12 The Use of Career Choice Process Scales in Counseling Practice

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Determining clients' readiness to cope with the career choice process is the principal assessment task in comprehensive career counseling (Crites, 1974b; Super, 1983). The present chapter begins with an explanation of this assertion. The bulk of the chapter describes three psychometric inventories, each of which is designed to measure different variables in the career choice process. The first scale, the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1976), measures difficulties in making a career choice. The second scale, the Career Development Inventory (Super, Thompson, Lindeman, Jordaan, & Myers, 1981), measures adaptability for mastering career development tasks. The third scale, the Career Maturity Inventory (Crites, 1978b), measures dispositions for vocational decision making. Each scale's construction and development is described, and its validity is considered. How psychologists use the scales in counseling practice is discussed and illustrated with a case example. The chapter concludes with an evaluation of career choice process assessment in contemporary counseling practice.

CAREER CHOICE PROCESS

All too often career counselors have worked with clients only to find that they still cannot make a career choice. Counseling that leaves clients unable to choose a career usually deals with choice content, that is, the occupations that fit a

client's interests and abilities. Counseling methods that match clients' interests and abilities to occupational positions work well for clients who are ready to make decisions. Decisive clients can use the results of interest inventories and aptitude tests to make realistic career choices. However, other clients who are not ready to make decisions encounter difficulty when they try to make career choices. In fact, after discussing test results and occupational information, they become even more confused about their career choices because they have more data than they are ready to use.

Counselors who are sensitive to variations in clients' readiness to make career choices appreciate Crites' (1974b) distinction between the content and the process of vocational decision making. Content refers to which occupation a client should enter and thus focuses on the client's interests and abilities. Process refers to how a client arrives at an occupational choice and thus focuses on the client's decision-making concerns and coping responses. Crites used the analogy of an assembly line to describe the distinction. He likened career choice to the product and vocational decision making to production activities. Crites explicated the distinction between choice content and choice process in refining Super's (1955) model of vocational development. Crites' model charted two content dimensions and two process dimensions in the maturation of vocational decision making during adolescence (see Figure 12.1). One content dimension, wisdom, deals with the development of fit between clients' occupational preferences and their interests, abilities, and experiences. The other content dimension, consistency, deals with the development of stability and coherence in clients' occupational preferences. The two process dimensions in Crites' model deal with the development of attitudes toward and competencies for vocational decision making. The decisional attitudes are dispositions that influence readiness to choose. The competencies refer to the information, comprehension, foresight, and problem solving required for rational decision making.

The classic matching model for career counseling focuses on the content dimensions of career choice (Bell, 1940; Williamson & Darley, 1937). Content-oriented counselors use matching methods, such as aptitude tests, to identify the occupational level at which a client can best function and interest inventories to identify the occupational field in which the client can find the most satisfaction. Counselors who use the matching model and methods in a pedestrian manner act as if all clients are ready to choose an occupation. Their behavior manifests a test-centered rather than client-centered approach and reflects the belief that all clients can be treated in the same way. For example, it is not uncommon for a student seeking vocational guidance at a college counseling center to be scheduled by the receptionist for an interest inventory prior to the initial appointment with a counselor. Nor is it unusual for a counselor to administer an interest inventory to an entire high school class. Although this practice has been effective and efficient for clients who have been ready to make choices, at best it has been ineffective and inefficient for other clients. The piles of scored interest invento-

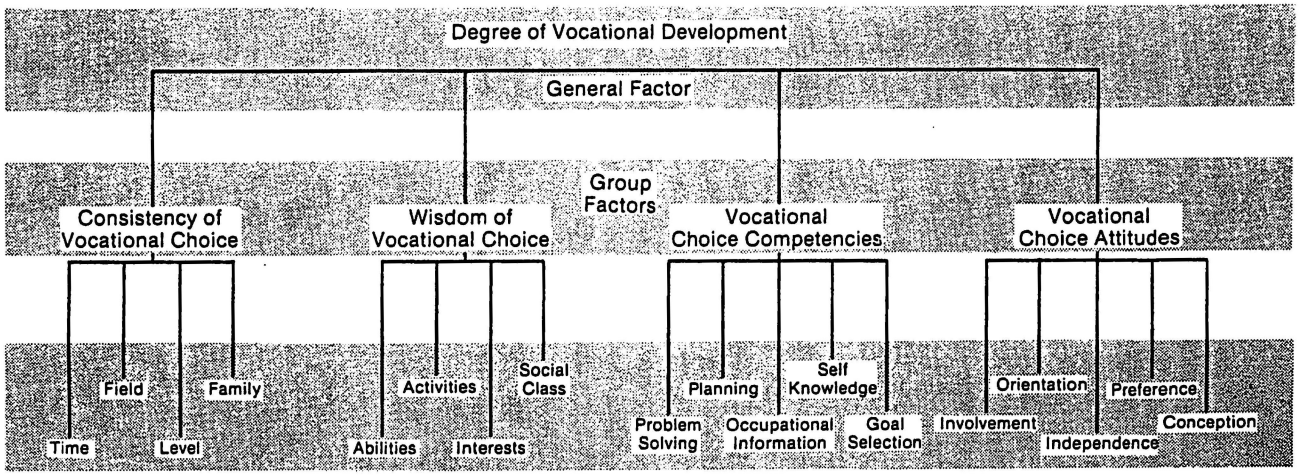

FIG. 12.1. ***Crites' Model of Vocational Maturity in Adolescence***

Note. From "Measurement of vocational maturity in adolescence: I. Attitude Scale of the Vocational Development Inventory" by J. O. Crites, 1965, *Psychological Monographs, 79*, page 5. Copyright 1965 by The American Psychological Association. Reprinted by permission of the publisher and author.

ries taken by clients who never reappeared for an interpretation and the only partial success of group guidance with clients who have different career concerns reflect the inapropriateness of the matching model and methods for clients not ready to benefit from them.

To more effectively use the matching model and its content-oriented methods, experienced counselors view career choice as a process that develops over time. Typically, they conceptualize career choice as an adaptive process through which individuals meet and master social expectations (also called developmental tasks) to choose an occupation in which they can fulfill both the job demands and their own needs. The choice process begins with the task or social expectation that individuals orient themselves to work as a salient life role. This work salience or career orientation produces a "basic readiness" for vocational decision making, a readiness based on foresight, autonomy, and self-esteem (Super, 1983). When career orientation reaches a critical threshold, people meet the task of crystallizing a career preference. Crystallization involves formulating a general preference for occupations within a particular field and at a particular level. The next task that they encounter is to convert their field and level preferences into specific choices. The specification task includes developing certainty about and comfort with one's occupational choice. The final task in the career choice process is to implement one's choice. Implementation as a developmental task means converting a choice into reality by preparing for and securing a position in the chosen occupation.

In practice, counselors may use the task sequence of orientation, crystallization, specification, and implementation to assess clients' degree of development and vary how they use the matching model and methods. To assess clients' progress in the career choice process, counselors identify the tasks that clients have mastered and are concerned about, the clients' difficulties in coping with the task of concern, and the clients' decision-making attitudes and competencies (Savickas, 1984). Based on this process assessment, counselors can decide whether or not to ask clients to respond to interest inventories and aptitude tests. Clients who do not express work salience or a career orientation may not be mature enough for their interests to have meaning for career choice (Super, 1983). They need life experiences or counseling to induce or strengthen foresight, autonomy, and self-esteem, which support the basic readiness for vocational decision making. If counselors do administer interest inventories to underdeveloped clients, then counselors should not interpret the results relative to clients' crystallizing preferences, specifying choices, or implementing plans. Instead, counselors should use the results to orient clients to the occupational structure in the world of work and to prepare them to investigate several career fields and clarify their work values.

In contrast to clients who are not oriented to career choice, clients who are more highly developed can derive personal meaning from the results of interest

inventories and aptitude tests, especially if counselors interpret the scores (data) to them as information (meaning) that eases their coping with the tasks of crystallization, specification, or implementation. In particular, clients who face the crystallization task benefit from information that prompts them to explore several clusters of occupations in related fields and levels. Clients who face the specification task benefit from information that narrows their exploration to occupations in one field and level and helps them choose from among these occupational alternatives. Clients who face the implementation task benefit from information that helps them prepare for and secure positions in their chosen occupations. In short, counselors can assess clients' developmental task mastery and then treat them in accordance with this assessment.

Even the architect of the matching model advised counselors to use developmental assessments to guide differential treatment of clients. In describing the goals of an initial career counseling interview, Parsons advised counselors to classify clients into one of two main classes.

> First, those who have well-developed aptitudes and interest and a practical basis for a reasonable conclusion in respect to the choice of a vocation. Second, boys and girls with so little experience or manifestation of special aptitudes or interests that there is no basis yet for a wise decision. (1909/1967, p. 19)

Following Parsons' example, experienced counselors used interview techniques and clinical judgment to subjectively assess clients' development and select relevant counseling interventions. Early attempts to objectively assess clients' developmental readiness for career choice, such as the "interest maturity" scale of the Strong Vocational Interest Blank (Strong, 1943, Chapter 12), focused on the content of clients' interests. The marginal success of this approach led some counselors to focus on the structure of clients' interests such as "profile homogeneity" (Holland, 1966) or "interest patterning" (Super, 1955) as indices of readiness for decision making. As recently as 1982, Wigington (p. 179) reported a content-derived index of readiness for the Kuder Occupational Interest Survey: "Clients whose highest Occupation score and/or highest College Major score is below 50 would be viewed as less ready to participate in the career decision-making process."

Instead of deriving indices of readiness indirectly from interest inventories, Super (1955) suggested that counselors directly measure variables in the career choice process. After years of research and reflection that identified and defined the important variables in the career choice process, psychometricians devised objective inventories to directly measure these variables. Content-oriented researchers focused on "indecision" as "slow and complex rate of development" (Holland & Nichols, 1964, p. 33). They constructed measures of decidedness and difficulties in vocational decision making such as the Career Decision Scale

(Osipow, Carney, Winer, Yanico, & Koschier, 1976), My Vocational Situation (Holland, Daiger, & Power, 1980), and the Vocational Decision Scale (Jones & Chenery, 1980). In contrast, process-oriented researchers focused on "career maturity" as readiness for vocational decision making (Super & Overstreet, 1960). They constructed measures of vocational development and career choice attitudes and competencies such as the Career Maturity Inventory (Crites, 1978b), the Career Development Inventory (Super, et al., 1981), and Assessment of Career Decision Making (Harren, 1978). Counselors may use these indecision and career maturity scales to directly measure career choice process variables and differentially treat career counseling clients.

Although these scales each measure the career choice process, they differ in one fundamental way. The indecision scales address decision-making difficulties whereas the career maturity scales address decision-making resources. Before comparing and contrasting the indecision and maturity approaches to process measurement, representative measures from each perspective will be presented in detail. Each of the next three sections in the present chapter discusses one of the three prominent career choice process scales. These scales were selected for inclusion in this chapter because they were the only process measures that met three criteria: (a) sufficient research literature to judge their psychometric characteristics, (b) easy availability through commercial publishers or other means, and (c) adequate practitioner lore about appropriate use and clinical interpretation. The three scales which met the criteria are the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1976), the Career Development Inventory (Super, et al., 1981), and the Career Maturity Inventory (Crites, 1978b).

CAREER DECISION SCALE

For decades, researchers used just two categories—*decided* and *undecided*—to classify an individual's adaptation to the career choice process. They extensively investigated the personalities and situations of individuals who had been classified as undecided, but they did not examine how these individuals engaged in vocational decision making (Osipow, 1983). In the mid-1970s, many researchers began to view adaptive status as a continuum of decidedness instead of a dichotomy between undecided and decided. They also became sensitive to the degree of closure among decided individuals and thus started to measure variation in choice satisfaction, choice certainty, commitment to a choice, and even choice implementation. Osipow and his colleagues (1976) helped to popularize the process view of decidedness by providing a scale with which counselors could quickly survey high school and college students' progress in making career choices. The Career Decision Scale (CDS) measures a person's career choice status and identifies difficulties that thwart career choice closure.

Development

The CDS originated as part of a proposed modular system for assisting clients with vocational indecision. Osipow, Winer, Koschier, and Yanico (1975) began by identifying separate components of indecision. They assumed that a finite number of relatively discrete problems thwart adaptation to the choice task. Although they have not written about the criteria used in selecting these problem behaviors, they have explained that they identified the problems in their study of a model relating specific intervention strategies to distinct types of difficulties in the choice process (Osipow et al., 1975). Osipow and his colleagues considered problems they had encountered in their own experience with students as well as problems they found in examining records of students seeking career counseling. From these sources they compiled 14 problem behaviors that thwart progress in reaching closure on a career choice. They asserted that each of the 14 difficulties was a distinct antecedent of or unique reason for being undecided. The antecedents act as barriers to prevent adaptation to the choice task by thwarting progress along the decidedness continuum or by reducing satisfaction with, certainty about, and commitment to a choice that has been made. Because each antecedent differs from the other 13, an individual may experience several difficulties simultaneously or sequentially. People who experience more problems are expected to be more prone to indecision, to make slower progress in advancing along the decidedness continuum, and to be less satisfied with, certain about, and committed to choices they have made.

