Development of a Career Exploration Inventory (CEI)

by

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(ABSTRACT)

The purpose of this study was to develop a comprehensive career interest inventory based on Super's (1980, 1984) Life Span, Life Space Theory of Career Development, and McDaniels' (1983) concept of Career = Work + Leisure (C = W + L). Career counselors increasingly have recognized the importance of a developmental perspective (Seligman, 1980; Super, 1983) and the inclusion of leisure as an integral component of one's career (Blocher & Siegal, 1984; Edwards, 1984; McDaniels, 1984).

The results of this study produced a one hundred and twenty item interest inventory which can be used in career counseling, leisure counseling, or in a holistic approach. The Career Exploration Inventory (CEI) is an innovative instrument which measures developmental work and leisure interests from the past, in the present, and those anticipated in the future. The instrument is a self-administered, scored, and interpreted interest inventory for guided career exploration.

Norms were developed for the CEI using two separate norm groups: unemployed/underemployed adults (N=104) and employed adults (N=106) ranging in age from eighteen to seventy-three. Validity of the CEI was comparable to existing work and leisure interest inventories. Coefficient alpha internal consistency measures ranged from .56 to .84, while subjects' top scores for the interest categories were consistent with their work and leisure activities 43 to 51% of the time. The CEI correctly identified sustained,
developmental interests for work (54%) and leisure (67%). Test-retest reliability measures for the CEI ranged from .80 to .92 over a three month period of time.

The results of this study verified the utility of a developmental instrument which measures an individual's work and leisure interests over time. Many subjects reported the instrument's accuracy in measuring "true" continuing interests, rather than just current interests.
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CHAPTER 1

INTRODUCTION

A 29-year-old man was working as a fiscal auditor for a county government agency. Although earning a comfortable living, he was not satisfied at work. In his leisure time, he enjoyed studying investments and investing his money in various financial ventures. As his success grew in these financial ventures, word spread of his exploits. Soon others were coming to him regarding their financial planning. Approximately one year later, he opened his own financial planning office and is very satisfied in his new job.

A 52-year-old woman learned to sew when her children were young. She made clothes for herself and her family. Eventually she went to work part-time for another seamstress. In her leisure time she completed a few business courses at the local community college. Recently, she opened a small business sewing for other people out of her home.

These vignettes are illustrative of how leisure can combine with work to help people in the development of their careers. Career counseling professionals are also becoming cognizant of a variety of interactive relationships in which leisure can combine with work to enhance career development. McDaniels (1984, pp. 66-67), after observing the work/leisure connection in people’s lives, illustrated the closeness of the connection by describing people who were working at part-time jobs which grew from leisure interests; former volunteers who made the transition to full-time employment at the same location; people who moved from casual interest to beginning skill, to mature skill, to part-time, then to full-time employment in a leisure related area; and people who lived for leisure, and found life satisfaction not through their work, but in their leisure activities.

Leisure is a topic that has always been discussed at great length, but the true impact of the importance of leisure has been overlooked. One comprehensive study (U.S. News and World Report, August 10, 1981, pp. 62-63) heightened the awareness of counseling professionals of the importance of leisure. This article estimated that Americans spent a great deal of money and time on leisure activities. Recognition of this importance is also
evidenced by the number of books and manuals that were written in the early 1980's on the topic by members of the counseling profession (Edwards & Bloland, 1980; Kelly, 1982; Loesch & Wheeler, 1982; Roberts, 1981; Tinsley & Tinsley, 1982), in the many models of leisure counseling that have been developed (Bloland & Edwards, 1980; Dowd, 1984; Edwards, 1980; Loesch, 1980; Loesch & Wheeler, 1982; McDowell, 1983; Neulinger, 1981; Peevy, 1981; Tinsley & Tinsley, 1982), and in the number of doctoral dissertations written (Frisbie, 1982; Peevy, 1981) about the topic of leisure.

Further recognition of leisure as a counseling concern was reflected by the fact that the October 1981 issue of The Counseling Psychologist and the December 1984 issue of The Journal of Career Development were devoted entirely to leisure topics, while publications such as the Journal of Leisure Research, Journal of Leisurability, Leisure Sciences, and the "Leisure Today" section of the Journal of Health, Physical Education, and Recreation are also devoted to the topic of leisure. In addition, the Leisure Activities Blank (LAB) (McKechnie, 1974) has been published by Consulting Psychologists Press.

Despite these significant achievements, no coherent field of leisure counseling existed in the view of Tinsley & Tinsley (1981). Rather, there existed a growing awareness of the importance of leisure in the life of the individual and an increasingly more widely held conviction that there should be a field of leisure counseling. Neulinger (1981) stated that:

We must learn to think of leisure without thinking of work. If our task were merely to promote a fuller life, the total individual, or a career spanning work and free time periods, we would not need a new discipline. But to cope with a totally new, never before existing condition of society we need a discipline unburdened by values that have become dysfunctional (p. 70).

Some leisure professionals, conversely, say that the process of assisting individuals with leisure decision-making should be of a general counseling nature (Hayes, 1977; Iso-
Ahola, 1981; McDowell, 1975; Mitchell, 1979). Bloland and Edwards (1980) also contend that while leisure counseling as a distinct specialty has been significant, it is now time to consider it part of the general counseling field.

As changes have taken place in society and the world of work, career counselors are recognizing the inclusion of leisure as an integral component of one's career (Allen, 1980; Blocher & Siegal, 1981; Bloland & Edwards, 1981; Edwards, 1984; Lerner, 1982; McDaniels, 1984, 1989; Rimmer & Kahnweiler, 1981; Seligman, 1980; Super, 1980, 1984, 1986) and are increasingly being called upon to assist individuals in identifying leisure as well as work interests (Herr & Cramer, 1988; McDaniels, 1984, 1989; Super, 1984, 1986). Blocher and Siegal (1981) see leisure counseling as a parallel and companion activity to vocational counseling in which the two elements of work and leisure combine to generate the concept of career. "These two services, in our view, combine to assist clients in building life styles that support optimal levels of individual growth and development, personal health and satisfaction, and social contribution" (p. 43).

