DOCUMENT RESUME

ED 130 087 CE 008 505

AUTHOR Thoresen, Carl E.; Ewart, Craig K.
TITLE Behavioral Self-Control and Career Development.
INSTITUTION Stanford Univ., Calif. Stanford Center for Research and Development in Teaching.
SPONS AGENCY National Academy of Sciences - National Research Council, Washington, D.C.; Office of Education (DHEW), Washington, D.C.
PUB DATE [76]
CONTRACT OEC-0-74-1701
NOTE 63p.; Not available in hard copy due to marginal reproducibility of the original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Behavioral Counseling; Behavior Theories; Career Choice; Career Planning; Counseling Effectiveness; Counseling Goals; *Counselor Functions; *Counselor Role; Counselors; *Individual Development; Individualized Programs; Models; Motivation; Motivation Techniques; Occupational Information; Reinforcement; Research; Research Needs; Self Concept; *Self Control; Vocational Counseling; *Vocational Development

ABSTRACT

A broader view of the career problem and the counselor's role through teaching clients behavioral self-control techniques is offered in this paper. Preliminary discussion includes a review of existing vocational theories and research, in particular, Holland's typology and Super's self-concept theory. It is concluded from these reviews that the practical problems in career counseling will not be solved by continuing to use the currently prevailing correlational methods. Instead, the authors suggest that several major changes of focus are needed and present a social learning model of career selection as a perspective for self-managed change (behavioral self-control). Self-control is viewed here as a series of specific, cognitively mediated actions that a person uses to regulate and alter situations, including the cognitive environment, so that desired change takes place. Major concepts and techniques for teaching and learning self-control skills are discussed, stressing four broad areas of commitment, awareness, restructuring environments, and evaluating consequences and standards. A case study using these techniques is examined. Areas of needed research in the area of career counseling are suggested. (TA)

To appear in The Counseling Psychologist
1976 (in press)

BEHAVIORAL SELF-CONTROL AND CAREER DEVELOPMENT[1]

Carl E. Thoresen
Stanford University

and

Craig K. Ewart
Stanford University

[1]Preparation of this monograph was supported in part by the Stanford Boys Town Center for Youth Development, a contract (OEC-0-74-1701) between the National Academy of Sciences and the Office of Education (HEW), and the Stanford Research and Development Center for Teaching, School of Education, Stanford University. The assistance of Guy Browning, David Campbell, Thomas J. Coates, John L. Holland, and John D. Krumboltz in critically reviewing earlier versions of this monograph is gratefully acknowledged.

Behavioral Self-Control and Career Development

Carl E. Thoresen

and

Craig K. Ewart

Stanford University

One of the most important things counselors do is help people find intelligent solutions to life's major questions. Selecting a career is one such question. The seemingly simple steps of career decision-making encourage many to see the process of helping others to make vocational decisions as far simpler than to overcome anxiety, depression, or other more ambiguous difficulties. Yet trying to make career related decisions in a systematic fashion can involve stressful and personally threatening experiences--ones that we often avoid by letting things "take their natural course". The stress and turmoil experienced in selecting careers and pursuing vocations have been dramatically portrayed by Studs Terkel (1974) in his book Working. Many persons interviewed by Terkel presented themselves as adrift in jobs that they somehow got into--jobs that they now find depressing, discouraging, and debilitating. Those not fatalistically resigned to their "career" appear anxious to do something else. But what? And how? What can people do to change their vocations?

Career choice today is rapidly becoming an on-going, life-long process as people demand greater fulfillment from work, as more men change their careers in mid-life, as women re-enter the job market, and as workers discover that there is no longer a need for their skills. Counselors are finding that men and women of all ages need help in making changes for which they are unprepared. Many people (perhaps most) rarely make explicit, systematic choices about how to spend their working lives. "Deciding by

not deciding" is more norm than exception. Economic factors, family pressures and other environmental influences ("I just happened to be at the right place at the right time . . .") limit opportunities for systematic decision-making. In addition, most people fail to learn the skills they need to make and to implement career relevant behaviors. The counselor's task in many ways is that of teacher: helping people learn skills and persevere in new ways of thinking, feeling, and acting. Here as elsewhere in counseling and psychotherapy the problem is to help individuals function in new and often more demanding ways - ways which demand conscious attention, sustained effort, and some delay of gratification. Clearly more is required than simply telling people what to do no matter how sage and emphatic the advice and providing some bits and pieces of career information (computer assisted or otherwise). As we'll see, people need specific help in learning how to self-manage their actions so that change is made and sustained.

The requirements of decision-making are not hard to state: specifying the task, gathering relevant information, identifying alternatives, selecting an alternative, taking action toward a tentative decision. Indeed, the steps involved are closely akin to the scientific method (Platt, 1964; Thoresen, 1969; Thoresen, in press). The empirically oriented scientist often cycles in dynamic fashion through the same steps, sometimes converting observations into an alternative stated as a testable hypothesis and then conducting a probe or experiment. Although the basic steps of modern science as a framework for inquiry can be described, the actual sequence of behaviors engaged in by a scientist remain obscure (Feibleman, 1972; Mahoney, 1976). There is far more complexity to science as a human endeavor

than the several steps (e.g., observing, experimenting, inferring) enumerated in introductory research textbooks. Similarly there is more to career decision-making than memorizing the steps and gathering up some information

What Options and Which Alternative?

Besides clarifying the problem situation, two important activities are involved in career decision-making: identifying options and selecting an alternative for further action. Granting the diversity of ways that persons process information and develop inferences (cf. Mahoney, 1974) it is still possible to set forth a logical, systematic sequence of operations for generating and selecting alternatives. Clients can learn to apply this sequence in a wide variety of choice situations (Krumboltz & Baker, 1973). How they will later use these activities remains unknown, but these activities can be conceived of as basic skills needed to create a personally meaningful product. All artists and craftsmen learn basic skills that become ingredients of a unique performance. The same holds true of the basic or the applied scientist (Thoresen, in press). Some basic inquiry skills must be acquired before a creative contribution can emerge.

Decision-making involves prediction. That is, the person needs to anticipate possible outcomes of his actions. In general, two kinds of outcome predictions can be made: probability estimates and utility estimates (Mischel & Masters, 1966; Thoresen & Mehrens, 1967). Probability estimates are used in establishing the range of alternatives, and the likelihood of attaining them. Utility estimates predict which alternatives will prove

most useful or satisfying. Thus a decision can be represented as a function of the probability and the utility of any given alternative. Together they determine its value. A career decision involves weighing the probability of entering a given occupation ("Do I have what it takes to get through law school?") against its utility ("How much would I enjoy being a lawyer?").

Although a theoretical decision model can be quite explicit, its actual implementation with clients offers problems. Probability estimates of a client's chances of qualifying for a given occupation are not difficult to develop. Current information on particular career openings, together with the academic or other credentials required can be used. A counselor can develop tailored expectancy tables based on the experiences of others relevant to the client (e.g., students in a particular school or college who have gone to law school). Such tables can provide probability estimates which are helpful in predicting future performance (Goldman, 1961; Yabroff, 1969). Thus a university student with a B average could be shown an "experience table" based on the past performance of students from the same institution. The table would provide estimates of getting admitted to a given graduate school, based on such factors as grade-point average, scholastic aptitude, or other qualifications.

The counselor could function primarily as an occupational information specialist, searching out, organizing, and transmitting "objective" data relevant to each client's interests. One limitation, however, with this approach is that clients often fail to recognize and use such information. Subjective expectancies of the clients often disagree with the objective information and estimates provided by the counselor (Thoresen & Mehrens, 1967).

For example, a premed student with average grades may decide to apply only to prestige medical schools because he or she believes a chance to get in still exists. On the other hand, a more academically successful premed student may greatly underestimate chances of acceptance. Such a student may not believe he has much of a chance against the thousands of other applicants. The counselor must know how to clarify and resolve certain contradictions between a client's expectations and other more objective estimates. There is much more to counseling for career selection than "giving them the facts". Facilitating change in a client's way of thinking and acting calls for knowledge and skills not included in the information-giving model.

The desirability or usefulness of alternatives merits attention. The counselor's task is to help the client decide what needs, interests, or values are possibly involved in a particular career option. What rewards, for example, might a certain occupation provide? Apart from providing information, counselors are often expected to facilitate career decisions by helping clients discover what they value. Interest inventories and occupational value scales are numerous; most of these devices help the counselor assign a client to one or several vocational types or categories. These instruments are sometimes viewed by counselors (and almost always by clients) as providing a kind of "x-ray" view of an individual's vocational personality. They are seen as capable of telling you something about your own career needs and interests that you do not already know. Thus, if I am trying to choose between careers in social work and sales management, feeling equally attracted to both, I might see the results of an inventory as capable of telling me which career I <u>really</u> want to enter, or which occupational type I am. If my type fits the helping professions more than it

fits the business-sales-occupational type, then I should go into a helping field. I may even assume that this data can be used to predict my future happiness in a given area of work.

Information about my vocational type may be of little use to me if my membership in that type in no way enhances my enjoyment of one occupation over another. Standard interest inventories are generally helpful in counseling only to the extent that they actually tell clients more than they already know about their ability to enjoy a given line of work. Results of standard tests and inventories have yet to demonstrate this result. The capacity to enjoy an occupation is determined by a host of personally subjective and specific environmental factors which interest inventories do not tap. The assembly line worker might score low on an inventory measuring managerial interests, but does this mean that he or she lacks the qualities needed to find satisfaction in becoming a manager and performing the job well? Thus it is more difficult to predict potential vocational satisfaction from a few simple indicators (e.g., responses to inventory items) than it is to predict career entry from level of formal education, social-economic status or equivalent data. The counselor must be able to help the client define conditions of "success", "meaning", and "enjoyment" in his own life and to explore the possibilities for fulfilling these conditions in various kinds of work. The counselor must go well beyond the information-and-testing role suggested by the objective requirements of the simple decision model (Thoresen & Mehrens, 1967). Career selection involves self-exploration and change; a counselor should be able to facilitate these activities.