Each of the 14 types of indecision or reasons for being undecided were expressed in a descriptive item consisting of one to three statements. These 14 items were published originally as the Types Questionnaire (Osipow et al., 1975). Osipow and Carney revised the Types Questionnaire into the Scale of Vocational Indecision (see Osipow, Carney, & Barak, 1976, p. 237). This revision included five new items: two items state additional explanations for indecision, an open-ended item allows respondents to describe unique sources of indecision, and two items measure certainty about career and major choices, respectively. Osipow, Carney, Winer, Yanico, and Koschier (1976) slightly revised the Vocational Indecision Scale and renamed it the Career Decision Scale (3rd Revision). Marathon Consulting and Press published the Career Decision Scale from 1976 to 1987 when Psychological Assessment Resources assumed publication of the scale.

Description

The Career Decision Scale (CDS) was designed for high school and college students and has been used successfully with women returning to college (Slaney, Stafford, & Russell, 1981). It also has been slightly modified for use with graduate students (Hartman, Utz, & Farnum, 1979) and medical students

(Savickas, Alexander, Osipow, & Wolf, 1985). In fact, the CDS probably can be used with any individual crystallizing field and level preferences or specifying a career choice. Individuals can be given the CDS as a part of an intake process or a vocational appraisal test battery. Because it takes only 10 to 15 minutes to administer and is easy to understand and respond to, the CDS also can be used to survey large groups for screening purposes or to evaluate vocational interventions and career education programs.

The CDS is published in a 4-page 8½″ × 11″ booklet. The front page has lines for name, date of birth, age, grade, and sex, as well as instructions to respondents to indicate on a 4-point Likert scale how closely each item describes their thinking about career or educational choices. The response scale ranges from "exactly like me" (4), to "not at all like me" (1). Clients circle on the test booklet the appropriate number for each item. These ratings show how well each item corresponds to sources of clients' indecision.

Scale items appear on the inner two pages. The first two items compose the Certainty Scale. They state that one has already decided on a career (item 1) or a major (item 2) and that one feels comfortable with and knows how to implement that choice. Items 3 through 18 describe reasons for being undecided and compose the Indecision Scale. Item 19 asks clients to describe their unique difficulties if none of the 16 items describe them. Six lines are provided for written responses.

At the bottom of page 3, spaces are provided to record scores, identify normative group, and indicate percentile ranks. Counselors compute the raw score for the Certainty Scale by summing the ratings for items 1 and 2. The scores can range from 2 to 8, with higher scores indicating greater certainty. They compute the Indecision Scale raw score by summing the ratings for items 3 through 18. The scores can range from 16 to 64, with higher scores indicating greater indecision. Item 19 is clinically interpreted. The manual presents four normative groups that can be used to convert raw scores to percentiles: high school students (N = 720 males and 738 females); college students (N = 225 males and 192 females); adults seeking continuing education (N = 81); and women returning to college (N = 67). The back page of the booklet is blank.

Interpretation

To interpret a client's CDS scores, a counselor may begin by assessing the client's progress toward decidedness in general from the Certainty Scale score, and then assess progress toward major and career choice in particular from the two item ratings. Based on experience, I have concluded that significant discrepancies between ratings for the two certainty items require further assessment. If major choice certainty exceeds career choice certainty by two or three points, then the counselor should investigate the possibility that the client has a plan without a clear goal. Often these clients have made pseudo-crystallized choices, that is, "they have not analyzed the essential elements and have not fully accept-

ed the commitments entailed" (Ginzberg, Ginsburg, Axelrad, & Herma, 1951, p. 108). They may be implementing plans that reflect their parents' dreams rather than commitments to self-chosen goals that manifest their own vocational identities. If career choice certainty exceeds major choice certainty by two or three points, then the counselor should investigate the possibility that the client has a goal without a plan. For example, a high school student may be certain about the goal of being a lawyer but not know, or eventually like, the activities required to become a lawyer. Often such clients have uninformed interests in choices that may be subject to change in light of new experience and information (Strong, 1943, p. 17).

After assessing the Certainty Scale results, counselors may look to the Indecision Scale score to assess degree of indecision, that is, number and intensity of difficulties in the decision-making process. Although the definition of high, average, and low indecision scores depends on the context, Osipow (1987) suggested that scores from the 16th to the 84th percentile be considered middle scores, with scores above the 84th percentile signifying high indecision and scores below the 16th percentile signifying low indecision. Counselors should expect the Indecision Scale score to oppose the Certainty Scale score because theoretically these variables associate inversely and empirically these scales correlate negatively. When both scores are either high or low, the counselor should investigate the possibility that the scores are invalid or that the client is quite unique. When the scores are valid, I have usually found that students with high certainty and high proneness to indecision feel very committed to a series of different choices over short time periods. In contrast, I have usually found that students with low certainty and low indecision feel very comfortable with being undecided and are not yet concerned about making a career choice. If certainty is high and indecision is low, then the counselor should hypothesize that the client may not need an intervention or, at least, that the client does not feel a need for assistance. Because combinations of middle scores on both scales are ambiguous, Osipow suggested that if this occurs counselors should further assess the client's vocational situation. If they need or want an intervention, these clients usually benefit from content-oriented career counseling. If certainty is low and indecision is high, then the counselor should hypothesize that the client would benefit from a process-oriented intervention.

When working with a client who scores low on the Certainty Scale and high on the Indecision Scale, the counselor examines the client's item ratings and considers any response to item 19. By studying the items that the client rated as most self-descriptive, the counselor can learn about the type and intensity of decision-making difficulties that the client experiences in trying to make career choices. With training and experience, a counselor can often discern a coherent pattern of decisional difficulties from the item ratings and then tentatively select a process intervention to address this pattern. To aid clinical judgment in pattern recognition, some counselors consider items in clusters based on factor analyses of the Indecision Scale.

Osipow, Carney, and Barak (1976) reported that four dimensions structure the Indecision Scale. Their factor analysis of 837 college students' responses to the 16 items produced four factors which explained 81.3% of the total variance. They did not report how much variance each orthogonal (uncorrelated) factor explained. They interpreted the factors as:

1. Avoidance of choice: 9 items indicating choice anxiety and lack of structure and confidence in approaching vocational decision making.
2. External barriers: 5 items indicating the presence or perception of external barriers to a preferred choice and questions about alternative possibilities.
3. Approach-approach: 2 items indicating difficulty in deciding from among attractive alternatives.
4. Conflict: 2 items suggesting some kind of personal conflict about how to make a choice.

The items in these four factors total 18 rather than 16 because two items loaded on two factors.

Osipow, Carney, and Barak's (1976) conclusions about the factor analytic results suggest that the items state 16 distinct manifest difficulties in decision making yet they reflect only four unique latent dimensions or basic types of indecision. Some counselors and researchers have taken this to mean that they could score the Indecision Scale for subscales to appraise the client across four major types of indecision. Osipow (1987, p. 7) warned CDS users that the instability of its factor structure does not warrant such a practice. His caution, which is shared by Allis (1984), Harmon (1985), Herman (1985), and Slaney (1985), is based on repeated failures to completely replicate the Indecision Scale factor structure. Kazin (1976), Slaney (1978), and Slaney, Palko-Nonemaker, and Alexander (1981) each replicated only the first factor, whereas Rogers and Westbrook (1983) replicated only the second and third factors.

One explanation for the failure to replicate the original factor analytic results faults the scale items. The complexity of each item, according to Osipow, Carney, & Barak (1976), makes it subject to more than one answer. Recall that some of the items consist of two or three statements. In some cases statements within the same item are independent, so we cannot be sure exactly which statement evoked a respondent's rating. For example, item 7 describes intrapsychic confusion, interpersonal dependency, and an information deficit: "Until now, I haven't given much thought to choosing a career. I feel lost when I think about it because I haven't had many experiences in making decisions on my own, and I don't have enough information to make a career decision right now."[1]

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Although these elements may cohere in defining one type of indecision, they do not form an easily interpretable item in psychometric analyses. Slaney et al. (1981) hypothesized that this item complexity may cause the overlap and instability in the Indecision Scale factor structure.

Two other possible explanations for the failure to identify an invariant factor structure underlying the CDS were offered by Shimizu, Vondracek, Schulenberg, and Hostetler (1988): the structure of CDS indecision constructs varies at different levels of career maturity and statistical-methodological artifacts attenuate the extent of factor similarity across the studies. In considering the latter possibility, they reasoned that the most serious problem in CDS factor analytic studies was the selection of Varimax rotation procedures to produce orthogonal factors. To examine this hypothesis, they rotated each of the Varimax solutions presented in seven previous studies to Promax solutions, which produced oblique (correlated) factors. To compare the similarity of the correlated factors across the seven studies, they calculated congruence coefficients. From these comparisons, they concluded that "there are more similarities across the factor analytic studies than have been previously reported" (p. 218). They extended the generalizability of this conclusion with a new sample. Moreover, they suggested further research on four linearly independent subscales that represent the correlated factors in their two studies. They described the four subscales as (a) feelings of indecision, (b) relative decidedness yet desire for reinforcement and support, (c) classic approach–approach conflict, and (d) external and internal barriers to decision making. Despite questions about the factor structure of the Indecision Scale, there is no doubt that it is multidimensional. However, almost all of the studies on the CDS used a single score as a unidimensional measure of decisional difficulties. The single best summary of these studies appears in the CDS manual.

Technical Information

The CDS manual (Osipow, 1987) is thorough and well organized. It summarizes five factor analytic studies of the Indecision Scale and cites reports of test-retest reliability at .90 and .82 for two weeks (Osipow, Carney, & Barak, 1976) and .70 for six weeks (Slaney, et al., 1981). An unpublished master's thesis not cited in the manual reported a 3-week test-retest reliability coefficient of .79 and an internal consistency coefficient of .91 (Williams-Phillips, 1983). Rogers and Westbrook (1983) reported an internal consistency coefficient of .88.

The manual presents different types of validity evidence in four sections. The first section discusses studies that compared demographic groups on the CDS and that related the CDS to other career choice process measures. The second section reviews treatment studies indicating that the CDS is sensitive to pre-test/post-test changes and is an effective outcome measure. The third section discusses studies that demonstrate how the CDS relates to personality variables such as locus of control and fear of success. The fourth and final section summarizes studies that

relate the Indecision Scale to demographic variables. Four studies reported no significant sex differences, whereas two studies reported significant sex differences, one favoring females and the other favoring males. The only study that addressed ethnic differences reported greater indecision in blacks than whites.

The CDS manual includes 19 tables containing data about the CDS. The manual refers to 65 works, 51 of which deal with the CDS from its inception through 1986. This amount of literature represents an enthusiastic response by researchers and practitioners to a scale published in 1976. It implies widespread acceptance of the CDS or, at least, positive reaction to the conceptualization of vocational decision making as a process fraught with measurable difficulties.

Reviews

In a review of the CDS, Slaney (1985) concluded that an impressive amount of research had been conducted in the early development of the CDS and that this research "provided substantial support for the reliability of the instrument and for its construct and concurrent validity" (p. 142). Three other reviewers were equally impressed by the CDS. Harmon (1985) concluded that "the CDS is extremely well developed and researched for such a relatively new inventory" and highly recommended its use in career counseling and evaluation. Herman (1985) concluded that its "brevity, comprehensiveness, and extensive research support are important strengths of the inventory." Allis (1984) called support for its construct validity "impressive."

Research Directions

Each review of the CDS and many investigations of it have offered explicit suggestions for research to further develop the Indecision Scale. In sum, reviewers and researchers have called for:

1. Explication of the conceptual rationale for item selection.
2. Continuation of studies to define types of indecision, or patterns of vocational decision-making difficulties.
3. Development of subscales for the Indecision Scale that can be used in differential diagnosis of indecision types.
4. Extension of the inchoate work (e.g., Barak & Friedkes, 1981) on matching intervention methods and materials to types of indecision.
5. Initiation of research on written responses to item 19.
6. Examination of qualitative differences between male and female CDS responses (Hartman, Fuqua, & Jenkins, 1988).

Item revision is a potentially productive suggestion for future research but it requires a significantly greater commitment of time and resources than do the

above suggestions. In the first published article dealing with the CDS, Osipow, Carney, & Barak (1976, p. 240) wrote that "because some of the items are complex and may be subject to more than one answer, the items may need further revision." Slaney and his colleagues (1981) suggested that Osipow approach item revision by dividing the logically independent statements in complex items into separate items. Reducing the complexity of item statements and the corresponding ambiguity of item responses may produce a stable factor structure and thus facilitate definition of indecision types, construction of CDS indecision subscales, and development of differential diagnosis systematics.

