Program Development

HDV:GB:hjr

Enc. 2

APPENDIX V

Client Code No. \_\_\_\_\_

SATISFACTORINESS QUESTIONNAIRE

Please check the best answer for each question  
Be sure to answer all questions

Compared to others in his work group, how well does he ..	not as well	about the same	better
1. follow company policies and practices?.....	_____	_____	_____
2. accept the direction of his supervisor?.....	_____	_____	_____
3. follow standard work rules and procedures?.....	_____	_____	_____
4. perform tasks requiring repetitive movements?.....	_____	_____	_____
5. accept the responsibility of his job?.....	_____	_____	_____
6. adapt to changes in procedures or methods?.....	_____	_____	_____
7. respect the authority of his supervisor?.....	_____	_____	_____
8. work as a member of a team?....	_____	_____	_____
9. get along with his supervisors?.....	_____	_____	_____
10. perform repetitive tasks?.....	_____	_____	_____
11. get along with his co-workers?.....	_____	_____	_____
12. perform tasks requiring variety and change in methods?.	_____	_____	_____
Compared to others in his work group:	not as good	about the same	better
13. how good is the quality of his work?.....	_____	_____	_____
14. how good is the quantity of his work?.....	_____	_____	_____

APPENDIX V -- Continued

Please check the best answer for each question  
Be sure to answer ALL questions

If you could make the decision, would you...		yes	not sure	no
15.	give him a pay raise?.....	___	___	___
16.	transfer him to a job at a higher level?.....	___	___	___
17.	promote him to a position of more responsibility?.....	___	___	___
Compared to others in his work group, how often does he...			about the	
		less	same	more
18.	come late for work?.....	___	___	___
19.	become overexcited?.....	___	___	___
20.	become upset and unhappy?.....	___	___	___
21.	need disciplinary action?.....	___	___	___
22.	stay absent from work?.....	___	___	___
23.	seem bothered by something?.....	___	___	___
24.	complain about physical ailments?.....	___	___	___
25.	say "odd" things?.....	___	___	___
26.	seem to tire easily?.....	___	___	___
27.	act as if he is not listening when spoken to?.....	___	___	___
28.	wander from subject to subject when talking?.....	___	___	___
29.	Now will you please consider this worker with respect to his over-all competence, the effectiveness with which he performs his job, his proficiency, his general over-all value. Take into account all the elements of successful job performance, such as know- ledge of the job and functions performed, quantity and quality of output, relations with other people (sub- ordinates, equals, superiors), ability to get the work done, intelligence, interest, response to training, and the like. In other words, how closely does he approxi- mate the ideal, the kind of worker you want more of? With all these factors in mind, where would you rank this worker as compared with the other people whom you now have doing the same work? (or, if he is the only one, how does he compare with those who have done the same work in the past?)			

APPENDIX V -- Continued

In the top 1/4.....	_____
In the top half but not among the top 1/4.....	_____
In the bottom half but not among the lowest 1/4.....	_____
In the lowest 1/4.....	_____

Thank you very much for your cooperation

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## APPENDIX VI

307 Will Rogers Building  
State Capitol Complex  
Oklahoma City, Oklahoma 73015

Re:  
Client Code No. \_\_\_\_\_

Dear Mr.

This office is presently engaged in a study to evaluate the effectiveness of our rehabilitation services to our clients. Specifically, we are interested in the employer's evaluation of the work adjustment of our clients, so that we may hopefully provide improved services. We strongly believe that through such improved services, our future clients and their employers, who place their confidence in them, will eventually benefit.

Would you, or the immediate supervisor of the above-named employee, be so kind as to devote no more than five minutes of your time to complete the enclosed Minnesota Satisfactoriness Questionnaire, for your employee. Permission was kindly granted by your employee for us to contact you directly and also provided us with your name and address.

Please be assured that all information furnished by you will be held in the strictest confidence, and that your privacy, as well as that of your employee, will be maintained.

Your participation will be of great help in our study and will be greatly appreciated. A self-addressed envelope has been enclosed for your convenience in returning the Questionnaire.

Sincerely yours,

Harold D. Viaille, Ph.D.  
Chief of Program Development

HDV:GB:

Encs.

APPENDIX VII

Vocational Evaluation, Adjustment  
& Placement Center  
320 N.W. 11th Street  
Oklahoma City, Oklahoma 73105

July 12, 1968

Re: \_\_\_\_\_

Client Code No. \_\_\_\_\_

Dear

Recently a questionnaire was sent to you in response to your employee's consent for us to contact you directly on evaluation of his work adjustment. It was requested that the questionnaire be completed and returned at your earliest convenience.

Would you please make every effort to complete the questionnaire and return it as soon as possible. Your responses are an important contribution to our efforts to render improved services to our clients and will be greatly appreciated.

Sincerely yours,

G. L. Bates  
Project Administrator

lc

## APPENDIX VIII

Work Adjustment Project  
April 23, 1968

Dr. Harold D. Viaille  
Chief of Program Development  
Vocational Rehabilitation Division  
508 Will Rogers Building  
Oklahoma City, Oklahoma 73105

Dear Dr. Viaille:

Enclosed are the scoring weights for use with the Minnesota Satisfactoriness Scales. Factor I is the "promotability/competence" scale; Factor II is the "personal adjustment" scale; and Factor III is the "conformance" scale. The fourth scale represents "general" satisfactoriness. Scale scores are simply the sum of the weights for all items in the scales. These are the integer factor scores referred to on page 56 of monograph XXI.

If you have further questions, please let me know. We look forward to receiving copies of the results of your study.

Sincerely,

David J. Weiss  
Assistant Professor and  
Research Director  
Work Adjustment Project

DJW:bj

Enclosure