Engineering Decision Behaviors

Roughly stated, the counselor's job is one of helping people "engineer" their own decisions. In effect, the counselor teaches the client to clarify problem situations, make tentative choices and, most importantly, to act on his or her decision. Counseling involves teaching clients to approach life in a way that is new, demanding, and possibly threatening. Thus counselors find themselves in need of practical knowledge about how to help clients:

1. To clarity the nature and scope of the decision they must make and the goals they seek to achieve.
2. To commit themselves to undertaking and persevering in personal and environmental explorations.
3. To acquire a more accurate understanding of their needs, interests, abilities.
4. To change self-attributions and beliefs, along with inaccurate stereotypes and misperceptions.
5. To restructure their environment to help them engage in desirable behaviors.
6. To evaluate and maintain progress in the direction of personal goals.

The information needed to help achieve these goals can be provided by well-designed research. It may be helpful at this point to review briefly the kinds of questions and methods currently being pursued in career research with an eye to their limitations and possibilities.

Existing Vocational Theories and Research: Current and Choice

Career decision making is one of those gardens of human activity in

which theories blossom and grow numerous but produce little fruit. Attempts to explain vocational behavior have increased in quantity and sophistication during the last twenty years (Osipow, 1968). Even so, this theoretical diversity is not apparent at the level of empirical investigation; one or two major orientations appear to predominate.

In terms of the sheer number of studies, John Holland's vocational typology currently inspires the most research activity. The Self-Concept theories of Donald Super and others (Super, 1963, 1969) account for much of the remaining effort. A recent review (Mitchell, Jones & Krumboltz, Note 7) of empirical studies reported in the five-year period from 1969 through 1974 illustrates this fact. A search of approximately 600 books, monographs, dissertations, and other sources identified 45 empirical studies of psychological factors that influence career decisions. Nearly half of these studies (48%) investigated Holland's theory, while a second major orientation (17%) reflected the self-concept approach. The remaining third of the investigative effort represented a variety of theoretical viewpoints. Vocational research continues on lines sketched by Osipow in his thorough review (1968). This review, together with others (Bailey & Stadt, 1973; Borow, 1973; Crites, 1969), obviate any need to characterize the theoretical literature here. Let's focus for the moment on how much the current research tells us about how to do effective career counseling. In this section we will look at the two theories that are generating the most empirical research activity, and will attempt to indicate their practical contributions and limitations.

Holland's Types

John Holland (1973) provides the counselor with a plausible and

appealing vocational typology. His system identifies six major "vocational types" or clusterings of vocational preferences: The Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. A person's type is indicated by his or her responses to Holland's (1975) system.

The typology is an intuitively sensible and empirically tested scheme for classifying people's interests, job skills and work environments. It does not however constitute an explanation of how such skills or preferences develop and how they change. Although Holland has proposed a learning or behavioral account of how people come to fit certain types (1973, 1975), basic research on learning issues within the Holland framework remains to be done.

As a typology, Holland's system does entail an important theoretical presupposition: it is based on an enduring trait conception of personality. An individual's responses on the VPI are treated as direct and additive signs of underlying personal dispositions (traits) which presumably do not vary greatly over time or across situations. For example, the more mechanical interests you endorse on the test, the stronger your Realistic orientation (trait) is thought to be. If you score higher on this category than on any other, then you might be advised to consider jobs that require you to work with things more than with ideas or people. Because you checked more mechanical items (Realistic) than people items (Social), you are thought to have a strong and enduring preference for things over persons.

Holland (1973) makes the interesting suggestion that the six major vocational orientations (VPI types) are not all equally consistent with one another; a given vocational preference can be viewed as closer to some VPI

categories than to others. The six types are depicted as forming the corners of a hexagon (Figure 1); moving about the perimeter one passes from Realistic to Investigative, Artistic, Social, Enterprising, and Conventional (which is again adjacent to Realistic). Recent interpretative material presented with scores of the Strong Vocational Interest Blank uses this format (Campbell, 1974). VPI types that are adjacent on the hexagon are thought to be consistent with one another, while those hexagonally opposite are deemed mutually inconsistent. In this scheme, a person would find it somewhat easier to reconcile interests in the Investigative career domain (e.g., biological research) with a Realistic career preference (e.g., engineering) than with an interest in work that falls in the Enterprising category (e.g., sales person).

Typical Questions and Methods

Most of the research on Holland's theory, (roughly half of the empirical work reported in career decision-making area), pursues one or more of the following questions and methods:

1. Question: Does my VPI type indicate the type of job I am likely to choose after college?

   Method: Test the predictive validity of the typology by measuring the correlation between students' VPI types in college and the VPI type of the job they seek after graduation.

   Answer: Research on large student samples indicates that student VPI types predict the types of their majors and initial job choices (Holland, 1973). However, it should be noted that some investigators have failed to verify this association (Hauselman, (Note 4); Hughes, 1972); in these cases, factors

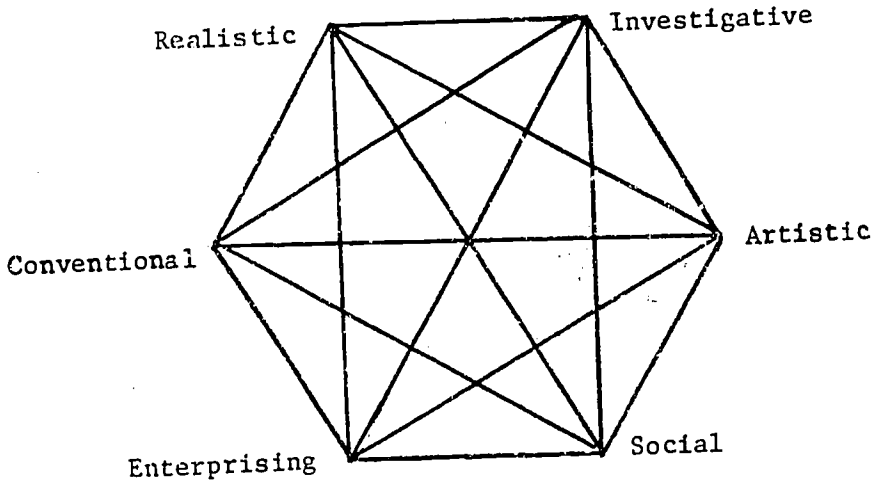

Figure 1. Relationships Among Types. Holland's hexagonal model for defining the relationships among VPI types. The shorter the distance between any two types, the greater their similarity is thought to be. (Adapted from Holland, 1973.)

such as sample size or differences in aptitude or social-economic status may have been more decisive than one's vocational preferences. While most research results indicate that your future job type can be predicted from your VPI score, this prediction is only half as good as the one you could give if someone asked you directly (Holland, 1968).

2. Question: What does the VPI tell me about my personality?

Method: Correlate students' responses to the VPI with their responses to a battery of personality tests and rating scales.

Answer: The answer depends in part on your theory of personality. If you define personality as whatever is measured by standard personality tests, the VPI does not tell you very much about personality. Of 856 correlation coefficients estimating the association of VPI scales with 7 personality tests (e.g., CPI, Cattell 16PF) only 3-1/2% exceeded a value of .36. VPI types can be said to account for less than 10% of personality test score differences (Holland, 1975; Folsom, Note 3). But career-related behaviors are important characteristics of individuals, and the VPI does predict these as we have just noted.

3. Question: Does the consistency of my current job preferences indicate how happy I will be in my future job?

Method: (a) Correlate students' VPI consistency measures with the frequency with which they change majors or report that they are dissatisfied with their field of study.

(b) Analyze work history data to see if people with "inconsistent" codes tend to change jobs more often than people having consistent VPI types.

Answer: The consistency of a person's dominant vocational interests has been found to be significantly related to measures of stability and satisfaction in academic settings (Holland, 1968). A work-history analysis performed by Holland and his associates (Holland, J. C., 1973) on a large national sample of working adult males showed that VPI type predicted job choice, stability and achievement over 5 to 10 year periods. The analysis indicated that people "tend to keep doing the same things." Further, analysis of preference patterns for men in the Realistic category permitted predictions of job stability and achievement with significant accuracy (also see Parsons & Wigtil, 1974).

Again, inconsistent or negative findings have been reported by some investigators (e.g., Werner, Note 8) VPI consistency failed to predict job satisfaction in a sample of employed males in their twenties and early thirties (Hughes, 1972). In this last group, the consistency between a person's VPI orientation and the VPI type of job he actually held was not associated with reported job satisfaction.

On the whole, it seems that people are happier and accomplish more in environments that encourage them to do what they enjoy most.

In sum, the evidence on the code consistency/job satisfaction relationship is inconclusive. The work-history analyses, while well-designed and extensive, leave important questions unanswered. Frequent job changes can be seen as a function of unhappiness or as an indication that a person has interests and talents in diverse job areas and is successful in expressing them. People frequently "keep doing the same thing" not because they enjoy it, but because they see no other alternative. If your code is inconsistent, i.e., if you enjoy doing very different things, the data indicate you are likely to explore a wider variety of job options than if your interests happen to be more focused. Whether or not you will be happy probably depends more on the satisfactions your work skills can win you than on the "consistency" of your code.

4. Question: Will I enjoy my job more if my personal VPI type is consistent with the VPI types of the people I work with?

   Method: Correlate measures of student-environment VPI congruence with tendency to change majors or report dissatisfaction.

   Answer: The degree of congruence between an individual's VPI type and the VPI types of other persons in the work environment has been found to be positively associated with academic achievement and "good conduct" in high school students (Dayton &

Uhl,Note 2). Holland reports that students in universities having a wide array of VPI types are more likely to change their majors and to report satisfaction with their choice than are students in schools having a more homogeneous VPI profile (Holland, 1968).

In short, Holland has established a way to group career interests, a system which has led to the creation of useful guidance materials (e.g., the SDS) and has stimulated considerable research (Lackey, in press). Although the typology constitutes an important contribution to career counseling as an intelligible and empirically sound system for organizing vocational information and instruction, the research inspired by it has not been directed at some major needs of the career counselor. By examining some limitations of the theory and of the methods used to test it, we may gain a better idea of needed research to answer some important questions.