Similarly, McDaniels (1965,1977A) initiated the formula "Career equals Work plus Leisure" (C = W + L) and suggested a holistic approach to career counseling in which work and leisure combine over one's life span to form the basis for a career. McDaniels (1984) later suggested that C = W + L be expanded to Career Counseling equals Leisure Counseling plus Work Counseling (CC = LC + WC) and added that "a skilled career counselor of the future should be able to provide assistance in both areas separately or in a combined holistic approach" (pp. 574-575). Therefore, the first major postulate of this study is that career counselors must be able to assist their clients in the areas of work counseling and leisure counseling, or in an integrated approach.

Super's (1980) "Life-Span, Life Space" theory of career development is a comprehensive model which integrates aspects of work and leisure by depicting the nine
roles that can be used to describe the life space of most people and the four principle theaters in which these roles are played. Additionally, the theory also accounts for the life span of an individual by outlining five major life stages, specific career stages, related chronological ages, and major developmental tasks associated with each stage. Super (1986) believed that this life span view of career could be viewed as "the sequence and combination of roles that a person plays during the course of a lifetime" (p. 96). Therefore, the second major postulate of this study is that career counselors must be able to assist their clients in the identification of interests throughout the life span. Thus, the thesis of this study is that career counselors must be prepared to assist clients in the identification and exploration of work and leisure interests throughout the life span.

**Need for the Study**

The need to assist individuals in their search for leisure interests is not new. Howe (1984) claims it was first recognized during the 1960's and lead to the development of several leisure counseling instruments. In the 1970's there were calls for an improvement of leisure counseling instrumentation. Almost twenty years after the first leisure counseling instruments were developed, Sessoms (1981) still asked the question, "Do we have the instrumentation necessary to assess recreation interests, potential, and optimum leisure behavior?" (p. 65).

To answer the question posed by Sessoms, many authors have reviewed the existing leisure counseling instrumentation. During the 1970's, authors in recreation and leisure paused to reflect upon the assessment instruments that were developing in the field of leisure counseling (Carver, 1974; Mitchell, 1979). Similarly, the status of leisure assessment instrumentation has been systematically reviewed by persons in counseling and psychology many times in the early 1980's (Loesch, 1980; Loesch & Wheeler, 1982;
Mundy, 1981; Wehman & Schleien, 1980; Witt, Connolly, & Compton, 1980). Loesch (1980) claims the results of these reviews were mixed at best and had some rather discouraging findings from his computer-assisted literature search, including the fact that:

Fewer than ten leisure interest assessment instruments are commonly mentioned in the professional literature, and two of those are no longer available...only one is published by a major publishing company; the others typically are available only from their respective authors. In sum, even the few available assessment instruments directly relevant to leisure counseling are hard to obtain (p.16).

More recently, Howe (1984) utilized a modification of Loesch and Wheeler's categorization system to identify current leisure assessment instruments. Her system categorized leisure instrumentation into six categories: leisure attitudes, leisure values, leisure states, leisure behavior, leisure satisfaction, and leisure interests. Howe cited a total of 22 instruments, with the majority of instruments designed to identify leisure interests. The interest inventories identified by Howe were the "Leisure Interest Inventory" (Hubert, 1969), "Avocational Activities Interest Index" (D'Agostini, 1972), "Mirenda Leisure Interest Finder" (Mirenda, 1973), "Self-Leisure Interest Profile" (McDowell, 1974), "Leisure Activities Blank" (McKechnie, 1974), "Avocational Activities Inventory" (Overs, Taylor & Adkins, 1977), "Constructive Leisure Activities Survey" (Edwards, 1980), and "State Technical Institute Leisure Activities Project" (Navar, 1979). Additional interest inventories identified by the reader were the "Leisure Development Inventory" (McDaniels, 1977B) and "Life Interests Inventory" (Frisbie, 1982).

Although these leisure interest inventories can be combined with traditional career counseling inventories for a comprehensive career counseling approach, there is a need for more assessment instruments that identify interests in both work and leisure. Super (1986) suggests that it is more helpful in practice to think of work and leisure as being
sections of a rotating stage in a large theater in which one section is set for the playing of leisure roles and another set for the playing of work roles. McDaniels (1984) purports that "some counselees may seek help in either leisure or the work area or both, and that a skilled career counselor of the future should be able to provide assistance in both areas separately or in a combined holistic approach" (p. 574-575). Frisbie's (1982) Life Interests Inventory (LII) is the only assessment instrument designed to identify interests in both work and leisure.

In addition to measuring work and leisure interests, there is a need for an interest inventory that is developmental in design. Over the past two decades career counselors have recognized the importance of a developmental perspective in career counseling (McDaniels, 1984; Seligman, 1980; Sonnenfeld & Kotter, 1982; Super, 1980; Vondracek, Lerner, & Schulenberg, 1986). Super (1984) contends that "it is important to maintain three time perspectives: the past from which one has come, the present in which one currently functions, and the future toward which one is moving" (p. 192).

McDaniels' (1977) "Leisure Development Inventory" (LDI) and McKechnie's (1975) "Leisure Activities Blank" (LAB) are the only career or leisure assessment instruments that are developmental in that they measure sustained interests over one's life span. However, no career or leisure assessment instrument has been designed that combines the constructs of one's life span and one's life space. Therefore, the purpose of this study was to develop a brief, self-assessment instrument which allows clients to identify a variety of work and leisure interests from the past, in the present, and anticipated in the future.
Developmental Design

In response to this need for a developmental self-assessment instrument to assist individuals in the exploration of a variety of work and leisure interests, a Career Exploration Inventory will be developed. The instrument is intended to be a brief, self-exploration oriented inventory which can be used in career or leisure counseling, or in a holistic approach. In addition, the assessment instrument will be developmental in nature, thus identifying sustained leisure interests from the past, in the present, and those anticipated in the future.