Experimentation with refining the two Certainty Scale items could elaborate the CDS model of career choice status. Recall that the Certainty Scale represented an innovative and heuristic conception of status in adapting to the developmental tasks of career choice. Rather than categorizing choice status with the undecided-decided dichotomy, Osipow, Carney, & Barak (1976) conceptualized choice status as a continuous variable with levels of decidedness. Jones and Chenery (1980) have demonstrated the merit of elaborating the conception of choice status from a univariate model (i.e., decidedness) into a multivariate model. They investigated four choice status subtypes created by combining the variables of decidedness and comfort with choice. Using the responses to two items of 224 college students in an introductory psychology class, they found that 70.4% were decided-comfortable, 17% undecided-uncomfortable, 3.2% undecided-comfortable, and 9.4% decided-uncomfortable. Each CDS Certainty Scale item combines statements about being decided, feeling comfortable with that choice, and knowing how to implement it. Dividing these statements into three separate items each for major and career choice could stimulate research on a differentiated model of career choice status, which might eventually systematically relate to a differentiated model of vocational decision-making difficulties.

CAREER DEVELOPMENT INVENTORY

Super and his collaborators investigated the maturation of adolescents' coping repertoire for making the pre-vocational and vocational choices required by their school curricula. They conducted the longitudinal Career Pattern Study (Super & Overstreet, 1960) to determine which variables, in addition to socioeconomic status and intelligence, most affect vocational development in adolescents and young adults. The staff of the Career Pattern Study (CPS) postulated that vocational development occurs along five dimensions:

> (1) increasing orientation to vocational choice, (2) increasing amounts of vocational information and more comprehensive and detailed planning, (3) increasing consistency of vocational preferences, (4) the crystallization of traits relevant to vocational choices, and, consequently, (5) increasing wisdom of vocational preferences. (Super, 1955, p. 154)

They originally identified possible measures or indices of vocational maturity and grouped them into these five dimensions: orientation to choice, information about preferred occupation, consistency of preferences, crystallization of traits, and wisdom of preferences (Super, 1955, p. 161). Preliminary empirical work led them to add vocational independence as a sixth dimension and to group 20 indices into the six dimensions (Super, 1974, p. 12). They tested this 6-dimensional model in the CPS. Their research eventually led them to construct a theoretical model of vocational maturity during adolescence (Super, 1974) that has five dimensions:

1. Planful attitudes toward life stages and tasks.
2. Attitudes toward exploration.
3. Educational and occupational information.
4. Knowledge of decision-making principles and practice.
5. Realism.

Although the variables that constitute these dimensions have been modified and refined (Super, 1983), the basic five dimensions in the theoretical model have remained unchanged.

Development

Super and his colleagues constructed the Career Development Inventory (CDI) to measure the first four dimensions of their theoretical model. They chose not to measure the realism dimension because the CPS realism measures did not interrelate with each other or correlate to other vocational maturity variables during adolescence. In this section, I will briefly trace the development of the CDI from its two early predecessors through its three unpublished forms, before describing the published form in the next section. In 1969 Super and his collaborators devised a career development measure called the Student Questionnaire to evaluate a career education project (Myers, Lindeman, Thompson, & Patrick, 1975). It contained 87 items that had been validated in the CPS. They scored the items on six scales. In 1970, they expanded the Student Questionnaire to 216 items grouped into 13 scales and renamed it the Career Questionnaire. Factor analysis (Forrest, 1971) led to item reduction and rearrangement of the 13 scales into three basic scales that contained a total of first 93 and later 91 items. The three scales in Form I of the CDI (Super & Forrest, 1972) corresponded to the first four dimensions in Super's theoretical model of vocational maturity:

1. Scale A, Planning Orientation (33 items): concern with choice, specificity of planning, and self-estimated amount of occupational information

2. Scale B, Resources for Exploration (28 items): quality of the actually-used and potentially-usable resources for educational and occupational exploration
3. Scale C, Information and Decision Making (30 items): amount of educational and occupational information that a student has acquired, together with mastery of the use of information for sound decisions

Super and his collaborators expanded Form I of the CDI to more broadly measure knowledge of the world of work, assess specific types of occupational information, and diagnose cognitive awareness of career development tasks. They used Form II in laboratory research and then modified it to produce Form III which they explicitly organized around a refined model of vocational maturity (Super & Thompson, 1979). Form III contained 191 items grouped into six scales:

1. Extent of Planning (30 items): similar to Form 1, Scale A
2. Use and Evaluation of Resources in Exploration (30 items): largely Form 1, Scale B
3. Career Decision Making (30 items, many new): principles and practice of decision making
4. Career Development Information (30 items, many new): awareness of and concern with developmental tasks
5. World of Work Information (30 items, many new): general occupational information
6. Information about Preferred Occupation (41 new items): knowledge of occupational group selected by student as of interest

Essentially, Form III used the Form I planning orientation (A) and exploration scales (B), split the decision-making and occupational information scale (C) into two scales and expanded each to 30 items, and added a scale to measure developmental task concern and a scale to measure specificity of information.

The test authors quickly concluded that Form III was too long because students required at least two 40-minute class periods to respond to the 191 items. They returned to their original goal of devising a measure of career maturity that could be administered within one class period. Using factor analysis, they reduced the first three scales in Form III to 20 items each, combined the Career Development Information and World of Work Information scales into one 20 item scale, and reduced the Knowledge of Preferred Occupational Group scale from 41 to 40 items. Students require about 60 minutes to complete the 120 items, but by eliminating Knowledge of Preferred Occupational Group Scale, they can complete Form IV of the CDI in a 40-minute class period.

Description

Super and his collaborators (1981) published this fourth version of the CDI in two forms: the Junior/Senior High School Form and the College and University Form. The forms are quite similar in that the authors slightly modified for the college form those high school form items that deal with levels of educational and occupational options to make them more pertinent to college students. The CDI is sold as a reusable 16-page test booklet with separate, computer-scored answer sheets. The front page explains the purpose of the inventory and how to respond to the items on the answer sheet. It also explains that the inventory has two parts: (I) Career Orientation and (II) Knowledge of Preferred Occupation.

Part I begins with Section A, Career Planning. This section measures extent of planning by asking about involvement in thinking about the future and in planning career-related high school and post-high school activities. Section B, Career Exploration, measures willingness to find and use good resources for career planning. Section C, Career Decision Making, measures ability to apply decision-making principles and methods to solve problems involving educational and occupational choices. Section D, World of Work Information, measures knowledge of types of occupations and ways to obtain and succeed in jobs.

Part II, Knowledge of Preferred Occupational Group, measures familiarity with the type of work that students say interests them most. Students select one personally preferred occupational group from 20 groups listed on the back of the IBM answer sheet. Then they answer 40 questions about the kinds of work in that field and the abilities, interests, values, and personal characteristics of workers in that field. The CDI manual states that Part II is most suitable for students in 11th and 12th grades who are about to enter the labor force and for college students who are about to declare a major. Younger students probably need take only Part I.

The CDI must be machine scored using differential item weights which are not reported in the manual. Hand-scoring keys are unavailable. In addition to scores for the five scales, the computer scoring service provides three composite scores: Career Development Attitudes combines planning and exploration scores, Career Development Knowledge and Skills combines decision making and world of work scores, and Career Orientation Total combines the planning, exploration, decision-making, and world of work scores. The composite scores offer increased reliability for individual interpretation because some of the basic scales have reported 3-week test-retest reliability in the low sixties.

The computer test report does not include raw scores. It provides only scale scores that have a mean of 100 and a standard deviation of 20. The basic scoring service offers four reports: (a) standard score and percentile on the five basic and three composite scales for individuals, (b) mean standard scores and standard deviations for the group, (c) percent of students selecting each alternative for the items in Part I, and (d) number and percentage of students in the group preferring each of the 20 occupational fields. The manual presents norms by sex for grades

9 through 12 for each of the eight CDI scores based on the standardization group of 5,039 students, a nation-wide but not demonstrably representative sample. The CDI authors advise users to compile local norms, a process facilitated by the reporting system when N is 100 or more.

Interpretation

Counselors use the CDI to measure students' readiness to cope with the developmental tasks of crystallizing, specifying, and implementing a career choice. Counselors and career educators can administer it within one high school class period to obtain data for diagnosing individual career development attitudes and competencies, planning group guidance programs and career education curricula, and evaluating program outcomes. In addition, counselors can annually readminister the CDI to measure rate of career development and identify, for preventive interventions, those students who are regressing or maintaining rather than developing. After completing an individual diagnosis, group needs assessment, survey, or program evaluation, counselors may use the CDI data to plan individual counseling, structured learning programs, or exploration experiences.

To select an intervention, counselors begin by examining clients' scale scores to identify their assets and deficits. The CDI authors consider scores above the 75th percentile as strengths to build upon and scores below the 25th percentile as weaknesses to remediate. They suggest interpretive hypotheses for each scale and illustrate their approach to interpretation with one case in the *User's Manual* (Thompson & Lindeman, 1981), three cases in the *Technical Manual* (Thompson & Lindeman, 1984), and three cases in an article on the Developmental Assessment and Counseling Model (Super, 1983). These illustrations demonstrate the logical order in which the CDI authors interpret the scales. This order follows the sequence of developmental task mastery. Fundamental to task mastery is awareness that one faces or will face a developmental task. Awareness precedes and prompts concern about and responsibility for task mastery.

Counselors look to scores on the Career Planning scale to assess clients' inclination to look ahead, take a planful approach, and involve themselves in career planning activities. A low score indicates that clients do not foresee their future in the world of work; therefore, they do not feel a need to acquaint themselves with or relate themselves to occupations. Often these clients display low work-role salience (Nevill & Super, 1988; Super & Nevill, 1984), either because they look forward to other life roles (e.g., homemaker) or because they do not look forward at all (Gordon, 1970). Clients who lack a future orientation typically need personal counseling to deal with their lack of optimism, goals, and achievement (Savickas, 1986). Clients who only look forward to other life roles need to learn that they will probably work in the future. A counselor can facilitate both work salience and career orientation by teaching clients about the developmental tasks they face, the implications of ignoring these tasks, and the value of

a planful approach in mastering the tasks. If clients' scores indicate a planful and responsible approach to developmental tasks, then the counselor considers clients' career exploration attitudes.

The Career Exploration scale score indicates inclination to use exploration opportunities and resources. It measures attitudes toward information sources and willingness to use and evaluate these sources. Low scores suggest that clients are not concerned with using good sources of data about the fields and levels of work. These clients should learn to distinguish between good and bad information sources and to appreciate how competent sources can facilitate their information gathering. Counselors help these clients increase their awareness of career exploration opportunities. If a client is inclined to use competent sources for career exploration, then the counselor assesses the information that the client has already acquired.

The World of Work Information scale score indicates knowledge about work, occupation, and career. Low scores indicate that clients need to learn about types of occupations, the mores of work, and career development tasks. They probably do not know much about the range of occupations available to them. Thus counselors encourage uninformed clients to survey a wide range of occupations and then explore the fields of work that they find interesting. High scores on this scale suggest that clients are sufficiently knowledgeable to apply occupational information to self and to begin crystallizing field and level preferences.

The Decision Making scale score indicates knowledge of the principles and practices of decision making. Low scores suggest that clients do not know what to consider in making choices. This means that clients are not ready to use the occupational information they have acquired for career planning. Counselors help these clients to understand sound principles of decision making and to apply these principles in matching self to occupations. High scores suggest that clients may be ready to make matching decisions. When decision-making knowledge is supported by an adequate fund of occupational information based on planful exploration, then clients are ready to make tentative career choices. Aptitude tests, interest inventories, and self-reports have meaning for these clients because they already know about the world of work and how to make vocational decisions. In other words, the client displays the dispositions and competencies needed to benefit from content-oriented career counseling.

The development of attitudes and competencies for task mastery does not follow the above sequence for some clients. In these cases, the counselor must rely on common-sense and clinical experience to generate interpretive hypotheses. For example, if the Career Planning scale score is the only low scale score, then the counselor may want to determine if clients relate exploration and information to planning their own future. Or, if the Career Exploration scale score is the only low score, then the counselor may ask clients how they learned about occupations and developed decision-making skill.

Counselors do not need the Preferred Occupational Group scale to form the above interpretive hypotheses, thus it is not included in the Career Orientation Total score. Typically, counselors administer the Preferred Occupational Group scale only to students who are expected to be able to state a thoughtful preference for a career field. Ideally, these students have crystallized a preference for a group of occupations in a particular field and level of work and are beginning to specify a choice from among occupational alternatives in that group.

The Preferred Occupational Group scale score indicates knowledge about the occupational group of most interest to a client. Low scores suggest that clients do not possess accurate knowledge about their stated preferences. These clients need sharply focused exploration within their preferred field to generate and test specific career choices. The counselor must look at the four basic scales to determine if the client is ready for this focused exploration. Interpretation of high scores on the Preferred Occupational Group scale also requires relating the score to the other four basic scales. For example, a high Preferred Occupational Group score along with a low World of Work Information score means that clients know about the preferred field but not its place in the occupational structure. In these cases, the counselor should ask clients how they acquired this selective information and whether they have adequately examined other options. Often it is a case of premature closure in which a client commits self to a parental preference or a glamorous preference. For example, some clients grow up in a family business (e.g., farming or medicine), learn about this one field in great detail, and specify a choice in this field without exploring other fields, perhaps because of parental pressure or financial incentives.

