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A SYSTEM FOR PREDICTING OUTCOMES OF VOCATIONAL COUNSELING.  
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THE THEORY OF WORK ADJUSTMENT (TWA), WHICH PROVIDES A CONCEPTUAL FRAMEWORK FOR RESEARCH IN WORK ADJUSTMENT, HAS BEEN TESTED, CRITICIZED, AND RECENTLY RESTATED. TWA ASSUMES THAT EACH INDIVIDUAL SEEKS TO ACHIEVE AND MAINTAIN CORRESPONDENCE WITH HIS ENVIRONMENT. CORRESPONDENCE IS DEFINED AS A HARMONIOUS RELATIONSHIP AND MUTUAL SUITABILITY BETWEEN THE INDIVIDUAL AND HIS ENVIRONMENT. IN THE CASE OF WORK, CORRESPONDENCE IS DESCRIBED IN TERMS OF THE INDIVIDUAL FULFILLING THE REQUIREMENTS OF THE WORK ENVIRONMENT, AND THE WORK ENVIRONMENT FULFILLING THE REQUIREMENTS OF THE INDIVIDUAL. THE STABILITY OF THIS CORRESPONDENCE IS MANIFESTED AS JOB TENURE. THE LEVELS OF SATISFACTORINESS AND SATISFACTION (SS), FOR INDIVIDUALS WITH SUBSTANTIAL TENURE IN A SPECIFIC WORK ENVIRONMENT, ESTABLISHES THE LIMITS OF SS FROM WHICH TENURE CAN BE PREDICTED FOR OTHER INDIVIDUALS ONCE THEIR NECESSARILY STABLE WORK PERSONALITIES HAVE BEEN ASSESSED. INSTRUMENTS WERE DEVELOPED TO MEASURE--(1) WORK RELEVANT NEEDS OF INDIVIDUALS, (2) OCCUPATIONAL REINFORCER SYSTEMS OF JOBS, (3) INTERMEDIATE WORK ADJUSTMENT SHORT OF TENURE, AND (4) SATISFACTORINESS SCALES. THE VOCATIONAL COUNSELOR CAN NOW MORE PRECISELY DETERMINE WHAT JOBS ARE MOST LIKELY TO FACILITATE CLIENT SS. A LIST OF THE FORMAL PROPOSITIONS OF TWA ARE INCLUDED. THIS PAPER WAS PRESENTED AT THE AMERICAN PSYCHOLOGICAL ASSOCIATION CONVENTION, WASHINGTON, D.C., SEPTEMBER 5, 1967. (PR)

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Lloyd H. Lofquist  
APA talk  
September 5, 1967

A System for Predicting Outcomes  
of Vocational Counseling

You will note at once that the topic of this presentation differs from the topic of the symposium. I have changed the words "predicting outcomes" to "a system for predicting outcomes", and, more importantly, I have narrowed the focus from "outcomes of counseling" to "outcomes of vocational counseling". The word "counseling", by itself, seems to me to represent such a many-splendored thing, with such diverse approaches, techniques, and possible outcomes, that I find it necessary to add a modifier to the word so that I can conceptualize its goals in an orderly fashion. I realize that you may choose to use no modifiers, or different ones. I choose to focus on the word "vocational", or perhaps "educational-vocational" to specify the orientation of counseling. I think of the goals of educational-vocational counseling as the outcomes of a process called work adjustment.

What I have said thus far should indicate that I am not to be counted as a member of the revolution in counseling. Instead, I would be classified as one of those seeking to revitalize efforts to match men and jobs; I see this as an important and fruitful area of concern for counseling psychology. With the heritage of Parsons, D. G. Paterson, Strong, Viteles, Williamson, Dvorak, and many others, my colleagues and I hope, with Brayfield (1961), that counseling psychologists will establish more solid underpinnings for vocational counseling by conceptualizing and developing a science of vocational or occupational psychology. In any case, the counseling I am talking about is oriented toward facilitating the process of work adjustment.