There have been many concerns expressed about the current status of leisure assessment instruments. In response to Loesch's (1980) concern that leisure counseling assessment instruments lack a sound theoretical base, this inventory is based on two theories of career development: (1) utilizing Super's (1980) Life Span, Life Space theory of career development, the instrument will identify interests over one's life span by measuring past, present, and future interests, and (2) utilizing McDaniel's' (1984) concept of "Career equals Work plus Leisure" (C = W + L), it will identify interests of one's life space by identifying a variety of work and leisure interests.

Although there are many systems available to classify interests and occupations, the interest inventory developed in this study will not use any of these systems for the following reasons: (1) the CEI will be applicable to both work and leisure interests and there is no substantial research which suggests that any of the existing classification systems are adaptable to the world-of-leisure; and (2) the CEI emphasizes a developmental approach to career counseling rather than an approach which matches client with the world-of-work through "static" classification systems such as Holland's (1973) classification system, the ACT World-of-Work Map (ACT, 1985), the Dictionary of Occupational Titles (U.S. Department of Labor, 1977), the Guide for Occupational Exploration (U.S.
Employment Service, 1979), or the Group and Level Occupational Classification System (Roe, 1956).

In order to identify and structure work and leisure options for the client, basic interest categories were developed which are applicable to both work and leisure. These interest categories were modeled after the twenty interest categories developed by Super and Bowlsbey (1979) for use in the Guided Career Exploration course. Since the primary objective of the CEI is to identify the client's developmental, continuing work and leisure interests over time, the fifteen interest categories will make no attempt to distinguish between fields and levels of occupations (c.f. Roe, 1956). Thus, basic interest categories were developed to allow clients to easily explore how their work and leisure interests developed and combined over their life span to form the concept of career. Therefore, independent judges will qualitatively group the items into interest categories, verify each item's content, and name each category. A quantitative analysis of the items and scales will then be conducted to enhance content validity.

The specific items used in the development of the inventory will also be selected on the basis of their applicability to both work and leisure activities. A pool of approximately 700 items will be selected upon review of existing career and leisure interest inventories. Any items which could be identified as belonging exclusively to work or leisure were eliminated or restructured. For example, items such as "Working in a hospital" or "Volunteering in a hospital" could be restructured to read "Caring for patients in a hospital". Twelve items for each of the fifteen interest categories will be selected and then submitted to a test of internal consistency, thus enabling the researcher to identify the eight items per category which demonstrate the highest reliability and account for the most error variance.
The following task statements will guide the development of the Career Exploration Inventory:

1. The first task is to select and place items into independent interest categories that are equally appropriate to work and leisure activities.

2. The second task is to establish whether high scores on the interest scales are consistent with the individual's identified work and leisure activities.

3. The third task is to determine if continuing work and leisure interests can be inventoried from the past, in the present, and anticipated in the future.

4. The fourth task is to describe the stability of scores over time from each of the interest scales.

Validity and Reliability

Many counselors are extremely concerned about the general lack of quality in terms of validity, reliability, and level of sophistication of leisure assessment instrumentation (Loesch, 1980; Witt, Connolly, & Compton, 1980). They say that the instruments tend to be underdeveloped in terms of a substantive research base of support and have not been subjected to norming procedures using large and representative samples. Loesch (1980) concluded that "the leisure assessment instruments simply have not been sufficiently developed to merit their current level of use" (p. 16).

Therefore, this instrument will be tested for validity and reliability. Content validity will be established in two ways for the scales. A review of the literature revealed the lack of many instruments which can be utilized for identifying work and leisure interests. The inventory design will be based on the research design utilized by Frisbie (1982) in the
development of the Life Interest Inventory. First, a pool of specific interest items will be generated from existing career and leisure interest inventories. These items will be compiled because they are the best descriptors of work and leisure interests. Then, review of the specific items for content, form, and placement into the appropriate interest categories will be confirmed by independent judges who have a background in career counseling and leisure counseling.

Concurrent criterion-related validity will then be established by subsequent testing of unemployed adults and past participants of the Employee Career Development Program at Virginia Tech with the inventory, thus comparing their actual work and leisure interests with the high scores on the inventory. Construct validity will primarily be established by determining how effectively the CEI measures developmental, continuing interests from the past, in the present, and anticipated in the future. In that no other interest inventories measure developmental work and leisure activities, no attempt can be made at this time to make direct comparisons for additional construct validation.

Reliability of the instrument will be established by internal consistency estimates (Coefficient Alpha) and also by test-retest reliability. A sample population will be given a preliminary form of the CEI consisting of twelve items for each of the fifteen interest categories. Coefficient Alpha estimates will be established, thus determining the four items to be eliminated from each of the fifteen categories. Approximately three months after the original validation group is tested a portion of the original group of subjects will be re-tested to get an estimate of the stability of the scales.

Limitations

The target population chosen for research in this study is comprised of adults 18 years of age or over. Since the instrument is designed to determine the work and leisure
interests of adults, elementary and secondary students are excluded from the study. Although it is important to assist these populations in career exploration, their work and leisure interests are frequently different in nature from adult interests.

To determine the validity and reliability of the Career Exploration Inventory, the inventory will be administered to a relatively small group of unemployed and underemployed adults in Pennsylvania and past participants of the Employee Career Development Program at Virginia Tech. These populations were deliberately chosen because they range in age from approximately 18 to 73 and they tend to have a variety of work and leisure concerns. The study will make no attempt to determine the statistical differences, if any, between sex and age and scores in each of the interest categories.

**Definition of Terms**

Career -- The totality of work and leisure one does in a lifetime (McDaniels, 1982).

Career Counseling -- Assisting individuals in the career development process (Frisbie, 1982).

Career Development -- The total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to shape the career of any given individual over the life span (Sears, 1982).

Interest -- A preference cultivated during leisure time or during work (Healy, 1982).