Technical Information

The CDI manual consists of two volumes and a supplement. The 27-page *User's Manual* (Thompson & Lindeman, 1981) presents the rationale, description of item content, administration instructions, scoring procedures, interpretation methods, and recommended uses. The 48-page *Technical Manual* (Thompson & Lindeman, 1984) presents the theory and research supporting the development of the CDI and detailed data on its psychometric characteristics. The 20-page *College and University Supplement* (Thompson & Lindeman, 1982) discusses psychometric characteristics of and normative data for that form.

The manual appropriately cautions users about low test-retest reliabilities for the CDI scales (Career Planning, .79; Career Exploration, .73; Decision Making, .70; World of Work, .67; Preferred Occupation, .61) and encourages them to use the composite scales because of their greater reliability (Career Development Attitudes, .83; Career Development Knowledge, .83; and Career Orientation Total, .84). In light of their reliability, the authors instruct users in how to apply the standard error of measurement to interpret scale scores and score profiles.

The manual reports a respectable amount of validity evidence for an inventory published in 1981. However, Thompson and Lindeman (1981, p. 7) may have been overly enthusiastic when they wrote that much of the research on earlier forms of the CDI directly applies to the current form. The CDI possesses superior content validity because it explicitly operationalizes a model of career maturity that has been refined by four decades of programmatic research. Although the instrument's construct validity needs more empirical support, its factor structure and relations to age, grade, and school curricula provide an adequate base. In regard to criterion-related validity, Thompson and Lindeman (1984) cite three concurrent validity studies that showed the CDI related as expected to ability, work salience, and other career development measures. More predictive-validity evidence is needed, but longitudinal data takes time to accumulate. Until the completion of predictive-validity studies using the published form of the CDI, we may cautiously use evidence collected on earlier forms of the inventory. At least two longitudinal studies by the CDI authors and others are now underway.

Reviews

The CDI's greatest strength derives from its articulation of a cogent model of career development. Although the CDI culminates 30 years of programmatic research on vocational behavior during adolescence, further research is needed to substantiate its tentatively established validity. While waiting for more validity research, CDI users are advised not to inadvertently apply research on earlier forms to the current form and not to overinterpret the scales by confusing the CDI's construct validity for criterion-related validity.

In a review based on the *User's Manual* (Thompson & Lindeman, 1981) and written before publication of the *Technical Manual* (Thompson & Lindeman, 1984), Hansen (1985) called for more reliability and validity research. In particular she recommended criterion-related research to examine the CDI relative to occupational aspiration, career success, and job satisfaction. She concluded that the World of Work Information and Preferred Occupational Group scales were "sufficiently unreliable over short periods to warrant caution in their use" (p. 223). She also questioned the need for five scales in light of factor analytic studies that show two factors accommodate the CDI—Career Development Attitudes and Career Development Knowledge. However, in a Rasch analysis of the psychometric characteristics of an Australian adaptation of the CDI, Punch and Sheridan (1985) reported that the two attitudinal scales (Career Planning and Career Exploration) do not constitute one dimension and should be considered as separate components of the CDI. Yet they did conclude, like Hansen, that the Decision Making and World of Work Information scales may represent one factor and added that the CDI authors may have erred in dividing Scale C of Form I into separate decision making and information scales.

Research Directions

The CDI needs criterion-related research to firmly establish its validity and nomological network. In particular, researchers could refine the Developmental Assessment and Counseling Model by linking the CDI to variables commonly studied in developmental and personality psychology. To date, research on the CDI has been conducted in isolation from advances and debates in the behavioral sciences (Heath, 1976; Vondracek & Schulenberg, 1986). Linkages to this body of accumulated basic research would increase practitioners' understanding of career maturity and its facilitation. For example, researchers could relate the CDI variables to future orientation, causal attribution, and self-efficacy to learn if these personality variables determine career planning and exploration attitudes (Super, 1983).

Practitioners would also benefit from research on the interpretative hypotheses suggested for each CDI scale. Although the descriptive interpretations in the manual make sense, they await empirical confirmation. The interpretations of profile patterns also lack empirical support. For example, the interpretation that spiked Career Planning scale and Knowledge of Preferred Occupational Group scale scores reflect the premature closure or early fixation seems cogent but needs empirical confirmation. Validated decision rules for interpreting profiles could stimulate advances in differential treatment of clients.

Some revision of the CDI itself to increase scale reliabilities would support work on scale and profile interpretation. The scale with the lowest reliability, Knowledge of Preferred Occupational Group, is quite innovative and may benefit from research to increase its reliability.

CAREER MATURITY INVENTORY ATTITUDE SCALE

The other prominent inventory that measures variables in the career choice process also evolved from the Career Pattern Study. In fact, the Career Maturity Inventory (CMI; Crites, 1978b) was the first paper-and-pencil measure of vocational development. Crites constructed the CMI to measure two dimensions in his model of vocational development which appears in Figure 12.1. He refined the original CPS model of vocational development by reorganizing and defining its dimensions. Crites accepted the Consistency of Vocational Choice and Wisdom of Vocational Preference dimensions and reorganized the other three dimensions into two dimensions. He proposed that the Orientation to Vocational Choice dimension, the Information and Planning dimension, and certain aspects of the Crystallization of Traits dimension (e.g., increasing independence) could be elaborated as several different kinds of career choice concepts and competencies, that is, attitudes and aptitudes for vocational decision making. Thus, the third and fourth dimensions in Crites' model were called Career Choice Attitudes

and Career Choice Competencies. Crites (1965) defined attitudes as dispositional response tendencies that mediate both choice behaviors and competencies. He defined competencies as comprehension and problem-solving abilities that pertain to vocational decision making.

Development

Crites constructed and standardized the CMI to measure the attitudes and competencies dimensions in his vocational development model. The original form of the CMI was called the Vocational Development Inventory. It consisted of a Concept Test and a Competence Test. The Concept Test, which eventually became the CMI-Attitude Scale, measured variables from the work of Ginzberg and Super: bases for choice, reliance upon others in decision making, involvement in the choice process, planful daydreaming and fantasy, time perspective, and means-end cognizance. The Competence Test consisted of five subtests measuring variables that bear on decision-making: self-appraisal, occupational information, goal selection, planning, and problem solving.

Although the Concept Test has gone through four research forms and two published forms, the Competence Test has not been developed beyond the original research edition, probably because of the excessive time required to administer it. Crites subsequently stopped working on the Competence Test and instead has been developing a new scale, the Career Readiness Inventory, to measure career choice competencies. The CMI Competence Test is not dealt with in the present chapter.

The Concept Test consisted of self-descriptive statements about an individual's career choice attitudes and behaviors. Crites drew the subject matter from real life sources. He wrote a pool of 1,000 items based on attitudinal statements made by clients in vocational counseling over a 5-year period. To guide selection of items from the pool for inclusion in the scale, Crites wrote behavioral descriptions and literary definitions for five central concepts in vocational theory and research. The concepts and their definitions appear in Table 12.1.

Two experimental forms of the Concept Test consisted of the same 100 items written in two grammatical formats, first and third person. The two test forms also differed in response format: true/false versus 5-point Likert scales. Crites administered the items to a stratified sample of fifth through 12th-grade students with Ns varying from 500 to 1,000 in each grade. He wanted items that empirically differentiated among these criterion groups because he believed that "any measure of a developmental variable must be systematically related to time" (Crites, 1961). Of the 100 items used in Forms 1 and 2, 86 items differentiated between grade level at or beyond the .01 level. Fifty of the 86 items related monotonically to grade (Crites, 1964, p. 332). Results also indicated that the two item formats and two response scales were essentially equal in differ-

TABLE 12.1
Variables in the CMI-Attitude Scale, Screening Forms A-1 and A-2

Dimension	*Definition*	*Sample Item*
Involvement in the choice process	Extent to which individual is actively participating in the process of making a choice	"I seldom think about the job I want to enter."
Orientation toward work	Extent to which individual is task- or pleasure-oriented in his or her attitudes toward work and the values he or she places upon work	"Work is dull and unpleasant" and "Work is worthwhile mainly because it lets you buy the things you want."
Independence in decision-making	Extent to which individual relies upon others in the choice of an occupation	"I plan to follow the line of work my parents suggest."
Preference for vocational choice factors	Extent to which individual bases his or her choice upon a particular factor	"Whether you are interested in a job is not as important as whether you can do the work."
Conceptions of the choice process	Extent to which individual has accurate or inaccurate conceptions about making an occupational choice	"A person can do any kind of work he wants as long as he tries hard."

Note. From "Measurement of vocational maturity in adolescence: I. Attitude Scale of the Vocational Development Inventory" by J. O. Crites, 1965, *Psychological Monographs, 79,* page 35.

entiating power. He chose to retain both grammatical forms but use only the less time consuming true/false response scale in a 50-item revision of the original Vocational Development Inventory Concept Test which Crites (1971) named the Vocational Development Inventory Attitude Test. Crites published this form in 1973 and renamed it the Career Maturity Inventory Attitude Scale. The name change fit the then current emphasis on career education.

Crites referred to this 1973, 50-item version of the CMI-Attitude Scale as the Screening Form (A-1) to distinguish it from a Counseling Form then being developed. In 1978, he published the Counseling Form (B-1) along with a revised screening form (A-2). Form A-2 differs only slightly from Form A-1. Research indicated that two items needed to be keyed differently. One other item (#46) was replaced with a new item. In addition, Crites reorganized the items to arrange identical scoring keys for forms A-1 and A-2.

Crites constructed the Counseling Form to provide subscales that measure the career choice attitudes variables in his model of career maturity. However, the

Counseling Form subscales do not correspond exactly to the variables listed in Table 12.1. Crites modified them in response to criticism that three of the variables reflected career choice content. He replaced the three variables that dealt with attitudes toward a career choice with three new variables that dealt with attitudes toward vocational decision making. Thus each of the five variables in the revised model, which are listed in Table 12.2, clearly pertains to the decisional process. Compromise replaced choice factors and decisiveness replaced conception. Crites retained the variable named orientation but redefined it.

There is some confusion regarding the Orientation subscale in the Counseling Form (Stowe, 1985). The *Theory and Research Handbook* (Crites, 1978c, p. 10) mistakenly retained the original definition stated in Table 12.1. However, the items scored for it differ substantially from the orientation items in Form A-1. In Form A-1, items 7, 8, 14, 47, 24, 35, 4, and 9 measure orientation to intrinsic or extrinsic rewards in making a career choice. The items state that a job is important because it lets one make money, buy things, get ahead, and become famous. In Form B-1, the items measure orientation to the decision-making process. They deal with how much one thinks about jobs, imagines self in a job, and thinks about preparing for a job. To correct the mistake in the *Handbook*, Savickas and Crites (1981) redefined orientation as the extent to which an individual is familiar with and relates self to the vocational decision-making process.

TABLE 12.2
Variables in the CMI-Attitude Scale, Counseling Form B-1

Dimension	*Definition*	*Sample Item*
Decisiveness in career decision making	Extent to which an individual is definite about making a career choice	"I keep changing my occupational choice."
Involvement in career decision making	Extent to which individual is actively participating in the process of making a choice	"I'm not going to worry about choosing an occupation until I'm out of school."
Independence in career decision making	Extent to which an individual relies upon others in the choice of an occupation	"I plan to follow the line of work my parents suggest."
Orientation to career decision making	Extent to which individual is familiar with and relates self to the career decision-making process	"I have little or no idea of what working will be like."
Compromise in career decision making	Extent to which individual is willing to compromise between needs and reality	"I spent a lot of time wishing I could do work I know I can never do."

Note. From *Theory and Research Handbook for the Career Maturity Inventory* (2nd ed., p. 10) by J. O. Crites, Monterey, CA: CTB/McGraw-Hill, Inc. Copyright 1978 by McGraw-Hill, Inc. Reprinted by permission of CTB/McGraw-Hill.

The 50 items in Form A-1 could not generate subscales to measure the new variables. To solve this problem, Crites added 25 items to the Screening Form A-2. He selected these items, after try-out on a sample of 7,000 students, from 50 items drawn from the original 1,000-item pool. The empirical criterion for selecting these 25 items differed from the criterion used to select the 50 items in the Screening Form. Crites used a less restrictive definition of developmental phenomena based on conceptual refinements (Crites, 1974a; 1978c). The new criteria called for a systematic relationship to grade but not necessarily a monotonic function. In the end, the 47 items in the five subscales used 28 items from Form A-2 and 19 new items. Crites is developing an unrealism subscale with the 28 unscored items.

Description

The Attitude Scale Screening Form (A-2) is published in an 8-page 8½ × 11-inch booklet. The front page states the title and publishing information; the back page is blank. Page 2 explains the purpose of the inventory, and page 3 explains how to answer the items and mark responses on the IBM answer sheet. The items appear on pages 4 through 7.

The Screening Form takes about 20 minutes to administer and the Counseling Form takes about 30 minutes. Both forms have about a 6th-grade reading level. The manual gives clear instructions for individual administration and a script for group administration. The Scale resembles a survey questionnaire more than a test, so the administrator tells students to indicate their feelings about each item rather than attempt to discern the correct answer. The answer sheets can be scored by hand or computer. The Screening Form (A-2) yields only a total score. The Counseling Form (B-1) yields the screening scale total score and five subscale scores. The manual provides interpretive frequency distributions derived from 74,000 student scores collected between the Fall of 1973 and Spring of 1976. Counselors can use these distributions to convert Screening Form and Counseling Form scores to derived scores and percentiles for students in grades 6 through 12. Nevertheless, Crites prefers that counselors compile and use local norms.