Some Limitations. In terms of current counseling needs, the Holland typological approach encounters several major difficulties. In the first place, characteristics of the samples and research strategies typically used limit the practical applications of the results. The counselor who is trying to help men or women "engineer" a career change in mid-life will need information that applies to working adults. More than two-thirds of the studies supporting Holland's theory have been done with college or high school students (cf.Lackeyin press; Mitchell, et al;Note 7). While greater attention is now being given to employed adult samples, most of the data cited in support of the typology may reflect the typical structure of American academic institutions more than the world of work. An additional difficulty for practical interpretation arises from the fact that studies

of the VPI have used very large samples. The problem of obtaining statistically significant predictions in large samples differs in important ways from the problem of helping an individual decide on a career. The latter case calls for intensive as opposed to extensive research; one has to discover what works for this person in particular, notfor college students in general .

To verify a typology, a researcher must sample extensively; the problem is to discover what generalizations seem valid on the average for the largest possible number of cases. Problems of large scale sampling and category definition are paramount concerns. Whether enduring generalizations are really possible is, of course, debatable since so many variables may interact to obscure findings (cf. Cronbach, 1975). The problem facing the counselor is different: to help a particular person explore career options and pursue some tentatively. To do so one must discover what situational and intrapersonal factors are at work in this particular case. Specific techniques for discovering what these factors might be and how they operate for a given person become the primary focus of the counselor. The counselor's job is to help a client identify and assess factors that might influence his or her choice, as well as create conditions needed to implement a given decision. A vocational classification scheme with an extensive empirical base can provide valuable information, but it inevitably ignores important situational and intraindividual variables that can affect a person's choice. Average occupational interest profiles provide useful points of reference; however, in themselves they offer no guide to how one might develop the mastery of self and environment needed to make and implement career-related decisions.

A second major limitation results from an over-dependence on correlational techniques. Experimental investigations of possible cause and effect relationships in career choice must be undertaken if we are to further our understanding of the processes and conditions of vocational development and change. How do career orientations develop? How difficult are they to alter? What experiences have the greatest impact on our choices and on our ability to enjoy the work we have chosen? Our inability to answer such questions severely limits the effectiveness of counseling. If we knew more about the origins and the antecedents (the "causes") of career interests and the kinds of influences which make them change or stay the same over the years, then we might know more about how to help people select, develop, and maintain satisfying careers. A vocational typology can help us classify vocational leanings but it does not tell us all we need to know if we are to develop them into a career.

The Case of Jessica: An "Indecisive Type". Consider Jessica, a recent college graduate with a major in economics ("It wasn't all that interesting, but I figured it would get me a job"). Her major and some of her interests type her as Enterprising-she likes to sell people on her ideas and aspires to leadership- but she also speaks of the importance of "being original" and "having a philosophy of life" (Artistic). After considering a number of career alternatives she finds herself with two major options. One possibility is to get a degree in business administration and pursue a career in management. Another alternative is to study journalism with a view to writing about social and political issues. A business career would be consistent with many of Jessica's past interests and experiences; her background in economics is a sound base for business. But Jessica's

experiences as an economics major have made her aware of problems women face in a male-dominated field. She believes that as a writer she might help change people's attitudes toward women in business and industry. An interest in writing belongs more to the Artistic category; it seems inconsistent with an Enterprising orientation. Should a counselor warn Jessica that she will be unhappy as a writer? Actually, the fact that Jessica enjoys persuading people and has strong verbal skills may predict success in journalism. In actual counseling it is necessary to focus on specific skills and job functions; each VPI category embraces a wide array of job possibilities and must be narrowed considerably before it can be of much use.

For better focus , Holland advocates a 3-point code which assigns a person to half of the six categories in order of preference as judged from the pattern of responses to the VPI . This makes good sense if one is trying to increase the number of accurate predictions in a large sample--the more information you have about someone the better your chances of predicting what they will do. But the usefulness of this practice to the counselor remains in doubt.

Let's look at Jessica. Upon completing the Self-Directed Search she is assigned a three-point code ASE (Artistic, Social, Enterprising). She discovers that this code is used to characterize reporters and journalists. Soon after making this discovery, she learns of a job opening in an advertising agency in New York. An old friend of the family is in a position to offer her the job if she wants it. Jessica is thrilled at the thought; the challenge and glamor of Madison Avenue entices her but she discovers that the advertising job code (AES) differs from her own in the second and

third points. Should she take the job? Upon further reflection, Jessica notes her increasing concern for women's rights and wonders if perhaps a degree in law might put her in a better position to fight for some of the changes she desires. The code for attorneys is EAS; it includes all of Jessica's interests but in a different order of priority. As the counselor with whom Jessica shares her dilemma, should I advise her that an advertising career in New York is likely to prove more satisfying than a career in law because the former is more congruent with her Artistic high point emphasis than the latter? Should I encourage her to study journalism?

Having read work history and other investigations of code stability I might conclude that I should advise Jessica to stay within her current ASE job category. This research shows that people tend to stay in the same job categories (e.g., doctors continue to see patients and truck drivers continue to drive trucks). Further, people who remain within the same job category may even tend to achieve somewhat more "prestige" and report more job satisfaction than people who shift back and forth among widely differing job types. On the other hand, I might consider the possibility that work history data reflect the stability of environmental contingencies in our society over recent years. It is usually easier and more lucrative to keep on doing the same job than to change; further loyalty is usually rewarded. The data tell me nothing about the capacity of individuals to explore new ground. Further, Jessica insists that she wants to create her own kind of career, that none of the established job labels or stereotypes are appropriate for her, that there are things in her self and in society that she wants to change. To her, job prestige and stability matter less than the opportunity to master a

wide variety of skills and express her own personal values. It is clear- as Holland would probably concur that a simple interpretation of the typology and stability data would be grossly inappropriate. Too many other important factors must be considered. In large part, Jessica's dilemma arises out of questions concerning her own capacity for self-mastery and change, questions the typology cannot answer.

It would be possible to explore issues of change within the Holland framework. Indeed, this is a much needed endeavor, but the effort requires a shift to an expanded research perspective, one that includes controlled experimental studies as well as large-scale correlational ones. While a promising step in this direction has been made by Helms and Williams (Note 5), much more remains to be done if the typology is to be helpful to people like Jessica. In addition, it will be necessary to explore the question of how individuals learn skills of self-mastery and change, a question vital to career choice and implementation but thus far barely recognized (Holland, 1975). In summary, the current VPI type codes help draw a client's attention to various personal interests and job possibilities, but remain too broad to provide specific answers to many basic questions that clients ask. Once a VPI code has been determined, major problems of interpretation and self analysis still face the client.

Do Types Predict Choices? In the final analysis, much of the practical usefulness of the typology rests upon its power to predict future choices and satisfactions. Helms and Williams (Note 5) in an experimental test of Holland's system, found that the degree of congruency students reported between themselves and simulated job kits could be predicted from the VPI codes

of the students and the kits. Wiggins (in press) reports that VPI categories predicted job satisfaction in a group of female teachers of retarded children. However, some evidence (Hughes, 1972) suggests that the amount of agreement between the VPI category of the job which a client eventually chooses and the client's own VPI type may bear little relation to the amount of satisfaction he or she experiences in the job. A counselor might want to know whether the VPI or SDS can predict a person's future job choice any more accurately than the person's own directly stated opinion; in other words, does it tell you something more about your future job choice than you could already state if someone asked you directly instead of by means of a questionnaire? Holland's (1968) conclusion is that it does not. As noted earlier, within large samples VPI type predicts students' actual vocational choice after graduation at better than chance levels, but is only half as effective as the student's own prediction. The best single predictor of the career that the student will choose is the student. Even the extensively developed and researched Strong Vocational Interest Blank does not give a more accurate prediction of future jobs a person will hold than does the person's own directly stated opinion (Dolliver, 1969).

But even where the predictive accuracy of the typology is relatively high (e.g., work history analyses), we should not assume that these measures tell us much about people's capacity for change and satisfaction. In recent years personality research and studies of aptitudes have seen a growing recognition among investigators that assessment techniques must take account of considerable situational variability in what people feel, think, or do (cf. Block, 1968; Cronbach, 1975; Mischel, 1968). As mentioned

earlier, people translate the same self-descriptive labels into action in radically different ways. Characteristics of persons such as interests are not expressed in identical ways over time and across situations (Insel & Moos, 1974); some trait researchers have tried to account for this fact by hypothesizing various "moderator" variables such as sex or intelligence of subject or characteristics of the setting in which a trait is assessed (Kogan & Wallach, 1964). Unfortunately the yield of moderator variable research has been very meager; individual variability still persists causing generalizations to be sharply limited (Thoresen, 1973). The stability of VPI choices may be more a function of environmental limits than of intrapersonal limitations.

Super's Concept

Self-concept theories (Super, 1963) account for a sizable portion of career decision research activity. Self-concept theorists assume that people have global conceptions of themselves, their abilities, and interests, which they express or "implement" through their work. Job choice is determined by a person's idea of himself, an idea that is reasonably stable yet subject to change over time. Self-concepts are elicited by means of self-descriptive instruments; Q-Sorts and adjective checklists are commonly used. People are often asked to indicate adjectives that describe themselves as they really are, or as they would ideally like to be. These self-descriptions are then correlated with actual job choice, with the person's description of their "ideal" job, their reported job satisfaction or level of occupational attainment.

The following are some questions and results of self-concept research:

1. Question: Does the need to implement a self-concept cause a person to choose a career that suits his or her abilities?

   Method: Correlate people's self-esteem ratings with how they rate their own competence in their chosen vocation.

   Answer: Higher self-esteem is often, but not always, associated with higher levels of self-reported job skills (Greenhaus, 1971; Hughes, 1972; Mansfield, 1973).

2. Question: Do people tend to implement their self-concepts by choosing roles that match the way they view themselves?

   Method: Measure the correlation between the descriptions people give of their personalities using an adjective checklist, and the descriptions they give of their jobs on the same instrument.

   Answer: People in different occupations do differ somewhat in the adjectives they choose to describe themselves. For example, high school science teachers, engineers, ministers, and business managers use slightly different "vocabularies" to describe themselves (Hunt, 1967). Also, college students tend to see themselves as more similar to people in jobs they prefer than to people in jobs they dislike (Ziegler, 1970).