Leisure -- Any activity an individual knowingly (i.e. consciously) chooses to define as leisure (Loesch and Wheeler, 1982).
Life Space -- The constellation of the positions occupied and the roles played by a person (Super, 1984).

Life Span -- The course of life (Super, 1984).

Work -- A conscious effort, other than having as its primary purpose either coping or relaxation, aimed at producing benefits for oneself and others (Sears, 1982).

Chapter Summary

Leisure is becoming increasingly important in the career exploration and life satisfaction of most people. As it does, career counselors are becoming cognizant of a variety of interactive relationships between work and leisure and are increasingly being called upon to assist individuals in identifying leisure, as well as work interests. The formula Career equals Work plus Leisure (C = W + L) was suggested by McDaniels in 1984. Additionally, career counselors are viewing career as a developmental process that occurs throughout the life span rather than a one-time decision.

A review of the literature reveals two major needs: (1) the need for an assessment instrument to assist counselees in the identification of work and leisure interests, and (2) the need for an assessment instrument to assist counselees in the identification of interests over the life span. Therefore, a brief, developmental interest inventory is needed for self-exploration. To meet these needs, the Career Exploration Inventory will be developed. This interest inventory will be designed to assist clients in the exploration of work and leisure interests from the past, in the present, and anticipated in the future.
Organization of the Study

Chapter One included an introduction, need for the study, developmental design, validity and reliability, limitations, definition of terms, chapter summary, and organization of the study. Chapter Two will present a review of the professional literature. The complex relationship between work and leisure will be reviewed, definitions of leisure will be presented, the need to provide counseling for leisure will be discussed, the integration of work and leisure in career counseling will be illustrated, the need to measure developmental interests will be discussed, and developmental approaches to career counseling will be summarized. Chapter Three will present a review of the instrument developed in this study. The development and construction of the inventory will be described, along with the methods of analysis. Chapter Four will discuss the quantitative results of the validation and reliability studies and the qualitative comments and suggestion about the CEI. The utility of the CEI will be examined and two case studies presented. Chapter Five will present a summary, then conclusions will be drawn and recommendations will be made for further research with the Career Exploration Inventory.
CHAPTER 2

REVIEW OF THE LITERATURE

This chapter will review topics important in the development of the Career Exploration Inventory. Although there exists a complex relationship between work and leisure, career counselors are increasingly becoming aware of the need for leisure counseling, as well as career counseling. They are increasingly combining the aspects of work and leisure to form the concept of career and are helping people use leisure activities as a method of enhancing their career options. However, since most career interest inventories neglect to identify leisure interests, there remains a need for more career assessment inventories which identify interests in both work and leisure. Career counseling is also increasingly being viewed as developmental in nature. However, no career interest inventories exist which measure sustained interests over one's life span. These two major needs form the basis and structure for the interest inventory being developed in this study.

This chapter will describe the assessment of interests, the need for leisure counseling, various leisure definitions, the assessment of leisure, the relationship between work and leisure in career counseling, the need to measure interests over the life span, and development of a rationale for measuring developmental interests.

Interest Assessment

Seligman (1980) suggests that in one way or another, everyone has been involved in the exploration of interests when deciding which activities to pursue. She identified and defined three types of interests. Expressed interests are feelings about what people report when they are asked what they do or do not enjoy. Manifest interests, the second type of
interest Seligman identified, are those which are embodied in people’s lifestyles. Finally, inventoried interests are those which are reflected on standardized interests inventories. Super (1957) adds another type of interest: "tested interests are manifest interests but interests manifested under conditions other than in life situations" (p. 219).

Although this classification of interests appears to simplify the assessment of interests, the nature of interests and their assessment has been a controversial subject throughout the years. Super (1957) contends that most early investigations of interests relied on expressed interests or by simply asking people what they were interested in. However, simply asking clients what they were interested in was considered an unreliable and invalid method for predicting the eventual occupation they engaged in (Darley & Hagenah, 1955; Super & Crites, 1962). These findings inevitably led to the common practice of taking an indirect approach to differentiate interests--the interest inventory.

Strong (1931) undertook the first systematic investigation of the nature of interests and reported that people in any occupation or profession have a characteristic set of likes and dislikes that differentiate them. This study provided the basis for the Strong Vocational Interest Blank. Super (1949), in summarizing the nature of interests, proposed that "interests are the product of interaction between inherited, neural and endocrine factors, on the one hand, and opportunity and social evolution on the other" (p. 420), while Guilford (1959) felt that interests pertain to selected activities rather than to a condition or status.

Some professionals have recently suggested that interests are sources of intrinsic satisfaction (Healy, 1982; Seligman, 1980; Super & Crites, 1962; Super & Bohn, 1970; Walshe, 1977), while some feel that interests also serve as motivators (Healy, 1982; Walshe, 1977). In career counseling, Super and Crites (1962) defined interests as constellations of likes and dislikes in the form of positive or negative reaction to various stimuli. Later, Super and Bohn (1970) suggested that interests predict persistence in a field
as well as satisfaction with the field. This idea of interest as an intrinsic source of satisfaction and as an indicator of satisfaction with a particular field persists today.

"Interest inventories assess intrinsic sources of satisfaction and indicate the likelihood that an individual will enjoy a particular type of work" (Seligman, 1980, p. 103).

Some recent research has questioned the usefulness of inventoryed interests. A study by Holland and Lutz (1968) compared expressed interests with the Vocational Preference Inventory (VPI) and found a much higher "hit rate" for expressed interests, thus greatly increasing the regard for the predictive validity of expressed interests. Similarly, Borgen and Seling (1978) replicated the study using the Strong Vocational Interest Blank (SVIB) and found no evidence to conclude that the SVIB is superior to expressed interests.