Interpretation

The Screening Form score is designed to indicate the maturity of a student's attitudes toward making a career choice. Higher scores indicate more mature attitudes and thus greater readiness to make a career choice. Crites likens readiness for career planning to reading readiness. Clients below a certain threshold of readiness are neither sufficiently mature nor properly disposed to make a realistic choice. These clients need to develop their attitudes more completely to reach the choice threshold. Unfortunately, the threshold point (i.e., raw score) at

which attitudes are sufficiently developed to produce choice behavior and realistic career planning has not been empirically identified. Crites does not state what score represents the threshold. Instead, he recommends that counselors consider students who score above the 25th percentile as progressing normally and suggests that counselors offer assistance to students who score in the bottom quartile because they may be delayed or impaired in their career development (Crites, 1978a, p. 32).

In interpreting Screening Form scores, counselors should remember that they represent the original five variables defined in Table 12.1, not the five variables measured by the Counseling Form subscales. It is worth noting that the majority of validity data for the Screening Form total score pertains to Form A-1. The screening scores for Forms A-2 and B-1 differ slightly from A-1 in that they contain one different item, score two items differently, and present the items in a different order. Nevertheless, it is probably safe to assume that the validity data for Form A-1 extends to Forms A-2 and B-1.

In contrast to the screening score, the validity for use of the Counseling Form (B-1) subscales has not been established. Only two validity studies have dealt with the subscales (Lopez-Baez, 1981; Stowe, 1985). Crites (1978a, p. 29) advised that while researchers develop the subscales they be considered a research instrument. Because their interpretative validity has not yet been firmly established, many counselors do not interpret subscale scores to clients.

Teaching the Test Model

Instead of interpreting the subscale scores, many counselors interpret the items because they have content and criterion-related validity. In interpreting the items, counselors can draw upon each item's conceptual rationale and empirical data. As rationally-derived items, they have been linguistically explicated as part of a cogent theoretical model. Moreover, as empirically derived items, they have been operationally defined. This combination of theory and research makes CMI items especially suitable for interpretation to clients.

Crites (1974b) claimed that by discussing the items that they answered in the immature direction, clients can incorporate new ideas into their thinking and develop a more mature approach to vocational decision making. He recommended that counselors "teach the test" to clients in order to bring them up to the choice threshold. Simply stated, the logic for teaching the test is that the items state attitudes that the client should hold.

Some counselors "teach the test" by discussing the items a client missed in the order that the items appear in the Scale. Other counselors discuss all the items that a client missed within one subscale then move in turn to items from another subscale until they have discussed all five subscales. This procedure allows counselors to use the subscale items to explain the five attitudinal variables and relate them to the client's decision making. A few counselors teach the test by

organizing the five variables into two groups. Presenting the results in two large chunks helps some clients retain and apply the information. A logical grouping divides the scales into those that deal with planful concern about the future and those that deal with a sense of self-control over one's future.

A concerned approach to decision making is sustained by the attitudes Crites called orientation and involvement. *Orientation* items deal with the client's awareness of the vocational decision-making process. Clients with mature attitudes usually seek to familiarize themselves with how people choose occupations and develop careers. Clients less inclined to orient themselves to how careers develop have vague and inaccurate notions about career choice. When pressed to make a career choice, they feel confused. These clients benefit from consciousness-raising counseling techniques (Skovholt & Hoenninger, 1974) that increase foresight and heighten awareness of career development tasks. When clients have a cognitive schema to sustain career dreams and occupational fantasies, they are ready to involve themselves in the decision-making process.

A client can be familiar with the choice process without getting involved in it. *Involvement* items address whether clients relate themselves to the process of making a choice and actively participate in it. Clients with mature attitudes tend to think about alternative careers and try to relate their present behavior to future goals. Clients who are less inclined to get involved in the vocational decision-making process just do not worry about their future. Often, they prefer to enjoy the present and take life one day at a time. When pressed to make a career choice, they feel anxious. These clients benefit from counseling techniques that help them make their future "real" by populating it with anticipated events and goals that give it shape and substance (Oleksy-Ojikutu, 1986). Clients who are concerned about their futures are ready to take control of the vocational decision-making process.

A sense of control over vocational decision making is sustained by the attitudes Crites called independence, decisiveness, and compromise. *Independence* items deal with self-reliance in making career choices. Immature attitudes incline clients to depend on others to choose for them. *Decisiveness* items deal with commitment to making career choices. Immature attitudes incline clients to feel uncertain and to avoid committing themselves to making a choice. *Compromise* items deal with willingness to acknowledge and concede to the demands of reality. Immature attitudes incline clients to distort or deny aspects of reality which may limit or block their need fulfillment. To avoid anxiety or frustration, clients with immature compromise attitudes rigidly maintain their subjectivity rather than increase their objectivity.

Clients who incompletely develop or lack one or more of these attitudes usually display a dependent, uncertain, or rigid approach to career choice that leads to indecision. These clients typically benefit from behavioral counseling techniques (Woody, 1968) that increase their self-esteem and realism or develop their assertiveness and decisional skills. Clients disposed to independence, de-

cisiveness, and compromise approach career choice with a sense of control because these attitudes facilitate self-reliant, confident, and realistic vocational decision making. Thus, they are ready for content-oriented career counseling.

As a transition to content-oriented assessment or counseling, a few counselors augment their discussions of career concern and control dispositions by discussing three more groups of items from the Attitude Scale. They base these item groups on three variables measured by the Screening Form: conception, orientation toward work, and preference for choice factors (see Table 12.1 for definitions).

To use an alliteration with "C," counselors can follow counseling about vocational decision-making *concern* and *control* with counseling about career *concepts, criteria,* and *choice bases.* Six items (5, 18, 21, 32, 41, and 68) in the Counseling Form deal with clients' conceptions of how to make a career choice. The counselor should try to disabuse clients of any misconceptions expressed in their responses to these items. Six items (6, 11, 26, 29, 47, and 50) deal with the criteria one imposes on making a choice. Originally these items were called orientation-toward-work items in that they referred to whether one sought intrinsic or extrinsic rewards from work. Savickas and Crites (1981) referred to these items as criterion items, that is, client's criteria for defining a good career choice. Counselors can use these items to identify clients who use power, prestige, or possessions as choice criteria and encourage them to consider the role of intrinsic rewards in producing job and life satisfaction.

After discussing a client's choice criteria, the counselor can use four items (2, 8, 17, and 35) to explain the intrinsic criteria on which one should base a career choice: needs, interests, abilities, and values. The counselor should try to convince clients to base their choices on a synthesis of these four factors because using any one factor alone can produce an incongruent career choice. Discussions of choice bases make a smooth transition to administration or interpretation of interest inventories and ability tests.

As noted above, critics argued persuasively that content-oriented elements confounded these three variables. Although they do not reflect the decision-making process itself, these variables do define important attitudes toward a career choice; therefore, they can be used validly in teaching the test. Furthermore, if a counselor discusses them after discussing the five attitudes toward the vocational decision-making process, then this discussion of attitudes toward a career choice makes a smooth transition to content-oriented assessment and counseling.

In summary, clients are ready for content-oriented assessment and counseling when they display concern for and a sense of control over the vocational decision-making process, hold an accurate conception of how to make a choice, express intrinsic criteria for their choices, and want to base their choices on a synthesis of their needs, interests, abilities, and values.

Teaching the Test Materials and Methods

To help counselors interpret Attitude Scale items to clients, Crites (1973) wrote programmed instructional materials to use in teaching the test. For each item, he explained the rationale for the more mature responses. Crites and Savickas (1980) revised the Screening Form rationales based on feedback from counselors and their own experience in using the rationales. They also added rationales for the additional items in the Counseling Form. They suggested that counselors use a three-step cycle in discussing item rationales with a client: (a) nondirective exploration, (b) directive shaping, and (c) active learning. Different types of interviewing responses and goals define each phase in this item teaching cycle.

Non-directive exploration. Counselors begin the cycle by reading an item that the client answered in the immature direction and asking the client to explain the reason for the chosen response. This sets the topic and begins the exploration of the client's outlook (Van Riper, 1974). For example, a counselor might say, "On item 54 you agreed that you would feel better if someone chose for you. What did you have in mind when you answered this question?" To draw out the client's attitude and to probe the beliefs, feelings, and behavioral tendencies associated with it, the counselor may use "nondirective" responses such as open questions, restatement of relevant content, reflection of feeling, silence, and clarification of meaning.

Directive shaping. Having explored the client's outlook, the counselor actively uses responses that elicit and shape a more mature view (Flake, Roach, & Stenning, 1975). The counselor teaches the client the rationale for the item and uses values confrontation (Young, 1979) to create dissonance about immature attitudes toward vocational decision making. During the ensuing discussion the counselor may use responses such as instruction, persuasion, verbal modeling, storytelling, and reinforcement to help clients reduce the felt discrepancy by reconceptualizing their beliefs and developing new attitudes. Counselors use their expertness, trustworthiness, and attractiveness to block unproductive paths to dissonance reduction (e.g., discredit counselor, use counterpersuasion, devalue the issue, seek social support), and confirm client attitude change with encouragement and support (Strong, 1968).

Active learning. When the client verbally expresses an improved outlook, the counselor encourages the client to translate it into goal directed vocational behavior. The counselor may use responses such as behavioral modeling, homework assignments, role playing, and feedback to guide instrumental learning. This completes the three phases in the item discussion cycle. Accordingly, the

counselor moves to the next item that the client answered in the immature direction and repeats the cycle. In exploring the new item, the counselor listens to hear if the client has integrated and generalized pertinent insights that were learned in discussing a previous item. If the earlier learning has not generalized to the new item, then the counselor proceeds to the directive shaping and active learning steps.

After considering each item, the counselor usually summarizes what the client has learned and restates what the client will do to confirm and enact the new attitudes. The counselor may also draw from the client implications that the new decisional attitudes have for choices the client is trying to make in interpersonal, family, or leisure roles. For example, the counselor might say "I hear you now saying that it is important to make your own career choice. I wonder if you think it is okay to rely on people to make other kinds of choices for you?"

Teaching the Test Variations

A few counselors use the item discussion cycle without administering the CMI to clients. Unlike the test interpretation method, the test teaching method does not require that the client take the test. The counselor may just sit down with a client and begin to discuss the items by asking the client to verbally respond to the first item. If the client offers a mature response, the counselor reinforces it and moves to the next item. If the response shows an immature outlook, then the counselor begins the discussion cycle outlined above.

In addition to teaching the test to individual clients, counselors have used the item rationales in process-oriented career counseling groups. These groups do not address which occupational choice (content) is right for each group member, but instead deal with the approach to decision making (process) that is right for everyone in the group. Teaching the test works even more effectively when the counselor enlists group dynamics in the item discussion cycle. For example, those group members who have already developed a particular attitude receive reinforcement and serve as role models to other group members who are still developing that disposition. The group members can help the counselor confirm or contradict the thinking of a client as well as encourage the client to experiment with new attitudes and behaviors.

Although not widely used, other variants of teaching the test have been effective. Healy (1982, pp. 317–321) suggested that counselors reduce client errors and lessen anxiety associated with "instructional counseling" by teaching the concepts assessed by the scale before administering it and discussing incorrect answers. Savickas and Crites (1981) designed and field tested a course to teach the Counseling Form item rationales to high school students. A teachers' guide for the course includes detailed lesson plans, teaching tips, overhead transparencies, and student handouts. Freeman (1975) wrote and pilot tested ten sociodramas to teach the Screening Form variables to students. The sociodramas

are semi-structured; an opening dialogue sets the problem and leaves the conclusion of the drama to the student actors. A community college placement center modified the item rationales for a series of "Dear Abby"-type articles in their newsletter for students. Other innovative ways of teaching the test probably will appear as more counselors use the item rationales.

Technical Information

Because of its extensive use in theoretical research and program evaluation, the Attitude Scale has a well-articulated nomological network and strong support for its validity. The large volume of research reflects the fact that the Attitude Scale was the first objective measure of career maturity and thus widely used during the 1970s to evaluate career education programs and career counseling interventions. At least 400 studies involving the Attitude Scale have appeared as published journal articles or unpublished doctoral dissertations. To approach this voluminous literature, one should begin by reading Crites' (1971) monograph on the Attitude Scale and the *Theory and Research Handbook* (Crites, 1978c). After this introduction, the reader should review a Counseling Form validity study (Stowe, 1985) and several Screening Form validity studies (Alvi & Khan, 1982; Chodzinski & Randhawa, 1983; Hanna & Neely, 1978; Khan & Alvi, 1983; and Neely & Hanna, 1977). So prepared, the reader is ready to consider critiques of the Attitude Scale.