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There has been much research activity in vocational psychology related to the description, prediction, and facilitation of work adjustment. Much of this research, however, has been done without the conceptual frameworks needed to interpret, to organize, and to integrate research results. The vocational counselor finds that, while he is aided in describing parts of an individual's work personality and some of the characteristics of specific job environments, and can measure some outcomes of experience with work, few of these things seem to be related to each other in any sort of overall framework. He is reduced to guessing, from a number of bits of good data, how work personalities and work environments relate to one another, and what kinds of outcomes can be expected for specific individuals in specific work environments. Although he finds in research results, useful concepts, instruments, and information, he is frustrated because of the paucity of conceptual frameworks.

In an attempt to help fill the need for useful conceptual frameworks, my colleagues, Drs. George England, Rene' Dawis, and I published a Theory of Work Adjustment (1964). This theory provided a conceptual framework for the continuing research program in work adjustment in the Industrial Relations Center at the University of Minnesota. In the past three years we have developed instruments for measuring variables in the theory, tested some of its propositions, received suggestions and criticisms from colleagues, and recently Dr. Rene' Dawis and I have prepared a restatement of the theory. Let me state the Theory of Work Adjustment for you in abbreviated form. Its implications for the prediction of outcomes of vocational counseling and for counseling practice, will, I hope, become obvious.

Since I have a limited amount of time I cannot state the theory in formal terms. To facilitate following this brief and rapid presentation, I have listed the main ideas of the Theory of Work Adjustment in a handout. You also will find there a list of the formal propositions of the theory, which I will not present orally at this time.

### A Theory of Work Adjustment

The Theory of Work Adjustment is based on the concept of correspondence between individual and environment. Correspondence between an individual and his environment implies conditions that can be described as: a harmonious relationship between individual and environment and suitability of the individual to the environment and of the environment to the individual. Correspondence, then, is a relationship in which the individual and the environment are corresponsive, i.e., mutually responsive. The individual brings into this relationship his requirements of the environment; the environment likewise has its requirements of the individual. In order to survive, i.e., exist, in an environment, the individual must achieve some degree of correspondence.

It is a basic assumption of the Theory of Work Adjustment that each individual seeks to achieve and maintain correspondence with his environment. Achieving and maintaining correspondence with the environment are basic motives of human behavior.

There are several kinds of environments, e.g., home, school, work, to which an individual must relate. Work represents a major environment to which most individuals must relate.

The individual brings certain skills to the work environment. The environment provides certain rewards (e.g., wages, prestige, personal

relationships) to the individual. The individual's skills enable him to respond to the requirements of the work environment. The rewards of the work environment enable it to "respond" to the requirements of the individual. In the case of work, then, correspondence can be described in terms of the individual fulfilling the requirements of the work environment, and the work environment fulfilling the requirements of the individual.

When an individual enters a work environment for the first time, his behavior is directed toward fulfilling its requirements. He also experiences the rewards of the work environment. If he finds a correspondent relationship between himself and the environment, he seeks to maintain it. If he does not, he seeks to establish correspondence, or, failing in this, to leave the work environment. There are many different kinds of work environments, many different kinds of individuals, and each environment-individual relationship is idiosyncratic. In many cases, the initial relationship is not correspondent. In addition, both individuals and work environments are constantly changing. The continuous and dynamic process by which the individual seeks to achieve and maintain correspondence with his work environment is called work adjustment.

The achievement of minimal correspondence enables an individual to remain in a work environment. Remaining in the work environment, in turn, allows the individual to achieve more optimal correspondence and to stabilize the correspondent relationship. This stability of the correspondence between the individual and the work environment is manifested as tenure in the job.

As correspondence increases, the probability of tenure, i.e., remaining on the job, increases. In addition, as correspondence increases,

the projected length of tenure increases. Conversely, as correspondence decreases, both the probability of remaining on the job and the projected length of tenure decrease. Tenure is the most basic indicator of correspondence. It can be said, therefore, that tenure is a function of correspondence between the individual and his work environment.

From the basic concepts of correspondence and tenure it is possible to develop the concepts of satisfactoriness and satisfaction. If the individual has substantial tenure, it can be inferred that he has been fulfilling the requirements of the work environment and that the work environment has been fulfilling his requirements. If the individual fulfills the requirements of the work environment, he is defined as a satisfactory worker. If the work environment fulfills the requirements of the individual, he is defined as a satisfied worker. Satisfactoriness and satisfaction indicate the correspondence between the individual and his work environment. Satisfactoriness and satisfaction, then, are basic indicators of the degree of success an individual has achieved in maintaining correspondence between himself and his work environment. Satisfactoriness is an external indicator of correspondence, i.e., it is derived or obtained from sources other than the individual worker's own appraisal of his fulfillment of the requirements of the work environment. Satisfaction is an internal indicator of correspondence, i.e., it represents the individual worker's appraisal of the extent to which the work environment fulfills his requirements.