These findings led to the question "Why administer interest inventories if expressed interests are as valid for predicting a client's eventual occupation?" Seligman (1980) answered this question by suggesting that some individuals want to take an interest inventory to confirm or reality test their expressed interests. Secondly, she contends that many individuals in the career decision-making process are undecided and have no expressed interests, thus interest inventories stimulate these individuals to explore areas of interest similarity. Kuder's (1977) research reveals that expressed interests in specific occupations appear to be the least stable and that measured interests often yield useful information in the exploration process.

The Need to Provide Counseling for Leisure

The plea to assist individuals to effectively utilize their leisure time is not a recent development. According to some early reports (Olson, 1957; Auge, 1961), the first recreational counseling program was implemented in 1957 for male psychiatric patients at the Veterans Hospital in Kansas City, Missouri. Stracke (1977) reviewed the program and
reported that the format consisted of group therapy for patients who would be in residence for at least three months. According to Stracke, some of the program objectives were "to teach the patient how to make use of available community resources for recreation", "to stimulate the patient's awareness of recreational interests and develop new recreational skills," and "to stimulate the patient's awareness of his own recreational needs" (p. 33).

It is only during the last decade, however, that social scientists have begun to stress the importance of leisure on the mental health and life satisfaction of the individual. Iso-Ahola (1980) and Neulinger (1981) suggest that leisure provides meaning to life because leisure satisfaction and perceived quality of life are significantly related and because the leisure experience involves intrinsic motivation which arises from within the individual rather than one that is extrinsically motivated. Similarly, Hayes (1984) sees the need to help countless Americans to live more satisfying, fulfilling lifestyles and claims that "too many individuals have been, and will become, victims of our current Age of Anxiety or Age of Boredom. They may live meaningless, empty lives, become victims of burnout and stress, and/or develop pathological, addictive, or unhealthy habits" (p. 149).

The importance of leisure has increased dramatically in recent years. This increase was evidenced in a study which estimated that Americans spent more than 262 billion dollars for leisure during 1982 (U.S. News and World Report, 1981). The leisure industry grew from a 58 billion to a 244 billion-dollar industry from 1965 to 1981 for a 321 percent growth. Leisure expenditures were 77 billion dollars more than on defense and leisure spending accounted for one of every eight consumer dollars. Foreign visitors spent another 12 billion dollars on leisure in this country in 1980. Estimates included expenditures of 2.2 billion dollars on camping, hunting, and fishing.

Other reports such as Where does the Time Go? The United Media Enterprises Report on Leisure in America (1982) and The Miller Lite Report on American Attitudes Toward
Sports (1983) verified the trend toward increases in leisure time, spending, and participation. Recent research reports (c.f., Robinson, 1989) verify that interest in leisure is continuing to increase.

Many professionals have conducted research which reveals that in order for people to gain a sense of personal stability and continuity, they will become increasingly dependent upon the extent to which they use their leisure to fulfill their needs (Brooks & Elliot, 1971; Iso-Ahola, 1980; Kaplan, 1975; Neulinger, 1974; Oberle, 1971). Tinsley and Tinsley (1981) contend that individuals often use their leisure to raise self-esteem, increase life satisfactions, and facilitate self-actualization. They say that "although some individuals are no doubt able to gain these benefits independently through creative use of their leisure, others may need to turn to qualified professionals for assistance" (p. 45).

Other professionals believe that leisure also contributes to entertainment and relaxation (Iso-Ahola, 1982; Kelly, 1982), an increased sense of freedom (Dowd, 1984), companionship and relationships with others (Dowd, 1984), physical health and variety in life (Kelly, 1982), meeting unmet needs (Dowd, 1984; Loesch & Wheeler, 1982), enhancing creativity and self-expression (Dowd, 1984; Kelly, 1982; Loesch & Wheeler, 1982), self-improvement and self-definition (Loesch & Wheeler, 1982), development of autonomy (Loesch & Wheeler, 1982), development of interpersonal and social skills (Iso-Ahola, 1980), enhancement of character and personality (Iso-Ahola, 1980), and self-fulfillment and personal meaning (Dowd, 1984; Loesch & Wheeler, 1982).

**Leisure Definitions**

With the emergence of leisure counseling as a specialty, many reviews of the definitions of leisure have also emerged. In the early 1980's two reviewers (Loesch, 1980; Peevy, 1981) categorized the many definitions which describe leisure. Peevy (1981), in
developing a life cycle approach to leisure counseling, extensively reviewed the literature on leisure. She identified four major categories of leisure definitions. The categories are:

I. CLASSICAL-EMPIRICAL DEFINITIONS

1. Classical-leisure is characterized as a state of being, a condition of the soul, having no relation to linear, clocktime (Murphy, 1975).

2. Empirical-leisure is viewed implicitly as of secondary importance to work (Kando, 1980).

II. SYMBOLIC, EXPOSITORY, SCIENTIFIC DEFINITIONS

Kaplan (1975) described these approaches as:

1. Symbolic approach-refers to observations of the poet, novelist, and pictorial artist.

2. Expository approach-refers to a large variety of statements about leisure that may call on history, interpretations of a culture, or penetrating insights of an observer of whatever background; here we have a midway point between the first and third (the scientific approach), flowing over into both, and drawing on them.

3. Scientific approach-draws explicitly on studies of persons or activities that use acceptable techniques familiar in the academic and laboratory consensus and treat the leisure phenomena as rigidly as it would other human behavior. (p. 164)

III. RESIDUAL, RESIDUAL-DESCRIPTIVE, NORMATIVE DEFINITIONS

Parker (1971) described these approaches as:

1. Residual-Concerned with what is to be taken out of total time in order that leisure alone should remain. Clearly the minimum that can be taken out of all time to leave only leisure is working time in all the narrow sense of employment.
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2. Residual-Descriptive-consists of those which start with a residual approach as those above, but go on to include a positive description of its content or function, sometimes adding a prescriptive element.

3. Normative-stress the quality of leisure, though they may do this by contrasting it from the attributes of work. (pp. 21-23)

IV. CONTEMPLATION, ACTIVITY, FREE-TIME, HOLISTIC DEFINITIONS

Examples of these approaches are:

1. Leisure as contemplation-high intellectual and cultural involvement; a state of mind or being (Carlson, McLean, Deppe, & Peterson, 1979).