3. Question: Are people happier when their self-concept (self-esteem) matches the view they take toward their work role than when evaluations of self and one's work do not agree?

Method: Correlate measured consistency between people's self-descriptions and their descriptions of the jobs they hold with their self-reported levels of job satisfaction.

Answer: People who report higher skill levels tend to be happier in their work than less skilled people, and occupational prestige has been found to be related to job satisfaction for people who are low in self-esteem (Greenhaus, 1971).

Self-Concept: Cause or Effect? Self-concept researchers have shown that there is often a significant association between the way in which people view themselves and the work they currently are performing. These associations show that there can be an important relationship between the work one does and one's sense of personal identity. A question this research does not resolve, however, is the causal link between self-descriptions and job choices. As one self-concept researcher notes, the simple observation that self and occupational concepts are significantly related does not demonstrate that self-concepts determine occupational choice (Hunt, 1967). Self-descriptions may be as much the consequence of occupational choices or achievements as their antecedent or cause; what people do in their work may determine how they view themselves. Self-perception research suggests just this kind of consequence: perceptions of myself follows from observations of my actions (Bem, 1972). Do people select careers in which they are likely to do well because they hold themselves in high esteem (thus implementing positive self-concepts) or is the high self-esteem measured by the adjective checklist a consequence of the fact that they have chosen jobs in which they perform well?

Assume, for example, that we see medical students and practicing

physicians using some of the same words to describe themselves. We note that these words differ from some of the adjectives that business students and corporate executives often use to characterize their own personalities. How do we account for this? Do people who see themselves as "kind", "compassionate", "patient", and "exact" implement these concepts in medical careers while persons viewing themselves as "bold","persistent", and "innovative" seek to express these self-evaluations in business occupations? Or do medical students tend to see themselves as "compassionate" and "dedicated" because they are trying hard to become good doctors and these are qualities doctors should possess? Do people in business call themselves "innovative" merely because they find they are forced to spend much of their time on the job thinking up new ways to get ahead of the competition?

In vocational counseling it is important to know how self-concepts develop and whether they undergo much change over time. Can inaccurate self-concepts be altered? If so, how? Recall Jessica's situation. Her responses to a self-descriptive adjective checklist are somewhat more similar to those given by business entrepreneurs than one would expect of a professional writer. A counselor tries to help her interpret the practical significance of this information. If self-concepts reflect relatively enduring dispositions to feel and act in certain ways, then perhaps she will be more likely to enjoy a business career. However, if one views self-concepts as more malleable, as consequences of current experiences and influences, then the counselor might place less emphasis on the checklist responses. Instead, the counselor may suggest some specific actions that Jessica might take in order to find out more about her interests or to develop her skills. Jessica's self-view would be expected to change as a function of new work

experiences and feedback in whatever career she chooses. If Jessica wants to become a writer, how can a counselor help her develop the self-attitudes and skills she will need to enjoy this work and to do it well? Again, the question is how to engineer a choice. In this case, how can Jessica be helped to change her self-concept in the direction she desires?

Few, if any, researchers in the career decision field are devoting efforts to solving this problem. Personality and social psychologists, however, have conducted explorations of the relations between performance feedback and a person's attitudes toward themselves (e.g., Bem, 1972; Rotter, 1954). Again, an experimental as opposed to an exclusively correlational research approach has been necessary. Individuals, for example, may be asked to predict their performance on a series of tasks; changes in expectancies of success on future tasks are related to positive or negative feedback regarding one's performance over the course of successive trials. Results of such studies suggest that self-concepts are changed as a result of feedback, but that this change is mediated by a number of other factors, such as achievement orientation or fear of failure (e.g., Atkinson & Feather, 1966; Heckhausen, 1968). Also, changes on one task sometimes generalize to others, thus suggesting that overall self-concepts may be altered by specific success or failure experiences.

Self-concepts (self-esteem) have been shown to play an important role in human behavior (e.g., Hannum, Thoresen, & Hubbard, 1974). Further, what is termed self-concept can be directly modified by specific training in self-instructions, reattributions, and cognitive restructuring (e.g., Goldfried & Goldfried, 1976; Mahoney, 1974; Meichenbaum, 1974). The responses people give to checklists are not simply and directly related to

what they do or feel about career choices. Much self-concept research highlights the fact that people are capable of viewing themselves in many different ways, depending on the situation in which they find themselves. The self-concepts that people express to others have been shown to change with the setting in which they are elicited, with the person who requests the self-description, and with the perceived consequences of the self-revelation (e.g., Jones, Gergen, & Davis, 1962). Current self-concept research in career decision-making does not take these factors into account. At best, this research does a good job of telling us what we already know: that self-concepts and work roles tend to be related. But it does not help us untangle the complex network of causal interactions between self-estimates and occupational feedback that influences career choice and satisfaction.

Some Limitations and a Few Possibilities

Let us try to summarize some major areas needing research. From what has been said thus far, it should be clear that we will not solve the practical problems in career counseling by continuing to ask the same kinds of questions using correlational methods that currently prevail. Instead, several major changes of focus are needed.

1. Whom are we trying to help?

Most of the career research reviewed above was conducted with student samples. This fact reflects realities of convenience and need for the researcher (Thoresen, 1969); student samples are the easiest to obtain and much counseling is directed at helping students select academic majors and first careers. With changing attitudes toward work, including the concept of continuing career development and mid-career change, and the re-entry of

women into the world of work outside the home, there is a growing need to help post-college-age persons implement good career choices. Thus, future research should take account of a wider range of clients, including women, minorities, and adult career-changers.

2. Sample size: How large?

In most cases, career decision researchers employ samples numbering in hundreds or even thousands of subjects. While extensive sampling has the advantage of allowing the investigator to report low magnitude correlations that would not reach statistical significance with a smaller number of subjects, this technique alone cannot give us the knowledge we need to help people make major self-changes. Further, the exclusive search for statistically significant correlations using large samples often obscures the relationship between theory and research. Improving theory to make it more useful in understanding career-related processes requires a deemphasis on statistical significance testing and more stress on experimental control (Cronbach, 1975; Meehl, 1967).

In a very large sample, one simply does not have the degree of control or immediacy of observation possible with a smaller number of subjects. Research capable of producing specific information of greater relevance to counseling must make more use of carefully constructed mixed analysis of variance designs along with intensive, single-subject experimental studies (Thoresen, 1969; Thoresen, in press). Especially needed in the earlier stages of the scientific inquiry are well-documented intensive, single case studies devoted to problems of careful observation and systematic measurement of career-relevant behaviors (cf. Lackenmeyer, 1970). These "short-run empirical studies"(Cronbach, 1975) can reveal a great deal of information about how cognitive and emotional behaviors influence career

aspirations, decisions, and satisfactions. Simply put, we should first work closely and intensively with relatively few people over time to improve our understanding of what people do. Later comes the need for extensive studies with larger Ns seeking generalizations. (For a brilliant statement of the need for careful, intensive experimental studies see Claude Bernard's classic on experimental medicine written in 1865.)

3. Traits and situations

As noted above, current research on vocational typologies and self-concepts does not sufficiently account for the complexity of individual behavior. The relationship between self-attitudes and overt behavior is complex; how people feel about themselves and how they behave varies considerably with the situation in which they find themselves. Researchers need to consider the various situations in which individuals live, work, and make choices. Knowledge of ways in which situational factors influence a person's self-attitudes and occupational decisions could enable counselors to help their clients analyze and restructure their environment to help themselves develop and maintain the life style of their choice. Behavioral self-control techniques, to be discussed later, can provide the necessary bases for self-analysis and environmental change.

4. To categorize or to change?

Most career research tends to show, for large groups, what self-statements are associated with what other self-statements at a better than chance level. This kind of information gives us few clues about how to help people make real-life decisions and to enact them. What experiences help people discover what they want in life and permit them to commit themselves to moving toward their goals? We need to know what personal and

environmental events tend to facilitate the decisions of individual clients. An experimental approach that seeks to find causal factors through systematic control and observation could contribute much to our understanding.

A Social Learning Model of Career Selection

A learning account of career development is needed to explain how vocational types or self-concepts develop and change. Krumboltz (1975,Note 6) has suggested a rationale based on a social learning theory model of human behavior. The theory recognizes career preferences, occupational skills, and the individual's selection of courses, occupations, and fields of work as a composite of many past and present experiences, as well as the anticipation of future experiences. These experiences are composed of four general factors, each of which interacts to influence the other factors over time. Just how these variables function is not yet understood.

Four major factors have been identified: (1) genetic endowment and special abilities, (2) environmental conditions and events, (3) specific learning experiences, and (4) a set of "task approach" skills. Table 1 illustrates some of the characteristics of these four factors. The advantages of a social learning rationale are at least two-fold. First, it suggests the means by which client self-attitudes and behaviors are acquired, maintained, and changed. Understanding how career attitudes and choices are formed could permit the counselor to help clients take an active role in changing the direction of their lives. Second, the theory relates directly to a cognitive social learning perspective for

self-managed change which we will present shortly. For now it is important to note that career decision-making requires a variety of effective self-control competencies - from controlling the common impulse to "simply avoid doing something about careers" to rearranging one's social environment to encourage behaviors such as preparing for final exams or maintaining one's commitment in a challenging apprenticeship program.

Instrumental Learning. Under the Learning Experiences factor, two basic types are noted: instrumental and associative. An instrumental learning experience is one in which a person "acts on the environment in such a way as to produce certain consequences". Self- and career attitudes can be understood as resulting in part from our past actions and their consequences (e.g., comments from people we respect, direct results of the action itself, its impact on others, etc.). The consequences of our acts are also determined by the context or situation in which we act (e.g., where we are, with whom, what prior beliefs or preconceptions we bring to the situation).