Reviews

After hundreds of studies, four questions about the Attitude Scale's validity remain unanswered. The first question addresses the Attitude Scale's construct validity. Reviewers have disagreed with several decisions that Crites made in constructing the scale. Super (1969) and Katz (1978) criticized the operational definition and validity of the construct measured by the Attitude Scale because 43 of the 50 Screening Form (A-1) items were keyed false, that is, written to reflect what career maturity is not. Westbrook and Mastie (1973) expressed concern about the large number of items with low positive ($< .30$) and high negative biserial correlations with the total score. They argued that, even in a factorially complex instrument, all the items should relate positively to the total score. They wondered what the items with negative biserial correlations contribute to the principal construct measured by the scale. They also questioned whether the true/false response scale adequately reflects respondents' attitudes.

The second question addresses an aspect of the Attitude Scale's criterion-related validity. Hansen (1974) called for longitudinal studies to examine the Attitude Scale's predictive validity. Most of the available criterion-related validity data is concurrent. For example, Westbrook (1976) showed that students with higher Screening Form scores made more realistic vocational choices. Although

a few longitudinal studies have been conducted (Collins, 1986; Herr, Good, McCloskey, & Weitz, 1982), we still do not know if students with higher Attitude Scale scores more accurately predict their future occupation or achieve greater job satisfaction and success. Researchers need to empirically investigate the assumption that career maturity during adolescence relates to career adaptability and work adjustment during adulthood.

The third question addresses the Attitude Scale's convergent and discriminant validity. Westbrook and Mastie (1973) have questioned the Attitude Scale's convergent validity because it correlates more strongly with CDI cognitive scales than with CDI attitude scales. Researchers (Palmo & Lutz, 1983; Westbrook, 1982) have also challenged the discriminant validity of the Attitude Scale because it correlates with measures of mental ability. Crites, Wallbrown, and Blaha (1985) have countered these arguments, but the issue remains unresolved.

The fourth question addresses the Scale's validity for use. Hansen (1974) called for research to determine the usefulness of the Scale in career guidance. Katz (1978, p. 1563) expressed "reservations about the strong claims in the handbook and manual of categorical validity for various uses of the Scale in guidance" and Sorenson (1974) considered the validity data for the claimed uses unpersuasive. Zytowski (1978) faulted Crites for not using available data to distinguish the valid uses of the Scale. Cronbach's (1980) idea of validity for use should guide future studies of the diagnostic subscales in the Counseling Form.

Research Directions

At this time, the most pressing research need relative to the Attitude Scale is a literature review. The last literature review appeared in the *Theory and Research Handbook* (Crites, 1978c). A voluminous literature dealing with the CMI has appeared since 1975, the latest reference in the *Handbook* bibliography. A systematic synthesis of the accumulated evidence would allow theorists, researchers, and practitioners to make the fullest use of the varied information offered by the numerous studies. It might also help resolve the controversy surrounding the CMI-Attitude Scale's relationship with intelligence (Crites, et al., 1985; Westbrook, 1982).

The most pressing empirical research need is for studies of the validity of the five subscales. In order for these subscales to be helpful to counselors, their validity for use must be formally established. Research on interpreting the Attitude Scale should identify, if possible, the "threshold" of readiness to make a realistic career choice. It should also investigate the effect of teaching the test on career choice decidedness and realism. If teaching the test increases decidedness and realism, then investigators should examine the relative effectiveness of different instructional methods such as individual counseling, group counseling, programmed learning, and behavioral modeling.

USES OF THE MEASURES

This section deals with the selection and use of career choice process measures. The first part compares and contrasts the three prominent measures and offers guidelines for their use. The second part discusses suggestions on how to interpret scores from process measures to clients. The third part presents a case that illustrates the use of process measures in career counseling.

The Measures Compared

In the introduction to the present chapter, I noted that career choice process scales measure either difficulties or resources. Having reviewed the three most prominent scales, we are now prepared to further distinguish the scales according to their various uses. Obviously the main distinction remains as stated in the introduction. The CDS deals with indecision whereas the CDI and CMI deal with career maturity. More precisely, the CDS addresses adaptation to the tasks involved in developing a career choice. The CDS Certainty Scale helps counselors make a *differential diagnosis* of a client's decisional status, that is, degree of decidedness. The CDS Indecision Scale helps counselors assess the amount and variety of difficulties that delay clients' adaptation to career choice tasks. The CDI and CMI address not adaptation but adaptability, that is, the personal resources one can draw upon to form behavioral responses to the vocational development tasks of crystallization, specification, and implementation. In particular, the CDI measures planning and exploration attitudes and informational and decisional competencies that people use to develop a realistic career choice. Counselors can use the CDI to make a *developmental diagnosis* of clients' readiness for coping with career choice tasks. In contrast, the CMI-Attitude Scale measures attitudes toward career choice (Form A-2 or B-1 total score) and disposition for vocational decision making (Counseling Form B-1 subscales). Counselors can use the CMI to make a *decisional diagnosis* of clients' readiness to make realistic career choices. The differential, developmental, and decisional perspectives on the career choice process focus on distinct variables, yet the variables of difficulties, readiness, and dispositions may eventually be integrated into comprehensive career choice process measures (Jepsen & Prediger, 1981) and diagnostic classification schemes (Rounds & Tinsley, 1984, p. 156).

In addition to informing diagnosis for counseling, each of the career choice process inventories discussed in this chapter has been used in evaluation, research, screening, and surveys. Each inventory has unique characteristics that make it likely to be selected for a particular purpose. This is most true with regard to research and evaluation.

The best documented use of the inventories is in research on treatment outcomes and evaluation of program effects. When selecting an inventory for program evaluation, evaluators should choose the one that most closely coincides

with objectives of the program: the CDS to measure decisional status and difficulties, the CDI to measure developmental task mastery attitudes and competencies, and the CMI-Attitude Scale to measure attitudes toward vocational decision making. Although this selection criterion seems obvious, some evaluators have overlooked it because the inventory titles describe in general, not in particular, what they measure. In selecting an inventory for a research study, investigators should choose the one that measures the variables being examined. An empirical comparison of the inventories reported by Jepsen and Prediger (1981) distinguished among the measures and can help researchers make a more informed choice. An article by Hilton (1974) offers suggestions on selecting an evaluation instrument and analyzing evaluation data.

Many counselors select the CDS and CMI Screening Form (A-2) to quickly screen large groups of students. The CMI Screening Form works particularly well with junior and senior high school students. The CDS works better than the CMI with college students (Fretz & Leong, 1982) because it addresses major choice and has a higher ceiling. Students who are identified as needing assistance can be invited to orientation programs and career workshops or informed about opportunities for group guidance and individual counseling. Some college counselors have used the CDS to help students choose between personal and career development courses. They advise students with lower scores to take the personal development course first, whereas they advise students with higher scores to take only the career choice course.

When planning guidance programs and career education curricula, counselors can use career choice measures to survey students' needs. The CDI and CMI Counseling Form (B-1) are particularly useful in this regard. Because they each measure five variables, they provide multidimensional data as a basis for intervention design. With these data, counselors can design guidance programs and career education curricula to address the unique needs of the participants. Survey results can also be used to structure enrichment opportunities. For example, one college has administered the CDI to all incoming freshmen. At the first meeting with their academic advisors, students are given a booklet that explains their CDI results. The advisors engage students in "career conversations" to plan exploration experiences and select elective courses based upon CDI results. During the year, the counseling center staff invites students to different types of career development workshops based on their CDI profiles. The CDS (Savickas, Alexander, Jonas, & Wolf, 1986) and the CMI (Crites, 1978a) have been used similarly.

Using Process Assessments in Counseling

Several writers have discussed the use of career choice process measures in counseling. The architects of the Developmental Assessment and Counseling Model view test interpretation as a prime counseling method. Super (1983)

enjoined counselors to make CDI results "part of the active thinking of the client." In a book edited by Super, Jordaan (1974) used four case examples to discuss how interpreting CDI results can help clients "repair developmental deficits" and "build on strengths." In the same book, LoCascio (1974) described problems in using career choice process measures with school dropouts and ethnic minorities, and Richardson (1974) discussed the use of these measures in counseling girls and young women. Crites (1974b; 1981) asserted that counselors should use process measures to enhance clients' self-understanding and improve their thinking and problem solving as a foundation for future coping with career development tasks.

The writers seem to agree that the best counseling use of the measures involves focusing on developmental possibilities and discussing experiences that could facilitate clients' career development. Crites (1981) addressed how to meaningfully communicate this information to clients in an article on "integrative test interpretation." He suggested that counselors use the measures to focus on aspects of career development which are particularly difficult for the client, embed information from the results in discussions of these difficulties, respond to the clients' verbalizations rather than interpreting the profile, and attend to the client's choice process as opposed to the measurement instrument.

A Case Illustration

The following case illustrates one way of using career choice process measures to improve a client's thinking about career choice, identify developmental possibilities, and select maturation experiences. A 20-year-old college student, dissatisfied with school, sought career counseling at the behest of a concerned friend. The student was about to successfully complete the third year of a 6-year accelerated program that led to Bachelor of Science and Doctor of Medicine degrees. However, as he was completing his first year in medical school, he experienced serious misgivings about his decision to become a physician. He felt uncomfortable with his classmates because they had different interests and lonely because school demands precluded time for old friends with similar interests. Although he passed every course, he claimed that it required tremendous willpower to study because he disliked the subject matter. In counseling, he wanted to reconsider his career choice of medicine, consider his specialty choice within medicine (i.e., psychiatry versus family medicine), and identify career alternatives outside of medicine. After a brief intake interview, I told him that I wanted more data about the career difficulties he was experiencing, his resources for resolving these difficulties, and the pattern of his vocational interests. To provide more data, he agreed to take the CDS, CDI, and the Jackson Vocational Interest Survey (JVIS; Jackson, 1977) during the next week and to return for counseling when they had been scored.

I assigned him the CDS to acquire specific information about the difficulties

that were thwarting his adaptation to the task of specifying the details of his career choice with certainty and commitment. I assigned him the CDI to learn about the maturation of the attitudes and competencies that he would need to develop his career choice. I did not use the CMI with this client because I was more interested in his readiness for vocational development task coping in general rather than his disposition toward vocational decision making in particular. Based on the intake interview, he impressed me as having a pseudo-crystallized preference for medicine. CDI data is better suited than CMI data to objectively assess this subjective impression. For a case study that illustrates the use of the CMI, counselors may read the case of Karen as presented by Crites (1976).

In hand scoring the CDS, I determined that the client scored three points on the CDS Certainty Scale (i.e., two points for "only slightly like me" for major choice certainty plus one point for "not at all like me" for career choice certainty). The client scored 47 points on the CDS Indecision Scale. This raw score converted to the 99th percentile for decision-making difficulties among college students. In my experience, such an extreme score appears to mean that a person is in a state of career crisis and feels overwhelmed by career concerns. His response to the open-ended question (i.e., CDS item 19) coincided with this interpretation.

> I grew up in hospitals and it was "given" that I was going to be a doctor. I really don't know what a doctor does. It seems that one has to be "perfect" to be an M. D. Therefore, I can't be a good one. I am stuck. I still don't know what I would be good at, if anything. So, if I don't have medicine, I don't have anything. I am concerned and confused by everything.

The client rated five items as "4" or "exactly like me": CDS items 7, 8, 10, 13, and 14. I formed a composite statement of the client's salient decisional difficulties as stated in these items.

> I do not know what my abilities and interests are because I have not given much thought to my career choice until now. I feel lost and discouraged because I am not used to making my own decisions. Everything about choosing seems so uncertain but I want to be absolutely certain that I make the right choice. However, none of the careers I know about seem ideal for me so I need more information about careers.

The CDI results, as prepared by the commercial scoring service, appear in Table 12.3. After considering the CDS data, I turned to the CDI profile to understand how the client's decisional difficulties may have developed and to begin to formulate ideas about what he could do to outgrow the difficulties. Two features of the CDI profile drew my attention. The first feature involved the Career Planning Scale (CP). By itself, the client's extremely low CP scale score indicated that he did not look ahead to foresee himself in the world of work nor

TABLE 12.3
The Career Development Inventory: College Form (CDI)

▶ *NAME:* ▶ *ID:* 00000001 ▶ *SEX:* M ▶ *DATE SCORED:* 12/ 4/87

Year : SENIOR
Major : Omitted Items—Part I: 0 Part II: 0
Occupational Group Preference: D Social Science: Research

	Standard Scores	*Percentile Local National*	*Percentile*
			10 20 30 40 50 60 70 80 90
CP	69	1	* ----------
CE	99	53	----------*---------
DM	103	46	----------*----------
WW	96	31	------*----------
CDA	82	7	* ----------
CDK	99	33	----*----------
COT	86	10	* ----------
PO	117	74	----------*

Descriptions of CDI Scales: 10 20 30 40 50 60 70 80 90

Career Planning (CP): How involved you are in thinking about your future and making career plans.

Career Exploration (CE): How able you have been to find and utilize good sources of career planning information.

Career Decision-Making (DM): How able you are to solve problems involving vocational and educational choices.

World-of-Work Information (WW): How much you know about jobs and what it takes to find and succeed at one.

Career Development Attitudes (CDA): A combination of your Career Planning and Career Exploration scores.