2. Leisure as activity-apart from the obligation of work, family, and society.....to which the individual turns at will, for either relaxation, diversion, or broadening his knowledge and spontaneous social participation, the free exercise of capacity (Dumazedier, 1967).

3. Leisure as free time-Leisure is increasingly recognized as that time available to be used at the individual's discretion--a self-deterministic condition (Murphy, 1975).

4. Holistic view of leisure-Leisure consists of relatively self-determined activities and experiences which are available due to discretionary income, time, and social behavior; this leisure activity may be physical, volunteer, creative or some combination (McDaniels, 1977).

Loesch (1980) first identified five major categories of definitions. These categories were later added to and amended (Loesch & Wheeler, 1982):

1. Time-based--leisure is viewed as something one does in time left over after the time is spent on something else.

3. Work-related--compensatory leisure where an individual "compensates" for the lack of meaningfulness in work through participation in "meaningful" leisure activities, or spillover leisure where an individual has a job which is meaningful and continues to find meaningfulness in leisure activities.

4. Psychological--Center on the subjective nature of the human experience. Most often these types of definitions reflect an attitude adopted by the individual.

5. Models of Leisure--Encompass leisure definitions or explanations that incorporate multiple dynamics and factors simultaneously. In general, these models attempt to interrelate many of the "singular" definitions of leisure described previously.

6. Goal-based--Any activity an individual knowingly (i.e. consciously) chooses to define as leisure.

Given the many differing but overlapping definitions of leisure, Super (1986) proposes a uniform scientific definition in which the following characteristics are important in varying combinations and degrees:

1. Leisure involves the use of time.

2. Leisure time is time free from the need to play other roles, such as those of worker, student, homemaker, and citizen.

3. It may, as in playing tennis, require the expenditure of effort, but it may, as in idling in a hammock, require no effort.

4. Leisure pursuits are engaged in to meet some personal need, attain some value or values, and sometimes to use some ability or abilities.

5. They may thus have a clear goal, such as producing a painting, or have an ill-defined goal, such as relaxing.

6. They may be classified as extensions of, compensations for, or even as unrelated substantively to the occupation pursued.
7. They may support, conflict with, or be neutral to one's other roles, such as that of worker, in their use of time and effort.

8. They may have preparatory or replacement value for occupations in pre-employment, employment, and retirement (pp. 107-108).

Similarly, Gunter and Gunter (1980), using concepts of freedom of choice, time, and involvement, have identified several modes or styles of leisure that can be useful as reference points for career counselors. They are:

1. Pure Leisure--an ideal state in the blending of individual choice and involvement.

2. Anomic Leisure--how to use the increased leisure options society bestows on us, particularly in the absence of institutional roles and involvements, is a problem.

3. Institutional Leisure--One's work involvement or involvement with other institutions, such as family, community, politics, or religion, may also be so intense as to minimize one's freedom of choice outside of the penetration of these institutions throughout our life style.

4. Alienated Leisure--Although the institutional pervasiveness of leisure may be similar to that in the previous category, in this form of leisure there is little personal satisfaction or positive psychological identification with it.

Definitions of leisure vary greatly. Leisure has been described in a variety of ways including a state of mind or being, free time, or time left over after work. This study is based on the comprehensive definition of leisure by Loesch and Wheeler (1982) which states that leisure is "any activity an individual knowingly (i.e. consciously) chooses to define as leisure."
Assessment in Leisure Counseling

Much has been written about the assessment process and the use of instrumentation in career counseling (Goldman, 1971; Schuerman & Watterson, 1977; Seligman, 1980). However, little has been reported about these issues in the leisure counseling literature. Witt et al. (1980) suggest that because leisure is a complex process, assessment is one means of helping counselors to improve and enhance the behaviors of their clients. Assessment can be the first step in leading to change in client behavior as a consequence of services delivered.

Witt et al. (1980) and Loesch and Wheeler (1982) contend that there are many ways to define the assessment of leisure. Howe (1984) defines leisure assessment as a process of identifying and discovering client needs, attitudes, values, and behaviors where change, clarifications, improvement, or refinement of behavioral functioning is desired. "These data are used as a guide in either the provision, development, or facilitation of leisure experiences for the client based upon the changes, clarification, improvement, or reinforcement needed" (p. 235).

"The assessment process, to some extent, reduces subjectivity in leisure counseling, and the degree to which the processes are standardized also facilitates comparison between and within clients" (Loesch & Wheeler, 1982, pp. 111-112). They add that this often leads to amassing large amounts of information in a relatively short period of time that is current, accurate, and initiates a discussion between counselor and client that is basic to making informed decisions. According to Howe (1984), the assessment process and its instrumentation must be identified to accurately assess the needs of our clients. While leisure interests play an integral role in the leisure assessment process, Witt et al. (1980) call for counselors to use instruments that probe beyond simple interest inventories into the identification of intrinsic needs, leisure attitudes, and leisure behaviors or patterns.
In their review of leisure counseling instrumentation, Witt et al. (1980) said that the current state of the art reveals a dominant emphasis on interest inventories and profiles related to leisure activity involvement. Additionally, they say that:

Current assessment efforts seem to be largely agency specific, focused on isolated developments in assessment procedures to address unique agency need or services. They concluded that there appears to be very few developments in assessment procedures that are designed to address the general concept of leisure competence or clientele needs in relation to leisure functioning (p. 7).

Loesch and Wheeler (1982) suggest that although assessment is vital in helping clients make leisure-related decisions, the available instruments appear simplistic and unavailable to counselors. They add that leisure counseling assessment instruments are not sufficiently developed to merit their use and conclude that the "state of the art" of assessment in leisure counseling can be summarized in a single word: "poor."