With the additional concepts of satisfactoriness and satisfaction it is possible to establish a methodology for predicting tenure.

Satisfactoriness and satisfaction can fluctuate with changes over time in both the individual and the work environment. There are, however,

minimum requirements of both the individual and the work environment, i.e., minimum levels of satisfactoriness required of the individual and of satisfaction required by the individual. These minimum levels are best established by observing many individuals who have remained in a work environment. The levels of satisfactoriness and satisfaction observed for a group of individuals with substantial tenure in a specific work environment establish the limits of satisfactoriness and satisfaction from which tenure can be predicted for other individuals.

Satisfactoriness and satisfaction can be also viewed as outcomes in the work adjustment process at various points in time during an individual's period of employment. In this sense, they are intermediate measures of work adjustment. As intermediate measures of work adjustment, satisfactoriness and satisfaction can be used to establish a methodology for the prediction of work adjustment from the assessment of work personalities in relation to work environments. The work personalities of individuals who fall within the limits of satisfactoriness and satisfaction for which tenure can be predicted, may be inferred to be correspondent with the specific work environment. The different kinds of work personalities for which correspondence is inferred will establish the limits for specific work personality traits necessary for optimal adjustment to the specific work environment. These limits can be used as a basis for estimating the degree of correspondence between other individuals and each specific work environment. Work personality-work environment correspondence, which is estimated in this fashion, can be used to predict satisfactoriness and satisfaction, indicators of correspondence in the work adjustment process.

Since satisfactoriness and satisfaction, taken together, can be used to predict tenure, work personality-work environment correspondence can be used to predict tenure.

In addition to this brief statement of the main ideas in the Theory of Work Adjustment, it is necessary to consider (and, I can only do so very briefly here) the Work Personality and the Work Environment.

The Work Personality of an individual can be described in terms of both its structure and its style. Personality structure is easier to describe because much research has been done on it. The major sets of variables we have focused on in this description are the individual's abilities and his needs. We think of abilities as dimensions of behavior underlying several skills. Needs are reinforcement values expressed as preferences. These abilities and needs go through a process of development and differentiation, as an individual experiences his reinforcement history, until a point of relative stability is reached. The Theory of Work Adjustment is premised on the existence of a relatively stable work personality.

The Work Environment is described in work-personality terms, i.e., in terms of both ability requirements and reinforcer systems. Ability requirements are established from the study of satisfactory workers with substantial tenure. Reinforcer systems are established from the study of satisfied workers with substantial tenure.

This conceptualization of men and jobs and of a methodology for looking at both in terms of the work adjustment process has implications for vocational counseling and for predicting outcomes of vocational counseling. It specifies what is to be assessed in each work personality, i.e., abilities and needs; it specifies what is to be assessed in work environments, i.e., ability requirements and reinforcer systems; and it specifies that both individuals and jobs must be described in the same dimensions.

The General Aptitude Test Battery and the Occupational Ability Patterns illustrate a way of describing individual abilities and the ability requirements of jobs in the same terms. We have developed the Minnesota Importance Questionnaire to describe the work relevant needs of individuals, and we are currently developing Occupational Reinforcer Patterns, in the same need-dimension terms to describe the occupational reinforcer systems of jobs.

The outcome measure of tenure is obviously no problem. For the intermediate measures of work adjustment, we have developed the Minnesota Satisfaction Questionnaire in the same terms as our needs and occupational reinforcer measures, and we have developed the Minnesota Satisfactoriness Scales.

With these instruments we have the kinds of tools needed to assess work personalities, work environments, status in the work adjustment process, and the likelihood of remaining in a particular kind of work. If we are successful in establishing the kinds of work personalities required to achieve work adjustment for a large number of representative jobs, and indications are we can be successful, then the implications for vocational counseling practice seem clear.