Career Development Knowledge and Skills (CDK): A combination of your Career Decision-Making and World-of-Work scores.

Career Orientation Total (COT): A combination of your scores on the CP, CE, DM, and WW scales.

Knowledge of Preferred Occupation (PO): How much you know about occupations in the group to which your preferred occupation belongs.

involve himself in planning his future. The score coincided with his statement during the intake interview that he has trouble seeing himself as a competent physician. In relation to the Career Exploration, World of Work, and Decision Making scores, the CP score suggested that the client may be actively avoiding career planning in that he has not applied available exploration, comprehension, and problem-solving resources to relate himself to the world of work. The second CDI profile feature that draw my attention involved the Preferred Occupational Group Scale (PO). By itself, I was surprised that he had chosen Social Science Research as his preferred field and that he had a good fund of knowledge about this field. I wondered if he had explored occupations in this field. In relation to other CDI scales, I noted that PO exceeded his World of Work score. Apparently, he is somewhat naive about occupations in general but knows about occupations in social science research.

Next I considered the JVIS. The JVIS includes work-style scales along with more traditional interest scales. On work-style scales, the client scored low on independence, planfulness, and interpersonal confidence and high on stamina, job security, and accountability. On vocational interest scales, he scored "high," but not "very high," on life science, social science, medical service, mathematics, technical writing, and social service.

To me the data coincided with a diagnosis of pseudo-crystallized preference preventing specification of a choice with certainty and commitment. The CDS revealed difficulties in developing a clear and stable picture of talents, interests, and goals and difficulty in emotionally accepting a preference he was already implementing. The CDI revealed a naivete about occupations and a lack of involvement in planning his vocational future. The JVIS revealed an unfocused interest pattern and a disposition toward passively following rules rather than assertively choosing and planning his own behavior. As a group, his diffused vocational interests, occupational naivete, and passive work style seemed to explain his self-reported difficulty in specifying the details of his career choice with certainty and commitment. Moreover, as a group they form a pattern, which suggests that specification is not the problem but rather the symptom of an earlier problem. Based on the inventory data, I concluded that the client's career choice of physician was not holding up under pressures to perform in medical school and to elaborate a specialty choice because it followed from a pseudo-crystallized preference for a career in medicine. The preference seems to be pseudo-crystallized in that he had failed to actively involve himself in the career choice process (CP score) and to analyze essential elements of his preference for medicine (PO score exceeded WW score). Furthermore, the JVIS work-style scores suggested the possibility that his preference for medicine may not have been a self-chosen goal. Instead, his preference may have resulted from the "interplay between the emotional needs of two persons—the individual making the choice and the individual who influences him" (Ginzberg, et al., 1951, p. 110).

At our next meeting, I used the integrative interpretation approach described

by Crites (1981) to present my assessment of the inventory scores. As recommended by Guardo (1975, 1977) in her writings on developmental existentialism, I used the client's vocational development pattern as a backdrop for understanding and appreciating his unique experiences and opinions. In discussing my assessment with him, I highlighted his developmental pattern to help him articulate the course, pace, and scope of his existential experiences. My goal for this session was to combine our perspectives on his experiences to identify problems in and opportunities for developing a realistic career choice.

After orienting him to this goal, I began the session by discussing his response to CPS item 19. During the discussion, the client orally elaborated his written response and described pervasive feelings of anxiety caused by his desire to be certain about and comfortable with his career choice. Next, we considered the CDS items which he rated as "4" by discussing my composite statement of his decisional difficulties. The student endorsed this statement as "him." He self-explored each of the four components in turn: (a) he lacked self-knowledge and planfulness because he had always passively succumbed to an aggressive father who demanded that he become a physician; (b) he lacked decision-making skill because he relied on his father's decisions; (c) he wanted to make the ideal choice because he saw the bitterness that had resulted from his father being trapped in the wrong career; and (d) he lacked occupational information because of his early fixation on a career in medicine.

I used his self-disclosures about early fixation on medicine as a bridge to the CDI data. I informed him that the CDI indicated that his early fixation explained many of his current career concerns. To resolve these concerns, he might need to increase his foresight, deliberate more about the outcomes of his decisions, use daydreams to conceptualize himself in different kinds of work, explore several fields, and become more self-sufficient in decision making. I weaved the JVIS work-style data into discussing the last idea. He agreed that he needed to take positive steps on his own behalf rather than passively accept his father's career commands. I did not mention the JVIS interest scores because they were not yet pertinent to the discussion. During the remainder of the session, I responded empathically to his anxiety about his future, fear of confronting his father, and disgust with himself for still making decisions like a child. We concluded the session with an agreement to meet again to design a plan to develop his autonomy and career choice.

During the planning session, we concentrated on two themes: transforming the client's relationship with his father and developing his career choice. Because this case is presented to illustrate the use of career choice process measures in counseling, and not interest inventory interpretation or counseling techniques, I will only summarize the plan and its results. The client decelerated his movement through the accelerated B.S./M.D. program by asking to spend seven rather than six years in it. He used the extra year, at the end of his first year in medical school, to implement his growth plan. During this year he took no courses at the

medical school while his classmates pursued full-time studies there. Instead, he: (a) completed his B. S. requirements as a half-time student, (b) used electives in his B. S. curriculum to explore careers in clinical psychology, medical sociology, and journalism, (c) worked 20 hours per week for six months as a biochemistry laboratory technician, (d) "shadowed" a psychiatrist for a week, (e) spent the summer away from home working as an intern in a public health program, (f) participated in an assertiveness training course, (g) received short-term counseling to increase his self-esteem and reduce his obsessiveness, and (h) studied judo. These activities enhanced his self-esteem and his ability to make independent decisions. The activities also strained his relationship with his father, yet the client and his father both felt that their relationship was improving. At the end of this year, the client transferred to another university where he enrolled in a graduate program in epidemiology. He planned to become an epidemiologist and possibly teach at a medical school. On follow-up a year later, he reported success in and satisfaction with his graduate program as well as increased certainty about his career in epidemiology.

CONCLUSION

This chapter explained how some counselors view career choice as a sequence of developmental tasks from crystallizing field and level preferences, to specifying a choice, and then implementing that choice. Students must adapt to social expectations that they master these tasks in a viable and suitable manner. To facilitate task mastery, comprehensive career counseling deals with both the process of vocational decision making and the content of career choice.

Counselors begin comprehensive career counseling by making a differential diagnosis of the client's vocational decision-making status, that is, identifying the tasks which a client faces and the difficulties experienced. With clients who are ready to specify a choice, the counselor proceeds to assist the client by using content-oriented counseling methods and materials. For those clients who are not ready, the counselor makes a developmental diagnosis of the client's attitudes and competencies for mastering the tasks of crystallizing preferences and specifying a choice. Furthermore, for those clients who need to develop the maturity to specify a choice, the counselor may make a decisional diagnosis of the client's disposition for vocational decision making.

Three scales that many counselors use to assess clients' career choice process were presented. The three scales may each be used to make all three of the diagnoses, yet each scale is especially useful for a particular assessment: the Career Decision Scale for differential diagnosis, the Career Development Inventory for developmental diagnosis, and the Career Maturity Inventory Attitude Scale for decisional diagnosis. The usefulness of each scale for a particular type of diagnosis probably explains counselors' practice of using the CDS to screen

students for decision-making difficulties, the CDI to survey students for needs assessment in program development and evaluation, and the CMI to select students' individual counseling topics.

The instrument authors' ingenuity in theory construction, perseverance in instrument development, and leadership in research production has helped counselors expand occupational guidance to career counseling. In the future, research and reflection on the inventories' use in career counseling will probably result in new career choice process assessment instruments that measure a broader range of variables (Jepsen & Prediger, 1981), offer decision rules for diagnoses, and prescribe differential interventions for clients (Fretz & Leong, 1982; Rounds & Tinsley, 1984). The new instruments will build on the successes of the Career Decision Scale, Career Development Inventory, and the Career Maturity Inventory.

REFERENCES

Allis, M. (1984). [Review of the *Career Decision Scale*]. *Measurement and Evaluation in Counseling and Development, 17,* 98–100.

Alvi, S. A., & Khan, S. B. (1982). A study of the criterion-related validity of Crites' Career Maturity Inventory. *Educational and Psychological Measurement, 42,* 1285–1288.

Barak, A., & Friedkes, R. (1981). The mediating effects of career indecision and subtypes on career counseling effectiveness. *Journal of Vocational Behavior, 20,* 120–128.

Bell, H. M. (1940). *Matching youth and jobs.* Washington, D.C.: American Council on Education.

Chodzinski, R. T., & Randhawa, B. R. (1983). Validity of Career Maturity Inventory. *Educational and Psychological Measurement, 43,* 1163–1172.

Collins, J. E. (1986). Career maturity as a predictor of job adaptation: A longitudinal study (Doctoral dissertation, Kent State University, 1985). *Dissertation Abstracts International, 47,* 357A.

Crites, J. O. (1961). A model for the measurement of vocational maturity. *Journal of Counseling Psychology, 8,* 255–259.

Crites, J. O. (1964). Proposals for a new criterion measure and research design. In H. Borow (Ed.), *Man in a world at work* (pp. 324–340). Boston: Houghton Mifflin.

Crites, J. O. (1965). Measurement of vocational maturity in adolescence: I. Attitude Scale of the Vocational Development Inventory. *Psychological Monographs, 79*(2, Whole No. 595).

Crites, J. O. (1971). *The maturity of vocational attitudes in adolescence.* Washington, D. C.: American Personnel and Guidance Association.

Crites, J. O. (1973). *Rationales for Career Maturity Inventory Attitude Scale (Form A-1) items.* Unpublished manuscript.

Crites, J. O. (1974a). Methodological issues in the measurement of career maturity. *Measurement and Evaluation in Guidance, 6,* 200–209.

Crites, J. O. (1974b). A reappraisal of vocational appraisal. *Vocational Guidance Quarterly, 22,* 272–279.

Crites, J. O. (1976). Career counseling: A comprehensive approach. *Counseling Psychologist, 6,* 2–12.

Crites, J. O. (1978a). *Administration and Use Manual for the Career Maturity Inventory* (2nd ed.). Monterey, CA: CTB/McGraw-Hill.

Crites, J. O. (1978b). *The Career Maturity Inventory.* Monterey, CA: CTB/McGraw-Hill.

Crites, J. O. (1978c). *Theory and research handbook for the Career Maturity Inventory* (2nd ed.). Monterey, CA: CTB/McGraw-Hill.

Crites, J. O. (1981). Integrative test interpretation. In D. H. Montross & C. J. Shinkman (Eds.), *Career development in the 1980s: Theory and Practice* (pp. 161–168). Springfield, IL: Charles C. Thomas.

Crites, J. O., & Savickas, M. L. (1980). *Rationales for Career Maturity Inventory Attitude Scale (Form B-1) items.* Unpublished manuscript.

Crites, J. O., Wallbrown, F. H., & Blaha, J. (1985). The Career Maturity Inventory: Myths and realities—A rejoinder to Westbrook, Cutts, Madison, and Arcia (1980). *Journal of Vocational Behavior, 26,* 221–238.

Cronbach, L. J. (1980). Validity on parole: How can we go straight? *New Directions for Testing and Measurement, 5,* 99–108.

Flake, M. H., Roach, A. J., Jr., & Stenning, W. F. (1975). Effects of short-term counseling on career maturity of tenth-grade students. *Journal of Vocational Behavior, 6,* 73–80.

Forrest, D. J. (1971). Construction and validation of an objective measure of vocational maturity for adolescents (Doctoral dissertation, Columbia University, Teachers College, 1971). *Dissertation Abstracts International, 32,* 3088A.

Freeman, M. (1975). A comparison of the relative effectiveness of two instructional methods for developing attitudinal dimensions of career maturity in adolescents (Doctoral dissertation, Kent State University, 1974). *Dissertation Abstracts International, 35,* 6583A.

Fretz, B. R., & Leong, F. T. L. (1982). Career development status as a predictor of career intervention outcomes. *Journal of Counseling Psychology, 29,* 388–393.

Ginzberg, E., Ginsburg, S. W., Axelrad, S., & Herma, J. L. (1951). *Occupational choice: An approach to a general theory.* New York: Columbia University Press.

Gordon, C. (1970). *Looking ahead: Self-conceptions, race, and family as determinants of adolescent orientation to achievement.* Washington, D.C.: American Sociological Association.

Guardo, C. J. (1975). The helping process as developmental existentialism. *Personnel and Guidance Journal, 53,* 493–499.

Guardo, C. J. (1977). Toward growth of adolescents. *Personnel and Guidance Journal, 55,* 237–241.

Hanna, G. S., & Neely, M. A. (1978). Discriminant validity of Career Maturity Inventory Scales in grade 9 students. *Educational and Psychological Measurement, 38,* 571–574.

Hansen, J. C. (1974). [Review of J. O. Crites, *Career Maturity Inventory*]. *Journal of Counseling Psychology, 21,* 168–172.

Hansen, J. C. (1985). [Review of *Career Development Inventory*]. *Measurement and Evaluation in Guidance, 17,* 220–224.