Recall Jessica's dilemma about journalism or business. Her growing interest in a writing career, a change that is difficult to explain within the framework of a static vocational typology, is readily understandable. A series of situational or behavioral analyses of Jessica's career-relevant actions and their outcomes in various settings would be enlightening. We would note what things Jessica does that are relevant to her career interest (e.g., writes an economics paper, contributes to class discussions, reads a woman's account of sex biases) and examine the consequences of these actions. We might find that her paper received an A and many enthusiastic comments from the professor, that her male classmates

Table 1

Social Learning Analysis: Factors Influencing Career Decisions

A. "Environmental" Factors

(These factors influence the individual but are generally beyond his or her control, at least in any immediate sense. They are not amenable to change through counseling.)

1. Genetic Endowment and Special Abilities

- Race
- Sex
- Physical characteristics
- Intelligence
- Music and art abilities
- Muscular coordination

2. Environmental Conditions and Events

- Number and nature of job opportunities
- Number and nature of training opportunities
- Social policies and procedures for selecting trainees and workers
- Rate of return for various occupations
- Labor
- Natural
- Technological
- Social
- Educational
- Family and neighborhood structures

B. "Psychological" Factors

(These processes and skills determine a person's thoughts, feelings, and actions. Counselors try to help clients understand and change these "inner influencers.")

1. Learning Experiences

- Instrumental learning experiences
- Associative learning experiences

2. Task Approach Skills

- Problem solving skills
- Performance standards and values
- Work habits
- Perceptual and cognitive processes

Adapted from Krumboltz, 1976

ignored or belittled her remarks in a discussion and that the woman who wrote the interesting article is well respected by a number of her professors. We might help Jessica estimate her enjoyment and satisfaction of possible future careers by performing additional situational analyses. What specific actions would she perform in the job and what would be their probable outcomes? Counseling would involve teaching Jessica to notice and evaluate her reactions and those of others to certain behaviors in past and current situations. She could then use this knowledge to guide her choices.

Associative Learning. The second kind of learning experience is associative. In this type, the focus is on the person's reactions to external events or stimuli. ". . . two events are paired in time or location such that the learner associates a previously neutral situation with some emotionally positive or negative reaction". In this way, we acquire associations such as "Artists are rebellious" and "Engineers are practical". Holland's Vocational Preference Inventory and much self-concept research attempt to draw out a person's vocational stereotypes and to show patterns among them (e.g., people who want to become military officers tend to dislike fashion designers). Such preconceptions become a problem when they limit the range of career alternatives a person can consider or explore with any enthusiasm- 'If you're not a doctor, you're second rate," "There's the real world of business and the ivory towers of professors". Jessica, for example, may hesitate to investigate a career in writing because her parents have frequently commented on the lamentable political biases and lack of personal integrity "among all journalists". Where such stereotypes seem to be a barrier to career exploration, knowledge of how they are

formed may help the counselor suggest ways to the client of altering irrational beliefs, emotional reactions, and prejudices

Behavioral Self-Control

We now turn to the topic of self-control or self-management psychology. As a conceptual framework, self-control theory and techniques provide a number of promising insights into ways of helping persons solve and prevent many "problems of living", such as selecting a career and finding satisfaction in one's vocation. The selecting or changing of a career as well as experiencing satisfaction in it is more complicated than the personality type-career type matching or self-concept implementation studies suggest. An effective "career-decider" must develop and sustain many diverse behaviors over time, many of which are less likely or less probable in terms of the person's usual way of doing things. Such behaviors are the means a person uses to engineer selection and satisfaction. Specifically, these behaviors involve analyzing the environment; committing oneself to take action and maintain action; identifying and altering faulty perceptions, beliefs, and attributions; trying out new ways of acting; and restructuring the environment to promote change and foster encouragement. Clearly such actions require a great deal of sustained effort and conscious attention. Indeed this demand for effort and attention is the way self-control has been traditionally conceived (James, 1890; Klausher, 1965).

Although the logical steps of making career decisions wisely have been articulated for some time (e.g., Krumboltz & Baker, 1973), controlled studies of how to implement those actions have not been carried out. How, for example, can a counselor help an adolescent learn and actually enact

the sequence of behaviors used in seeking and processing information, clarifying short-term and long-term personal goals, and managing time in order to explore career options? What are the personal skills needed by a person to engage in the ongoing process involved in career decision-making? We believe that self-control processes bear on these questions.

What is Self-Control?

Behavioral self-control is becoming a popular topic in psychological theory and practice; recently it has begun to inspire much discussion and research. The number of published experimental case studies and controlled group experiments has soared. Several textbooks on self-control have appeared recently (e.g., Goldfried & Merbaum, 1973; Mahoney, 1974; Mahoney & Thoresen, 1974; Thoresen & Mahoney, 1974; Watson & Tharp, 1972), and the popular literature is also starting to reflect interest in how self-control theory can be used to solve common personal problems (e.g., Coates & Thoresen, in press; Miller & Munoz, in press; Mooney, 1974).[1]

Self-control can be defined as learnable cognitive processes that a person uses to develop controlling actions which, in turn, function to alter factors influencing behavior (Thoresen, 1976; Thoresen & Coates, 1976). This rather technical definition stresses something often unrecognized. Namely, the distinction between a person learning self-controlling skills and a person using those skills to change his or her own behavior. Understanding the processes involved in acquiring these skills and in performing them requires different theoretical models and concepts.

The term behavior is used here to include internal, covert actions (e.g., positive self-statements, imagery rehearsal of external actions) as

---

[1]In addition to these articles and books, an introductory film on how self-control methods can be used to solve a variety of problems is available (Thoresen, 1976).

well as external, overt actions (e.g., speaking assertively to others, rearranging one's time schedule). Self-control is not viewed as a dichotomous category distinct from something called external control (cf. Rachlin, 1974) but rather as part of a dynamic continuum of controlling factors. Thus it is not a question of having or not having self-control, as if it were an enduring personality trait. Instead, it is a matter of how much and what kind of self-controlling behaviors a person can exercise in certain situations. The same person, for example, may exercise considerable self-control when it comes to alcoholic drinking but manage badly when faced with time pressures. Self-control, like personality, is much more of a "situation specific" phenomenon than is commonly recognized (Mischel, 1973, 1975).

In understanding self-control processes the notion of reciprocal influence is crucial. There is the recycling influence of the person's actions influencing his environment and, in turn, the person being influenced by that same environment. Thus neither the person nor the environment is autonomous (Bandura, 1974). Self-control should not be conceived of as some exclusive homunculus ("little man inside") that gets manifested in willpower or a drive to achieve (cf. Thoresen & Mahoney, 1974) nor should it be reduced strictly to a matter of external contingencies (self-reinforcement) that create the illusion of self-control (cf. Goldiamond, in press; Thoresen and Wilbur, in press). Instead, self-control should be viewed as a series of specific, cognitively-mediated actions that a person uses to regulate and alter situations, including the cognitive environment, so that desired change takes place.

Major Concepts and Techniques

A tentative framework for teaching and learning self-control skills has been proposed which can provide a conceptual basis for experimental

studies (Thoresen, 1976; Thoresen and Coates, 1976). The framework stresses four broad areas, recognizing that they are not independent from each other: commitment, awareness, restructuring environments, and evaluating consequences and standards. Table 2 presents these four areas along with some examples of questions relevant to each area. We shall briefly discuss each area as it relates to some career issues.

Table 2

Four Major Areas in Teaching and Learning Self-Control Skills With Some Questions and Tasks to Consider

Commitment (Developing and Sustaining "Motivation")

a. Assess what you attribute your past and present behavior to.
b. Explore your beliefs and anticipations about your ability to change and the possible consequences.
c. Find out how often you engage in positive self statements and receive encouraging comments from significant others.

Awareness (Observing One's Behavior)

a. Notice what you say to yourself about problem situations.
b. Determine under what circumstances you currently engage in the behavior you want to change.
c. Notice how frequently you currently engage in the behavior you want to change.

Restructuring Environments (Planning Situations and Environments)

a. Establish a supportive environment: Teach family, friends and/or associates how you would like them to help.
b. Modify the stimuli or cues that prompt the behavior you want to change.
   - external: Rearrange your physical environment.
   - internal: Alter undesirable internal cues such as thoughts and images.
c. Develop a written contract which specifies goals, behavior needed to attain those goals, environmental planning and specific consequences for success anf failure.

Evaluating Consequences and Standards for Self-Evaluations (Assessing and Changing Current Reinforcement and Standards)

a. Assess how currently experienced consequences may be maintaining behavior to be changed

Table 2 (contd)

b. Assess long-term goals; redesign goals into series of short-term sub-goals.

c. Use self-rewarding experiences.
   - covert: Plan positive thoughts to follow successful actions.
   - overt: Plan to give yourself or have someone give you a reward for success (e.g., playing golf on Saturday, a gift, etc.)

d. Use Self-Punishing Experiences
   - covert: Plan negative thoughts and/or images to follow undesired actions immediately.
   - overt: Withhold a selected pleasant activity (e.g., watching your favorite TV show) or take away something you have (e.g., fine yourself 10 points each time an undesirable behavior occurs).

Commitment

This first area includes the person's attitudes, beliefs, and conceptions--what might be called the cognitive ABC's--relevant to self-change. What, for example, does the client believe about his own abilities and skills in academic work? What are the client's self-attributions about his problem of constantly avoiding choices and shying away from new experiences? Does the person's conception of himself as someone who "never really gets off the ground" relate to his getting involved actively in career selection activities? The initial focus on commitment behaviors recognizes the need to clarify and make explicit what traditionally has been called motivation. Rather than conceptualizing motivation as a static prerequisite for change, it is viewed as developing and building commitment behaviors slowly over time. For example, helping clients recognize and alter irrational beliefs and distorted stereotypes of themselves and career areas serves as one step in creating commitment.

Awareness

Awareness is closely related to commitment. Gaining knowledge of one's actual behavior in specific situations often helps clarify and alter

misperceptions and faulty beliefs (e.g., "I never . . ." or "I always . . ." statements can be modified by specific frequency data). The term self-observation, sometimes referred to as self-recording or self-monitoring, characterizes one way awareness can be translated into operational terms. The person learns to discriminate (notice), count, chart, and evaluate certain actions, some of which may be thoughts or images. For example, a client may notice and record the number of times she reads, writes, discusses, or thinks about three possible career options (e.g., medicine, psychiatric nursing, or social work). A dissatisfied middle-aged accountant who is starting to think about changing careers may observe the frequency and intensity of his tension headaches or depressing moods. A high school senior may establish a self-contract in which she agrees to spend at least 15 minutes each day on career alternatives. As part of her self-control program she observes and records the number of minutes spent each day on a chart posted in her bedroom by her desk. Systematically observing your own behaviors can provide the kind of data that fosters commitment as well as sets the stage for knowing what to alter in the environment.