Many leisure counseling professionals (Loesch & Wheeler, 1982; Witt et al., 1980) stress that counselors should strive to improve the quality of leisure assessment instruments so that we may confidently use them in the leisure and career counseling process to aid us in providing effective services and opportunities for clients through the acquisition, interpretation, and use of valid and reliable information. Loesch and Wheeler (1982) conclude that:

Since the state of the art of assessment in leisure counseling is not good, many of the instruments available (seemingly) have as much potential for harm as for help in their current stages of development. Hopefully many of these instruments will be refined as additional data are gathered. If they are, they could become valuable resources for leisure counseling (p. 134).
The Work/Leisure Relationship

Although it is generally assumed that work and leisure are related, there is little agreement about the nature of this relationship. The study of the relationship between work and leisure can be traced back to Super's (1940) study of the psychology of avocations. In his study model railroaders, amateur photographers, and amateur symphony orchestras were found to be engaging in their hobbies in one of three ways: (1) as extensions of their occupations, (2) as compensation for their occupations, or (3) as unrelated to their occupations. This classification system is still being replicated in reviews of the literature about the relationship between work and leisure (Champoux, 1981; Staines, 1980) and will be used in this study to differentiate the various work/leisure relationships.

Super's (1940) first work/leisure relationship was titled a "theory of self-expression" or a "theory of self-fulfillment" in which it is far more important to do something—whether in one's work or leisure—that one enjoys doing and does well. Parker (1971) suggested this pattern is evident when no distinction can be made between what is work and what is leisure. Wilensky (1960) felt that when attitudes acquired at work become ingrained in the individual, they become a continuation of one's work experiences.

Blocher and Siegal (1981) suggest that in such a "work leisure style" close relationships exist between the two sets of activities. In such relationships locate in three major areas: the activities may tend to be of a similar nature in terms of intrinsic interests or satisfactions involved; the activities may involve interaction in terms of personal relationships or associations that originate around work; or the activities may involve the physical and social framework within which work and leisure relate. This pattern is what Allen (1980) called "fusion," Parker (1971) called "extension," and Wilensky (1960) called "spillover."
Super's (1940) second work/leisure relationship was entitled a "theory of balance" in which one's hobby should be different from one's work. Parker (1971), using this pattern, suggested that because work has little intrinsic reward individuals must look to leisure for a sense of identity and satisfaction. Blocher and Siegal (1981) term the second pattern of work-leisure interaction as "supplemental" because leisure activities may be chosen for their contribution to a rounding out of experiences which help establish a generally fulfilling lifestyle. They add that in this work-leisure pattern sharp contrasts between work and leisure in terms of activities, personal associations, and physical or social settings may be evident. Bammel and Bammel (1982) contend that in this pattern, work is seen as the dominant force in life. Thus, leisure is seen as compensating for boredom or excitement at work. This pattern is what Allen (1980) called "polarity," Parker (1971) called "opposition," and Wilensky (1960) called "supplemental."

Super's (1940) third work/leisure relationship was entitled a "neutral theory" in which one's work is satisfying and in which other interests and abilities do not find expression in the occupation. Blocher and Siegal (1981) suggest that this type of interaction between work and leisure can be called "compensatory" because leisure activities may have a driven or compulsive quality and may sometimes involve self-defeating or debilitating consequences. Parker (1971) conceptualized this work-leisure pattern as one of "neutrality" which notes a detachment from work as well as from leisure; Staines (1980), in his review of the literature, referred to this pattern as a "null" position which views work and leisure activities as being unrelated.

More recently, additional patterns of the work-leisure interaction have been suggested including leisure as an excellent preparation for work (Bloland, 1984; McDaniels, 1984, 1989; Super, 1984). Super (1984) feels that:
leisure can be thought of as preparation for work, and can be valuable exploratory experiences which help youths to try themselves out in occupationally-related activities or adults to develop personal and work skills useful in a variety of occupations (p. 74).

Other work/leisure interactions have been described in the literature including leisure as substitution for work (Super, 1984), leisure as conflicting with work because it takes time and energy away from duties of the job (Super, 1984), leisure as vocational exploration (Bloland, 1984), leisure as vocational tryout (Bloland, 1984), leisure as a method of supporting one's work (Super, 1984), working at home as an outgrowth of leisure interests and skills (McDaniels, 1989), leisure for enhancing the overall life satisfaction of clients (McDaniels, 1984, 1989; Blocher & Siegal, 1981), volunteering to gain vocational skills (McDaniels, 1989), and leisure as a possible source of income in full or part-time employment (McDaniels, 1984).

The Integration of Work and Leisure in Career Counseling

A closer synthesis between work and leisure concepts is not a recent suggestion. Green (1968) attempted to make a distinction between a "job" as a way of only meeting material needs and "work" as an avocational or vocational activity which is significant to us as people. Wrenn (1973) also suggested the concept of vocation as a calling or sense of mission to effectively integrate paid employment and voluntary work. Others (c.f., Bloland & Edwards, 1981; Bolles, 1988; Eason, 1972; Hollis & Hollis, 1976; Kirn & Kim, 1978; Loughary & Ripley, 1976; McDaniels, 1984, 1989; Super, 1980) have suggested that career counseling be expanded to include all aspects of one's life.

Herr and Cramer (1988) contend that the volumes ascribed to work and leisure and the interaction between the two terms have been matters of significant discussion for many centuries. The debate has escalated in the past two decades as the onset of automation,
robotics, and other machine-machine systems have altered the character of many forms of work. This interaction is evident in the evolution of the National Vocational Guidance Association (NVGA) decennial volumes, which marked the fiftieth anniversary of North America's oldest organization dedicated to education and vocational guidance. The initial multi-authored volume was entitled Man in a World at Work (Borow, 1964), the next decennial volume was entitled Vocational Guidance and Human Development (Herr, 1974), and the most recent volume was entitled Designing Careers: Counseling to Enhance Educators, Work and Leisure (Gysbers & Associates, 1984).