Harmon, L. W. (1985). [Review of *Career Decision Scale*]. In J. V. Mitchell, Jr. (Ed.), *Ninth Mental Measurements Yearbook* (Vol. 1) (p. 270). Lincoln, NE: The University of Nebraska Press.

Harren, V. A. (1978). *Assessment of Career Decision Making: Counselor/instructor guide.* Unpublished manuscript, Southern Illinois University, Carbondale.

Hartman, B. W., Fuqua, D., & Jenkins, S. J. (1988). Multivariate generalizability analysis of three measures of career indecision. *Educational and Psychological Measurement, 48,* 61–68.

Hartman, B. W., Utz, P. W., & Farnum, S. O. (1979). Examining the reliability and validity of an adapted scale of educational-vocational undecidedness in a sample of graduate students. *Journal of Vocational Behavior, 15,* 224–230.

Healy, C. C. (1982). *Career development: Counseling through the life stages.* Boston: Allyn and Bacon.

Heath, D. H. (1976). Adolescent and adult predictors of vocational adaptation. *Journal of Vocational Behavior, 9,* 1–19.

Herman, D. O. (1985). [Review of *Career Decision Scale*]. In J. V. Mitchell, Jr. (Ed.), *The Ninth*

Mental Measurements Yearbook (Vol. 1) (pp. 270–271). Lincoln, NE: University of Nebraska Press.

Herr, E. L., Good, R. H., III, McCloskey, G., & Weitz, A. D. (1982). Secondary school curriculum and career behavior in young adults. *Journal of Vocational Behavior, 21,* 243–253.

Hilton, T. L. (1974). Using measures of vocational maturity in evaluation. In D. E. Super (Ed.), *Measuring vocational maturity for counseling and evaluation* (pp. 145–159). Washington, D.C.: National Vocational Guidance Association.

Holland, J. L. (1966). *The psychology of vocational choice.* Waltham, MA: Ginn & Company.

Holland, J. L., Daiger, D. C., & Power, P. G. (1980). *My vocational situation.* Palo Alto, CA: Consulting Psychologists Press.

Holland, J. L., & Nichols, R. C. (1964). The development and validation of an indecision scale: The natural history of a problem in basic research. *Journal of Counseling Psychology, 11,* 27–34.

Jackson, D. N. (1977). *Jackson Vocational Interest Survey.* Port Huron, MI: Research Psychologists Press.

Jepsen, D. A., & Prediger, D. J. (1981). Dimensions of adolescent career development: A multiinstrument analysis. *Journal of Vocational Behavior, 19,* 350–368.

Jones, L. K., & Chenery, M. F. (1980). Multiple subtypes among vocationally undecided college students: A model and assessment instrument. *Journal of Counseling Psychology, 27,* 469–477.

Jordaan, J. P. (1974). The use of vocational maturity instruments in counseling. In D. E. Super (Ed.), *Measuring vocational maturity for counseling and evaluation* (pp. 113–121). Washington, D.C.: National Vocational Guidance Association.

Katz, M. R. (1978). [Review of J. O. Crites, *Career Maturity Inventory*]. In O. K. Buros (Ed.), *The Eighth Mental Measurement Yearbook* (Vol. 2) (pp. 1562–1565). Highland Park, NJ: Gryphon Press.

Kazin, R. I. (1976, August). *Educational/vocational indecision questionnaire: Replication of a factor analysis.* Paper presented at the meeting of the American Psychological Association, Washington, D.C.

Khan, S. B., & Alvi, S. A. (1983). Educational, social, and psychological correlates of vocational maturity. *Journal of Vocational Behavior, 22,* 357–364.

LoCascio, R. (1974). The vocational maturity of diverse groups: Theory and measurement. In D. E. Super (Ed.), *Measuring vocational maturity for counseling and evaluation* (pp. 123–133). Washington, D.C.: National Vocational Guidance Association.

Lopez-Baez, S. I. (1981). A study of career consciousness: Temporal experience and career maturity (Doctoral dissertation, Kent State University, 1980). *Dissertation Abstracts International, 41,* 3427A.

Myers, R. A., Lindeman, R. H., Thompson, A. S., & Patrick, T. A. (1975). Effects of educational and career exploration system on vocational maturity. *Journal of Vocational Behavior, 6,* 245–254.

Neely, M. A., & Hanna, G. S. (1977). A study of the concurrent validity of the Career Maturity Inventory. *Educational and Psychological Measurement, 37,* 1087–1090.

Nevill, D. D., & Super, D. E. (1988). Career maturity and commitment to work in university students. *Journal of Vocational Behavior, 32,* 139–151.

Oleksy-Ojikutu, A. E. (1986). The career time-line: A vocational counseling tool. *Career Development Quarterly, 35,* 47–52.

Osipow, S. H. (1983). *Theories of career development* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Osipow, S. H. (1987). *Career Decision Scale Manual.* Odessa, FL: Psychological Assessment Resources.

Osipow, S. H., Winer, J. L., Koschier, M., & Yanico, B. (1975). A modular approach to self-counseling for vocational indecision using audio-cassettes. In L. Simpson (Ed.), *Audio-visual media in career development.* Bethlehem, PA: College Placement Council.

Osipow, S. H., Carney, C. G., & Barak, A. (1976). A scale of educational-vocational undecidedness: A typological approach. *Journal of Vocational Behavior, 9,* 233–243.

Osipow, S. H., Carney, C. G., Winer, J. L., Yanico, B., & Koschier, M. (1976). *The Career Decision Scale* (3rd revision). Columbus, OH: Marathon Consulting & Press and (1987) Odessa, FL: Psychological Assessment Resources, Inc.

Palmo, A. J., & Lutz, J. G. (1983). The relationship of performance on the CMI to intelligence with disadvantaged youngsters. *Measurement and Evaluation in Guidance, 16,* 139–148.

Parsons, F. (1909/1967). *Choosing a vocation.* New York: Agathon Press.

Punch, K. F., & Sheridan, B. E. (1985). Some measurement characteristics of the Career Development Inventory. *Measurement and Evaluation in Guidance, 17,* 196–202.

Richardson, M. S. (1974). Vocational maturity in counseling girls and women. In D. E. Super (Ed.), *Measuring vocational maturity for counseling and evaluation* (pp. 135–143). Washington, D.C.: National Vocational Guidance Association.

Rogers, W. B., & Westbrook, B. W. (1983). Measuring career indecision among college students: Toward a valid approach for counseling practitioners and researchers. *Measurement and Evaluation in Guidance, 16,* 78–85.

Rounds, J. B., Jr., & Tinsley, H. E. A. (1984). Diagnosis and treatment of vocational problems. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (pp. 137–177). New York: Wiley & Sons.

Savickas, M. L. (1984). Career maturity: The construct and its assessment. *Vocational Guidance Quarterly, 32,* 222–231.

Savickas, M. L. (1986). Career time perspective in special populations. In E. A. Whitfield, H. W. Drier, & D. Hickey (Eds.), *Improving career development through counselor education programs* (pp. 57–62). Columbus, OH: Ohio Department of Education.

Savickas, M. L., Alexander, D. E., Jonas, A. P., & Wolf, F. M. (1986). Difficulties experienced by medical students in choosing a specialty. *Journal of Medical Education, 61,* 467–469.

Savickas, M. L., Alexander, D. E., Osipow, S. H., & Wolf, F. M. (1985). Measuring specialty indecision among career decided students. *Journal of Vocational Behavior, 27,* 356–367.

Savickas, M. L., & Crites, J. O. (1981). *Career decision-making: Teaching the process.* Unpublished manuscript.

Shimizu, K., Vondracek, F. W., Schulenberg, J. E., & Hostetler, M. (1988). The factor structure of the Career Decision Scale: Similarities across selected studies. *Journal of Vocational Behavior, 32,* 213–225.

Skovholt, T. M., & Hoenninger, R. W. (1974). Guided fantasy in career counseling. *Personnel and Guidance Journal, 52,* 693–696.

Slaney, R. B. (1978). *Factor replication of the Career Decision Scale.* Unpublished data, Southern Illinois, Carbondale, IL.

Slaney, R. B. (1985). [Review of S. H. Osipow, C. G. Carney, J. L. Winer, B. Yanico, & M. Koschier, *Career Decision Scale*]. In D. J. Keyser & R. C. Sweetland (Eds.), *Test critiques* (Vol. 2) (pp. 138–143). Kansas City, MO: Test Corporation of America.

Slaney, R. B., Palko-Nonemaker, D., & Alexander, R. (1981). An investigation of two measures of career indecision. *Journal of Vocational Behavior, 18,* 92–103.

Slaney, R. B., Stafford, M. J., & Russell, J. E. A. (1981). Career indecision in adult women: A comparative and descriptive study. *Journal of Vocational Behavior, 19,* 335–345.

Sorenson, G. (1974). [Review of J. O. Crites, *Career Maturity Inventory*]. *Measurement and Evaluation in Guidance, 7,* 54–57.

Stowe, R. W. (1985). Convergent and discriminant validity of Crites's Career Maturity Inventory Attitude Scale, Counseling Form B-1. *Educational and Psychological Measurement, 45,* 763–770.

Strong, E. K. (1943). *Vocational interests of men and women.* Stanford: Stanford University Press.

Strong, S. R. (1968). Counseling: An interpersonal influence process. *Journal of Counseling Psychology, 15,* 215–224.

Super, D. E. (1955). The dimensions and measurement of vocational maturity. *Teachers College Record, 57,* 151–163.

Super, D. E. (1969). Vocational development theory in 1988: How will it come about? *Counseling Psychologist, 1,* 9–14.

Super, D. E. (Ed.). (1974). *Measuring vocational maturity for counseling and evaluation.* Washington, D.C.: National Vocational Guidance Association.

Super, D. E. (1983). Assessment in career guidance: Toward truly developmental counseling. *Personnel and Guidance Journal, 61,* 555–562.

Super, D. E., & Forrest, D. J. (1972). *Career Development Inventory, Form I: Preliminary manual.* (Mimeo). New York: Columbia University, Teachers College.

Super, D. E., & Nevill, D. D. (1984). Work role salience as a determinant of career maturity in high school students. *Journal of Vocational Behavior, 25,* 30–44.

Super, D. E., & Overstreet, P. L. (1960). *The vocational maturity of ninth-grade boys.* New York: Teachers College Press.

Super, D. E., & Thompson, A. S. (1979). A six-scale, two-factor measure of adolescent career or vocational maturity. *Vocational Guidance Quarterly, 28,* 6–15.

Super, D. E., Thompson, A. S., Lindeman, R. H., Jordaan, J. P., & Myers, R. A. (1981). *The Career Development Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Thompson, A. S., & Lindeman, R. H. (1981). *Career Development Inventory: User's manual.* Palo Alto, CA: Consulting Psychologists Press.

Thompson, A. S., & Lindeman, R. H. (1982). *Career Development Inventory college and university form supplement to user's manual.* Palo Alto, CA: Consulting Psychologist Press.

Thompson, A. S., & Lindeman, R. H. (1984). *Career Development Inventory: Technical manual.* Palo Alto, CA: Consulting Psychologists Press.

Tinsley, H. E. A., & Tinsley, D. J. (1987). Use of factor analysis in counseling psychology research. *Journal of Counseling Psychology, 34,* 414–424.

Van Riper, B. W. (1974). From a clinical to a counseling process: Reversing the test appraisal process. *Measurement and Evaluation in Guidance, 7,* 24–30.

Vondracek, F. W., & Schulenberg, J. E. (1986). Career development in adolescence: Some conceptual and intervention issues. *Vocational Guidance Quarterly, 34,* 247–254.

Westbrook, B. W. (1976). The relationship between vocational maturity and appropriateness of vocational choices of ninth-grade pupils. *Measurement and Evaluation in Guidance, 9,* 75–80.

Westbrook, B. W. (1982). Construct validation of career maturity measures. In J. D. Krumboltz & D. A. Hamel (Eds.), *Assessing career development* (pp. 66–112). Palo Alto, CA: Mayfield Publishing.

Westbrook, B. W., & Mastie, M. M. (1973). Three measures of vocational maturity: A beginning to know about. *Measurement and Evaluation in Guidance, 6,* 8–16.

Wigington, J. H. (1982). Career maturity aspects of the Kuder Occupational Interest Survey. *Journal of Vocational Behavior, 20,* 175–179.

Williams-Phillips, L. J. (1983). Five career decidedness scales: Reliability, validity, and factors. Unpublished masters thesis, North Carolina State University, Raleigh, NC.

Williamson, E. G., & Darley, J. G. (1937). *Student personnel work: An outline of clinical procedures.* NY: McGraw-Hill.

Woody, R. H. (1968). Vocational counseling with behavioral techniques. *Vocational Guidance Quarterly, 17,* 97–103.

Young, R. A. (1979). The effects of value confrontation and reinforcement counseling on the career planning attitudes and behaviors of adolescent males. *Journal of Vocational Behavior, 15,* 1–11.

Zytowski, D. G. (1978). [Review of J. O. Crites, *Career Maturity Inventory*]. In O. K. Buros (Ed.), *The eighth mental measurement yearbook* (Vol. 2) (pp. 1565–1567). Highland Park, NJ: Gryphon Press.