Restructuring Environments

This strategy, sometimes referred to as stimulus or situational control, is concerned with physical, social, and cognitive events. As the examples in Table 2 suggest, the focus is on changing the particular features of the environment from hindering to helping persons in their efforts to change. Hence a procrastinating housewife, wanting to convert into action her often expressed intentions of exploring part-time job possibilities, may alter her environment by placing a three by five index card by the telephone

to cue her to call the Women's Career Center. A high school junior might negotiate a verbal (or written) self-contract with his counselor for reading at least twenty minutes each day about careers in forestry management, sporting goods sales, and respiration therapy. Such a contract or agreement would specify positive as well as negative consequences for completing the task. It might also specify how the social and/or physical environment could be altered to help carry out the reading. Perhaps his older brother or father could be involved in prompting him to do the reading. An industrial business manager confronted with a disruptive stream of personnel problems may rearrange his work schedule to be in his office in the morning, a time when he finds it easiest to listen empathically and offer constructive suggestions. He might also learn to rearrange his own internal environment in potentially stressful situations by cueing himself subvocally with self-instruction to "relax," "remain calm," "take a deep breath".

Friends, spouses, and siblings, of course, represent the most significant features of a person's social environment. As Table 2 points out, these persons can learn to provide support and encouragement for self-change. "If you're not part of the solution, you're part of the problem" aptly captures the import of arranging the social environment to support self-change. The ongoing actions required of an effective career-decider can be encouraged and maintained by systematically planning environments.

Evaluating Consequences and Standards

Much of what a person does and will do is influenced directly or indirectly by the effects or results of his actions. Consequences experienced immediately or anticipated in the future can be planned by the person to encourage self-change. An impressive variety of pleasant events can serve

as positive consequences to increase certain actions while a host of negative or aversive experiences can provide discouraging consequences to reduce behavior. Table 2 suggests that consequences may be cognitive or external to the person.

Too often a client is routinely expected to labor long and hard in career-relevant actions without providing immediate step-by-step support and encouragement. The tedious tasks of gathering accurate and reliable information, for example, on career options is not likely to continue for long unless the person enjoys something in return for his efforts. The painstaking work of sifting and sorting through information on careers and carefully weighing it against personal values, experiences, and abilities will remain a rarely performed endeavor unless positive consequences are provided. Clearly, if clients are to learn to view career decisions as somewhat "tentative", i.e., as life-long inquiries in which one engages repeatedly over time, they must be taught how to arrange consequences so as to encourage and support their long term efforts.

Current Limitations

Unfortunately, self-control theory has outstripped supporting data. Most controlled studies have been concerned with selected clinical problems of adults (e.g., obesity) or a limited range of children's problems. (e.g., disruptive classroom behavior). Further, a preponderance of published reports have been analogue studies; college students have often been subjects in laboratory settings. To date no published studies using self-control processes with career behaviors have been reported. Still, existing data is at least promising. There is every reason to believe that self-control processes have direct and immediate relevance to theory and research in career.

decision-making and vocational development.

Table 3 provides an example of how self-control processes have been used to establish a multi-component intervention program for children and adolescents. The topic, weight reduction, is not directly germane to careers, yet many of the same components could be employed in a training system to teach career decision-making.

Table 3

Self-Control Weight Reduction Program
for Children and Adolescents

Observing Actions (Discriminating, Counting, Evaluating)

1. Commitment/Cognitive Environment: Contracts are established to promote adherence; weight-relevant cognitions and maladaptive self-thoughts are identified and modified through the use of self-instruction training. Self-attribution training to replace inappropriate belief systems and to build commitment to slow but steady reduction.

2. Self-Monitoring: Record quantity and quality of food consumed, eating situations, weight, selected cognitions, social behaviors.

Planning Environment

3. Family Involvement: Sessions conducted in the home, supplemented with appropriate reading material, modeling, and guided practice; specific steps outlined; contractual agreements and contingency arrangements negotiated.

   a. Support: Family trained in two specific procedures: offer praise for adherence to program objectives; never offer person food at or between meals. Child trained to identify and reinforce helpful family behaviors.

   b. Stimulus Control: Entire family establishes regular eating times and location; family reduces rate of eating, food served on smaller plates, food platters not kept on table.

   c. Nutrition: Meals prepared in accordance with protein, vitamin, and caloric needs of dieter; restricted foods kept out of the house or in inconspicuous places.

   d. Negotiation Skills Training: Reduce family conflict; permit development and implementation of strategies to promote weight loss program.

4. Nutrition: Child instructed in the basics of food metabolism and caloric values; importance of balanced diet; foods from various categories (highly recommended, recommended, restricted) identified; plans for eating these foods outlined; lists made and kept in conspicuous place; child assists with food shopping responsibilities.

5. Stimulus Control: Child separates eating from other activities; eats more slowly; places high calorie foods in inconspicuous places.

6. Physical Exercises: Child encouraged to participate in initially nonstrenuous and pleasurable exercise; perhaps combined with family or peer involvement programs.

7. Social Skills Training: Training in appropriate social skills to reduce isolation, provide substitute activities, relieve boredom, depression, anxiety.

8. Peer Involvement Program: Therapist meets with one or two peers identified by child; possible use of small counseling groups.

   a. Peer Support: Praise for progress and encouragement to continue in weight loss program.

   b. Stimulus Control: Peers would avoid eating with client at inappropriate times and places; would not offer client food.

   c. Tutoring, Modeling, and Buddy System: Assist child in finding alternative activities during times of temptation; model appropriate behaviors.

9. Relaxation Training: Identify and learn to use activities to reduce stress; combine with cue-controlled relaxation.

Arranging Consequences

10. Phase I--Training: Exposure to film or live models demonstrating appropriate self-reinforcement for habit change; therapist reinforcement of child habit change; parent daily reinforcement of child habit change.

11. Phase II--Self-Reinforcement: Gradual transfer of reinforcement administration to child; reinforcement for matching therapist and parent evaluations; social praise; complete self-administration and evaluation of reinforcement.

    Maintenance: Maintain family and peer support, administration of self-reinforcement, use of cognitive environment; schedule meetings of lengthened intervals; focus client attention on specific strategies on a weekly basis during followup; phone calls, postcards, surprise meetings held with therapist or significant others on variable interval schedule.

12. Role Playing/Covert Rehearsal: Practice alternative responses to difficult eating and interpersonal situations. Combine with abbreviated problem-solving training.

(Adapted from Coates and Thoresen, Note 1)

Using Self-Control Techniques with Jessica

Behavioral self-control methods relevant to Jessica's dilemma can be seen as an extension of the general social learning model of career decision-making cited earlier (Krumboltz, Note 6). These techniques are directly linked to a major field of psychological theory and research (e.g., Bandura, 1975, 1969; Mischel, 1973; Thoresen & Mahoney, 1974) and, in this way, provide an ongoing basis for revision and improvement based on a broad range of scholarly work.

Jessica's attempt to develop a career orientation using a self-control program could be enhanced by improving her skills in the four areas described in Table 2. The counselor could help Jessica develop a general commitment to the decision-making process as well as more specific commitments to particular changes. Self-awareness in the form of both quantitative and qualitative information about past and present thoughts, feelings, and external actions might help Jessica establish the general objectives she would need to guide her career search. The information search itself, as well as her own efforts at self-discovery, could be encouraged and supported by environmental planning and restructuring. Additional support for these efforts could also come from scheduling various self-rewards. Of course the four major areas would not necessarily be pursued in counseling for all persons in the same sequence discussed here.

In general, the early focus in counseling would center heavily on issues of self-awareness and commitment, while later emphasis would tend to shift to specific techniques for achieving established goals, such as task approach skills, environmental structuring, and self-reward methods. However, as long as counseling continues, new awareness and commitments would tend to emerge. Thus counseling would have to remain a flexible

process, calling for tentativeness and timing by the counselor. In Table 4, we present some specific self-control actions that Jessica might take in her efforts to select a career. These examples are only suggestive, yet they illustrate how self-control could be used.

Table 4

Jessica's Use of Self Control Techniques: Some Possible Examples

I. Commitment

A. Jessica makes general commitment to career decision-making process.

1. Writes brief, vivid description of:

a. Life as it will probably be if she makes no decision at all.
b. Life as it could possibly be if she makes a wise choice.

2. Discusses descriptions with counselor.

3. Writes self-contract to explore:

a. What she enjoys and dislikes most about her present life (classes, activities, subjects, etc.).
b. What things she does best and what she does least well.
c. What things she has enjoyed in the past and what achievements have been most meaningful.
d. What are her career-relevant skills and personal qualities, as well as specific habits or behaviors that may hinder attempt to decide wisely.

B. Jessica makes specific commitments (after finding that she has certain problems):

1. To reduce fear of asking professors for help in getting information about careers.

2. To stop procrastinating; spend more time in library reading relevant books on journalism.

3. To change her negative stereotypes about writers.

4. To learn to express her views more effectively when working with males.

II. Awareness

A. Jessica self-observes her past and current career-relevant thoughts, feelings, and external actions.

1. Writes a work autobiography describing past activities, their outcomes and her personal feelings about them.

2. Observes systematically for two weeks own thoughts and feelings about when she is happiest and when most depressed.

3. Observes herself coming to counseling session unprepared and embarrassed because she was afraid to request an appointment with a journalism professor.

III. Restructuring Environments

A. Jessica arranges her external environment to support her career search and self-change efforts.

1. Arranges to meet once a week with several other female students to discuss what they have learned about themselves and their career interests during the past week.