The vocational counselor, with his assessment tools, with relevant occupational information in the same terms, and with the help of his computer, properly programmed, will be able to function as an expert in knowing what client possibilities for work are most likely to facilitate the desirable outcomes of the work adjustment process, i.e., satisfactoriness, satisfaction, and tenure. With this kind of expert knowledge he should be better equipped to broaden his client's possibilities, i.e., to identify from the great number of jobs those jobs and job families that

should be considered as "possible" in work-adjustment terms. He should also be able to narrow expertly the number of possible job choices to those most likely to result in success, i.e., most likely to facilitate a stable correspondent situation for his client in a work environment.

How the vocational counselor arranges events so that the client makes the choices in the counseling process for which desirable work adjustment outcomes are predicted is another question. Perhaps the answers to this question are to be found in our extensive literature on communicating, relating, and modifying client behavior. I am, of course, very interested in this important part of counseling, but it is not part of the topic of today's symposium.

A System for Predicting Outcomes  
of Vocational Counseling

Basic Ideas in the Theory of Work Adjustment:

1. Each individual seeks to achieve and maintain correspondence with his environment. Achieving and maintaining correspondence with the environment are basic motives of human behavior.
2. Work represents a major environment to which most individuals must relate.
3. In the case of work, correspondence can be described in terms of the individual fulfilling the requirements of the work environment, and the work environment fulfilling the requirements of the individual.
4. The continuous and dynamic process by which the individual seeks to achieve and maintain correspondence with his work environment is called work adjustment.
5. Stability of the correspondence between the individual and the work environment is manifested as tenure in the job.
6. Tenure is a function of correspondence between the individual and his work environment.
7. Satisfactoriness and satisfaction indicate the correspondence between the individual and his work environment.
8. The levels of satisfactoriness and satisfaction observed for a group of individuals with substantial tenure in a specific work environment establish the limits of satisfactoriness and satisfaction from which tenure can be predicted for other individuals.
9. The work personalities of individuals, who fall within the limits of satisfactoriness and satisfaction for which tenure can be predicted, may be inferred to be correspondent with the specific work environment.

10. Work personality-work environment correspondence can be used to predict satisfactoriness and satisfaction.

11. Work personality-work environment correspondence can be used to predict tenure.

Propositions of the Theory of Work Adjustment:

Proposition I. An individual's work adjustment at any point in time is indicated by his concurrent levels of satisfactoriness and satisfaction.

Proposition II. Satisfactoriness is a function of the correspondence between an individual's abilities and the ability requirements of the work environment, provided that the individual's needs correspond with the reinforcer system of the work environment.

Given Proposition II, these corollaries follow:

Corollary IIa. Knowledge of an individual's abilities and his measured satisfactoriness permits the determination of the effective ability requirements of the work environment.

Corollary IIb. Knowledge of the ability requirements of the work environment and an individual's measured satisfactoriness permits the inference of an individual's abilities.

Proposition III. Satisfaction is a function of the correspondence between the reinforcer system of the work environment and the individual's needs, provided that the individual's abilities correspond with the ability requirements of the work environment.

Given Proposition III, these corollaries follow:

Corollary IIIa. Knowledge of an individual's needs and his measured satisfaction permits the determination of the effective reinforcer system of the work environment for the individual.

Corollary IIIb. Knowledge of the effective reinforcer system of the work environment and an individual's measured satisfaction permits the inference of an individual's needs.

Proposition IV. Satisfaction moderates the functional relationship between satisfactoriness and the correspondence of the individual's abilities with the ability requirements of the work environment.

Proposition V. Satisfactoriness moderates the functional relationship between satisfaction and the correspondence of the reinforcer system of the work environment with the individual's needs.

Proposition VI. The probability of an individual being forced out of the work environment is inversely related to his measured satisfactoriness.

Proposition VII. The probability of an individual voluntarily leaving the work environment is inversely related to his measured satisfaction.

Combining Propositions VI and VII, we have:

Proposition VIII. Tenure is a joint function of satisfactoriness and satisfaction.

Given Propositions II, III, and VIII, this corollary follows:

Corollary VIIIa. Tenure is a function of ability-requirement and need-reinforcer correspondence.

Proposition IX. The correspondence between the individual and the work environment increases as a function of tenure.