2. Plans to spend 30 minutes per day at a particular desk in library reading room researching careers.

3. Places a stimulus cue (card) in each of her notebooks as reminders to research careers in library.

4. Arranges (with help of counselor) to observe models of effectiveness, self-assertion, and interview behaviors.

5. Plans to increase time spent with one of her more assertive female friends.

B. Jessica arranges her internal environment to support her efforts.

1. Makes a list of "nervous" and "depressive" thoughts about herself and the future.

2. Writes a counterstatement for each thought and rehearses these new thoughts twice a day for 10 minutes each time.

3. Learns deep muscle relaxation skills (with help from her counselor) and practices them twice daily for about thirty minutes each time.

4. Uses relaxation skills just prior to approaching professors for information.

5. Makes a list of things about journalism that she admires and each day devotes time to these thoughts while doing something she enjoys.

IV. Evaluating Consequences and Standards

A. Jessica examines how current consequences maintain present behavior

1. Notes how talking about business career is more socially encouraged than law or journalism

2. Discussed with counselor how avoidance of professors is reinforced since it reduces tension and nervous feeling.

3. Recognizes that social support and encouragement from female peers (weekly discussion group) plays important role in doing the "less likely" and more effortful behaviors, such as reading and thinking about career alternatives.

B. Jessica arranges positive consequences for accomplishing desired changes.

1. Agrees to give herself five points each day for 30 minutes of career reading toward a new back-pack for summer camping (150 points).

2. Buys a cup of her favorite Viennese Mocha at the campus coffee shop each time after talking to a professor about her interests.

3. Plays a favorite record while she relaxes or thinks positive thoughts about her future; immediately removes the records and leaves the room if negative thoughts intrude.

C. Jessica arranges negative consequences for undesired thoughts and actions.

1. Imagines herself receiving a rejection notice from a graduate school every time she finds herself procrastinating.

2. Arranges to contribute $1.00 to her most hated political cause whenever she fails to arrange her weekly appointment with a professor.

Some Needed Research

Let's look at some research needs mentioned earlier. First, we need to know more about how to help people make career changes throughout their lives. Career researchers should devote more attention to people who are past their late teens and early twenties. Within a cognitive social learning framework, we have suggested that career selection requires the learning and using of

certain cognitive and social skills. Seldom do persons naturally acquire such skills. Indeed, they may not know they need them until they start looking for work. The waste in human hopes and counselor effort might be prevented if people were taught how to make and engineer decisions earlier in their lives. In addition to research with older groups (career-changers) investigations are needed of methods to teach decision skills to children in the primary grades (e.g., Russell & Thoresen, 1976; Spivak & Shure, 1974). "Later and earlier" might well be a watchword for selecting age groups for future studies.

Second, we have called attention to the low yields for counseling practice from current research on vast student populations. Almost all career research is vulnerable to criticisms that Eisner (1972) has leveled against research in education:

1. Failure to distinguish between statistical and practical (e.g., educational) significance.
2. Tendency to ask only those questions that fit a particular research paradigm (e.g., correlational).
3. Neglect of long-term changes and other effects.
4. Artificial focus on the person apart from how that person acts in the natural environment.
5. Brevity or superficiality of treatment interventions.

These considerations and others mentioned earlier lead us to argue for intensive research designs: controlled descriptive and experimental case studies of single persons over time, i.e., time series research (Thoresen, in press). Unlike the older clinical case method, intensive designs meet the scientific criteria of systematic observation and

rigorous instrumentation techniques. Such studies can also satisfy the challenges to the internal and external validity of experiments as elaborated by Campbell and Stanley (1966). Indeed, intensive designs of one or a few cases well surpass many of the presumed advantages of comparative group experiments and correlational-survey designs (cf. Thoresen, in press).

More carefully planned mixed and stratified group designs are also needed along with greater attention to person-environment relationships. Specifically, we would like to see more longitudinal studies of individual school children and adult career-changers in which several carefully chosen cognitive and social variables are systematically explored. Data from such studies could provide the base from which hypotheses could be generated and then tested using mixed factorial designs and regression analyses. The major objective would be to get closer to the personal, anecdotal reality of clients, to reduce stereotypical notions based on group designs and to build our theories out of these encounters in a systematic way. As we learn more about the characteristics and behavior patterns of individuals in specific "real-life" situations, we may be able to develop more lasting and valid generalizations (Cronbach, 1975).

Some questions about self-control techniques that merit investigation include the following:

Commitment

- Do persons who view themselves as capable of making changes in their environment engage in decision-making more readily than those who see themselves as less capable?
- How can the "change of choice" or delay of gratification problem (decay in power of delayed but larger reward vs. smaller, more available ones) be solved?

- What are effective ways of altering beliefs about future consequences and their relation to taking certain actions ("behavior-outcome rules")?
- What is the difference in outcomes between a verbal and a written commitment (self-contract) with and without a support person involved?
- What commitment-sustaining methods are effective during the maintenance and personal progress phases after formal training has been completed?

Awareness

- What techniques are most effective for teaching people (especially children) to observe in a systematic fashion what they think, feel, or do on a daily basis over time?
- How much do self-observing techniques contribute to self-change (e.g., will systematic observing of the number of times a person makes a decision over several days help a person become more decisive about his or her career)?
- How do increases in conscious awareness influence commitment behaviors as well as the experience of conflict between alternative actions and effort?

Restructuring Environments

- How can observational (social modeling) learning and guided practice with performance aids be used to teach children to make explicit decisions both at home and in school?
- What kinds of physical and social stimulus methods (e.g., cueing) work best for people of different ages, cultures,

or work/living settings?

- How can social support systems (e.g., peers) be utilized to encourage and maintain career choice activities in different settings and at different ages?

Evaluating Consequences and Standards

- What patterning of self-rewards and/or self punishments is most effective?
- Can the approach-avoidance paradigm be used to help clients better understand how conflicting consequences maintain their behavior (often without their awareness)?
- What is the relative efficacy of tangible (material) as opposed to intangible consequences used positively and negatively?
- Can excessively high or "unrealistic" goals and self standards be reduced by using mini-goals and explicit criteria for short-term tasks?

As can be seen, the questions vary from the general to the rather specific. The specificity of our questions depends on how the information will be used in a given instance.

We believe the best long-term approach would be to develop multi-component educational programs to teach self-control skills in career decision-making in specific settings or to certain client groups (e.g., elementary schools, adult career changers). These programs could be evaluated in terms of changes in specific client behaviors. Initially, we would try to discover if the total ensemble of techniques in the self-control training program had a significant effect in a personal as well as quantitative sense. If the program achieved promising results, the next step would be to assess the

relative merits of its various components by means of carefully planned factorial designs.

Career choice is a deceptive metaphor: it calls to mind a single moment of decision rather than an ongoing process. For many, counseling for career decisions means helping someone decide where to get hired. In some ways we have "impaled ourselves on an inadequate construct", to cite George Kelly's (1955) apt phrase. Clearly, it is time to take a much broader view of the career problem. To paraphrase some provocative work in the philosophy of science (Kuhn, 1970; Popper, 1972), we have some real "troubles" to deal with in the career area and our scientific puzzles - our conventional research methods - are not well designed to solve them. Instead we seem locked in to using our puzzles to resolve "problems", that is, situations known to be solvable by using certain puzzles. The matching game, such as correlating personality types with job titles, may seem like the best game in town but at the very least it shouldn't be the only one.

We face the challenging task of teaching people how to become better architects of their lives - that's a genuine trouble we are just beginning to fathom. Responsibility to our clients includes initiating them into the builder's art--those survival skills found useful in fashioning a way of life of which work is a significant part. It is as if we were preparing people to build their own houses in a time of rapid change; teaching them how to create practical and pleasing means of shelter that would be durable yet flexible to accommodate changing needs. We believe that cognitive social learning theory and self-control research can provide the materials from which sturdy careers can be built.

Reference Notes

1. Coates, T. J., & Thoresen, C. E. Childhood obesity: Some problems and treatment possibilities. Unpublished manuscript, Stanford University 1975.

2. Dayton, C. M., & Uhl, N. P. Relationship between Holland Vocational Preference Inventory scores and performance measures of high school students. Cooperative Research No. 5-0581-2-12-1. College Park, Md.: Research and Demonstration Center, University of Maryland, 1966.

3. Folsom, Jr., C. The validity of Holland's theory of vocational choice. Unpublished doctoral dissertation, University of Maine, 1971. No. 72-5626.

4. Hauselman, A. J. Personality and the choice of undergraduate major: A test of Holland's theory. Unpublished doctoral dissertation, University of Kentucky, 1971. No. 72-9397.

5. Helms, S. T., & Williams, G. D. An experimental study of the reactions of high school students to simulated jobs (Research Report No. 161). Baltimore: Center for Social Organization of Schools, Johns Hopkins University, 1973. (ERIC Document Reproduction Service No. ED 087-882.)

6. Krumboltz, J. D. A social learning theory of career decision-making. In A. Mitchell, G. Jones & J. Krumboltz (Eds.), Final Report No. NIE-C-74-0134, A social learning theory of career decision making. Palo Alto, CA: American Institutes of Research, 1975.

7. Mitchell, A. M., Jones, G. B., & Krumboltz, J. D. (Eds.), Final Report No. NIE-C-74-0134, A social learning theory of career decision making. Palo Alto, CA: American Institutes for Research, 1975

8. Werner, W. E. A study of Holland's theory of vocational choice as it applies to vocational high school students. Unpublished doctoral dissertation, State University of New York at Buffalo, 1969.

References

Atkinson, J. W., & Feather, N. T. A theory of achievement motivation. New York: Wiley, 1966.

Bailey, L., & Stadt, R. Career education: New approaches to human development. Bloomington, Illinois: McKnight Publishing Co., 1973.

Bandura, A. Principles of behavior modification. New York: Holt, Rinehart and Winston, 1969.

Bandura, A. Behavior theory and the models of man. American Psychologist, 1974, 29, 859-869.

Bandura, A. Social Learning Theory, Prentice-Hall, 1975.

Bem, D. Self-perception theory. In L. Berkowitz (Ed.), Advances in experimental social psychology, Vol. 6. New York: Academic Press, 1972, pp. 1-62.

Block, J. Some reasons for the apparent inconsistency of personality. Psychological Bulletin, 1968, 70, 210-212.

Borow, H. (Ed.). Career guidance for a new age. Boston: Houghton-Mifflin, 1973.

Campbell, D. P. Manual for the Strong-Campbell Interest Inventory, +325 (merged form). Stanford, California: Stanford University Press, 1974.

Campbell, D. T., & Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1966.

Coates, T. J., & Thoresen, C. E. Learning to Sleep Well, Engelwood Cliffs, NJ: Prentice-Hall, in press.

Crites, J. O. Vocational Psychology. New York: McGraw-Hill, 1969.

Cronbach, J. J. Beyond the two disciplines of scientific psychology. American Psychologist, 1975, 30, 116-127.

Dolliver, R. H. Strong Vocational Interest Blank versus expressed vocational interests: A review. Psychological Bulletin, 1969, 72, 95-107.

Eisner, E. W. Emerging modesl for educational evaluation. School Review, 80, (4), August 1972.

Feibleman, J. K. Scientific Method. Hague: Martinus Nijhoff, 1972.

Goldiamond, I. Self-Reinforcement. J Appl Beh Analysis, in press.

Goldfried, M. R., & Goldfried, A. P. Cognitive change methods. F. H. Kanfer & A. P. Goldstein (Eds.) Helping people change. New York: Pergamon Press, 1976.

Goldfried, M. R., & Merbaum, M. (Eds.) Behavior change through self-control. New York: Holt, Rinehart & Winston, 1973.

Goldman, L. Using tests in counseling. New York: Appleton-Century-Crofts, 1961.

Greenhaus, J. H. Self-esteem as an influence on occupational choice and occupational satisfaction. Journal of Vocational Behavior , 1971, 1, 75-83.

Hannum, J. W., Thoresen, C. E. & Hubbard, D. A behavioral study of esteem with elementary teachers. In M. J. Mahoney & C. E. Thoresen Self-control: Power to the person. Monterey: Brooks-Cole, 1974, 144-155.

Heckhausen, H. Achievement motive research: Current problems and some contributions towards a general theory of motivation. In W. J. Arnold (Ed.), Nebraska symposium on motivation. Lincoln: University of Nebraska Press, 1968. Pp. 103-174.

Holland, J. L. A personality inventory employing occupational titles. Journal of Applied Psychology, 1958, 42, 336-342.

Holland, J. L. Explorations of a theory of vocational choice: VI. A longitudinal study using a sample of typical college students. Journal of Applied Psychology, 1968, 52, 1-37.

Holland, J. C. Making vocational choices: A theory of careers. Englewood Cliffs, NJ: Prentice-Hall, 1973.

Holland, J. L. The Occupations Finder. Palo Alto, CA: Consulting Psychologists Press, 1974.

Holland, J. L. Manual for the Vocational Preference Inventory. Palo Alto, CA: Consulting Psychologists Press, 1975.

Holland, J. L., & Gottfredson, G. D. Using a typology of persons and environments to explain careers: Some extensions and clarifications. (Research Report No. 204). Baltimore: Center for Social Organization of Schools, Johns Hopkins University, 1975.

Holland, J. L. & Lutz, S. W. The predictive value of a student's choice of vocation. Personnel and Guidance Journal, 1968, 46, 428-436.

Holland, J. L., Sorensen, A. B., Clark, J. P., Nafziger, D. H., Blum, Z.D. Applying an occupational classification to a representative sample of work histories. Journal of Applied Psychology, 1973, 58, 34-41.

Hughes, Jr., H. M. Vocational choice, level and consistency: An investigation of Holland's theory on an employed sample. Journal of Vocational Behavior, 1972, 2 (4), 377-388.

Hunt, R. A. Self and other semantic concepts in relation to choice of a vocation. Journal of Applied Psychology, 1967, 51, 242-246.

Insel, P. M., & Moos, R. H. Psychological environments: Expanding the scope of human ecology. American Psychologist, 1974, 29, 179-188.

Jones, E. E., Gergen, K. J., & Davis, K. E. Some determinants of reactions to being approved or disapproved as a person. Psychological Monographs, 1962, Whole No. 521.

Kaplan, A. The conduct of inquiry: Methodology for behavioral science. Scranton, PA: Chandler, 1964.

Kelley, G. A. The Psychology of Personal Constructs. New York: W. W. Norton, 1955.

Klausner, S. Z. (Ed.) The Quest for Self-Control. NY: Free Press, 1965.

Kogan, N., & Wallach, M. A. Risk taking: A study in cognition and personality. New York: Holt, Rinehart & Winston, 1964.

Krumboltz, J. D., & Baker, R. D. Behavioral counseling for vocational decisions. In Borow (Ed.), Career Guidance for a New Age. Boston: Houghton Mifflin, 1973.

Krumboltz, J. D., & Thoresen, C. E. (Eds.) Behavioral counseling: Cases and techniques. New York: Holt, Rinehart and Winston, 1969.

Krumboltz, J. D., & Thoresen, C. E. (Eds.) Counseling Methods. New York: Holt, Rinehart & Winston, 1976.

Kuhn, T. S. The Structure of Scientific Revolutions. Chicago: University of Chicago Press, 1970.

Lackenmeyer, C. W. Experimentation - misunderstood methodology in psychological and social-psychological research. American Psychologist, 1970, 25, 617-624.

Lackey, A. An annotated bibliography for Holland's theory: The self-directed search, and the Vocational Preference Inventory (1972-1975). JSAS Catalog of Selected Documents in Psychology, in press.

Mahoney, M. J. Cognition and behavior modification. Boston: Ballinger, 1974.

Mahoney, M. J. The scientist. Boston: Ballinger, 1976.

Mahoney, M. J., & Thoresen, C. E. Self-control: Power to the person. Monterey, CA: Brooks/Cole, 1974.

Mansfield, R. Self-esteem, self-perceived abilities, and vocational choice. Journal of Counseling Psychology, 1973, 3, 431-433.

Meehl, P. E. Theory testing in psychology and physics: A methodological paradox. Philosophy of Science, 1967, 34 103-115.

Meichenbaum, D. Cognitive behavior modification. Morristown, NJ: General Learning Press, 1974.

Miller, W., & Munoz, R. How to Control Your Drinking. Engelwood Cliffs, NJ: Prentice-Hall, in press (1976).

Mischel, W. Toward a cognitive social learning reconceptualization of personality. Psychological Review, 1973, 80, 252-283.

Mischel, W. A cognitive social learning approach to morality and self-behavior. In T. Lickman (Ed.), Morality: A handbook of moral behavior. New York: Holt, Rinehart and Winston, 1975.

Mischel, W., & Masters, J. C. Effects of probability of reward attainment on responses to frustration. Journal of Personality and Social Psychology, 1966, 3, 390-396.

Mooney, M. Willpower is a dirty word. Woman's Day, October, 1974, 72 Pf.

Osipow, S. H. Theories of career development. New York: Appleton-Century-Crofts, 1968.

Parsons, C. E., & Wigtil, J. V. Occupational mobility as measured by Holland's theory of career selection. Journal of Vocational Behavior, 1974, 5, 321-330.

Platt, T. Strong inference. Science, 1964, 146, 347-353.

Popper, K. R. Objective Knowledge. London: Oxford University Press, 1972.

Rachlin, H. Self-control. Behaviorism, 1974.

Rotter, J. B. Social learning and clinical psychology. Englewood Cliffs, NJ: Prentice-Hall, 1954.

Russell, M. L., & Thoresen, C. E. Teaching decision-making skills to children. In J. D. Krumboltz & C. E. Thoresen (Eds.), Counseling Methods. New York: Holt, Rinehart and Winston, 1976, 377-383.

Spivack, G., & Shure, H. B. Social adjustment of young children: A cognitive approach to solving real-life problems. San Francisco: Jossey-Bass, 1974.

Super, D. E. Career development: Self-concept theory: Essays in vocational development. New York: College Entrance Examination Board, 1963.

Super, D. E. Vocational theory: Persons, positions, and processes. The Counseling Psychologist, 1969, 1, 2-9.

Terkel, S. Working: People talk about what they do all day and how they feel about what they do. New York: Pantheon Books, 1974.

Thoresen, C. E. Relevance and research in counseling. Review of Educational Research, 1969, 39, 263-281.

Thoresen, C. E. Behavioral means and humanistic ends. In C. E. Thoresen (Ed.) Behavioral Modification in Education, 72nd Yearbook of Natl Society for the Study of Education, Chicago: Univ of Chicago Press, 1973.

Thoresen, C. E. The healthy personality as a sick trait. The Counseling Psychologist, 1973, 4, 51-55.

Thoresen, C. E. Self Control: Learning How to C.A.R.E. for Yourself. Madison, Wisconsin: Counseling Films, Box 1047, 1976.

Thoresen, C. E. Let's get intensive: Single case research. Englewood Cliffs, NJ: Prentice-Hall, in press.

Thoresen, C. E., & Coates, T. J. Behavioral self-control: Some clinical concerns. In M. Hersen, P. Eisler, & P. Miller (Eds.), Progress in behavior modification. Vol. 2. New York: Academic Press, 1976, 301-352.

Thoresen, C. E., & Mahoney, M. J. Behavioral self-control. New York: Holt, Rinehart & Winston, 1974.

Thoresen, C. E., & Mehrens, W. A. Decision theory and vocational counseling: Important concepts and questions. Personnel and Guidance Journal, 1967, 46, 165-172.

Thoresen, C. E., & Wilbur, C. S. Some encouraging thoughts about self-reinforcement. Journal of Appl Beh Analysis, in press.

Watson, D. L., & Tharp, R. G. Self-directed behavior: Self-modification for personal adjustment. Monterey, CA: Brooks/Cole, 1972.

Wiggins, J. D. The relation of job satisfaction to vocational preferences among teachers of the educable mentally retarded. Journal of Vocational Behavior, 1976, 8, 13-18.

Yabroff, W. Learning decision-making. In J. D. Krumboltz & C. E. Thoresen (Eds.), Behavioral counseling: Cases and techniques. New York: Holt, Rinehart and Winston, 1969.

Ziegler, D. J. Self-concept, occupational member concept, and occupational interest area relationships in male college students. Journal of Counseling Psychology, 1970, 17, 133-136.