Career is a construct consisting of multiple roles (Bolles, 1988; Hesser, 1984; McDaniels & Hesser, 1983; Super, 1980, 1984). Super (1984) suggests that life involves playing many roles, including that of child, student, worker, leisurite, citizen, spouse, parent, homemaker, or pensioner. He adds that a career can be viewed as "the sequence and combination of roles played by a person in the course of a lifetime" (p. 75). Hesser (1984), building on Super's (1980) "Life-Span, Life-Space" theory of career development, developed the Life-Style Grid (LSG) which "integrated the Adult Leisure Role with other career roles while accounting for career role complexity" (p. 135).

Bloland and Edwards (1981) believe that "the demands of our changing society will render career counseling inadequate and ineffective if it continues as a separate and distinct field" (p. 107) and have developed a career counseling model which synthesizes work and leisure. Their model consists of four overlapping and interlocking steps, including: (1) identifying client needs (answers the question Why?), (2) identifying activities to meet needs (answers the question What?), (3) differentiate work and leisure activities (answers the question Which?), and (4) facilitate client's participation in selected activities (answers the question Where?).
Many developmental approaches have also integrated the aspect of leisure when discussing the concept of career (Bolles, 1988; Lerner, 1982; McDaniels, 1982; Peevy, 1981; Sonnenfeld & Kotter, 1982; Super, 1980). McDaniels (1982) has proposed a model for life planning throughout the life span and has suggested many ways of integrating leisure be into the life planning process. Some of the methods by which leisure can be integrated into each of the life stages include: promoting intellectual development, teaching creative activities, developing physical abilities, and encouraging volunteerism in childhood; extracurricular activities, peer influence, and family influence in adolescence; campus activities, intercollegiate athletics, volunteering, academic-related clubs, and work-related activities in young adulthood; family leisure activities and work-related activities in adulthood; continuing education, vocational and technical education, volunteerism and self-development activities at midlife; and travel, education, hobbies, volunteering, and clubs during retirement.

Blocher and Siegal (1981) have proposed a cognitive developmental theory of leisure and work. Their approach stresses that human beings are purposive and actively reach out to organize information about work and leisure opportunities in their environment. They say that:

If we can understand how people process information about, and make choices with regard to, that portion of their lives that is most amenable to individual control, we may learn more about their ways of construing those more externally constrained aspects of their experience that we call work (p. 33).

In an attempt to formulate a unified career counseling approach, McDaniels (1989) has suggested seven principles aimed at bringing about a broad, all-encompassing view of career development across the life span. According to McDaniels, career counselors need
to: (1) stress both continuity and change in future occupations; (2) emphasize the best and
broadest preparation possible, along with marketable skills; (3) be aware of all the
educational and occupational options/information systems; (4) encourage development of
leisure and work interests and abilities; (5) bring out a life-span approach to Career = Work
+ Leisure (C = W + L); (6) emphasize life satisfaction from a broad range of both work and
leisure options; and (7) help people find, prepare for, and engage in work and leisure
options they really like.

Enhancing Career Options Through Leisure

Super (1984) contends that for the unemployed, "leisure may be seen as a substitute
for work in an economy which does not provide employment for all its potential workers"
(p. 75), and adds that "the leisure pursuit, the avocationally developed talent of today, may
prove to be crucial vocationally tomorrow" (Super, 1986, p. 113). Super (1985) also
suggests that as a result of recent research into the work/leisure connection, more is known
about education-work-leisure relationships and how each contributes to the other. He adds
that:

Knowledge of and interest in leisure will be put to work
than ever as leisure becomes more generally available,
its importance in human development and adjustment are
realized, resources for fostering its effective use are
improved, and guidance and counseling personnel equip
themselves to provide help in its use (p. 356).

McDaniels (1989), in a chapter of The Changing Workplace entitled "Helping people
put their leisure to work," focused on the idea that an individual's personal development is
effected by the leisure activities they engage in and that "taking part in leisure-time activities
may also help us to discover useful and productive occupations" (p. 195). He then
described how leisure involvement and skills develop and are translated into life
satisfactions in part-time or full-time work. He suggests that the person (1) becomes aware of a leisure activity; (2) explores the activity; (3) prepares for greater involvement in it; (4) gains satisfaction from it; and in some instances (5) put the leisure activity to work (p. 200).

McDaniels (1989) also suggests some methods for career counselors to use in order to encourage people to become more aware of and explore options for putting their leisure to work. These include: talking with people in the community, region, or state who have put their leisure to work; emphasizing the education-for-leisure options open to every person such as traditional courses, vocational-technical education, adult education programs, and correspondence study; and helping people use community resources such as clubs and community agencies.

Kimeldorf (1989), in the book Pathways to Leisure, provides many excellent leisure search resources for clients to use in examining leisure in their lives and for putting their leisure into action for pleasure and profit. He suggests that "many of us discover new skills or talents during leisure hours and these talents sometimes lead to a new job" (p. 11). Additionally, Kimeldorf has developed many activities designed to assist people in the exploration of leisure skills and talents, including the "Work-Leisure Research Project" and the Leisure Activities Awareness Survey."

The Need for Work-Leisure Interest Inventories

Seligman (1980) suggests that "interest inventories are probably the most helpful sort of instrument to use in career counseling" (p. 100). She adds that they are the least threatening, have the most relevance for career planning, and are easily understood and accepted by most clients. Campbell and Hansen (1981) add that interest inventories provide people with greater self-understanding that will lead to better decisions, provide
counselors with comparable information about each individual, and strategies for helping each individual being counseled. Anastasi (1982) notes that recently revised or developed interest inventories reflect changes occurring in the field of career counseling including: an increasing emphasis on self-exploration, an emphasis on the expansion of available career options, and utilization of items that reflect sex-fairness.

Loesch and Wheeler (1982) contend that instruments intended to assess leisure interests are by far the most common type cited in the professional leisure counseling literature. The three main reasons they list for this predominance are: interest inventories are used extensively in vocational counseling and it is logical to parallel the instruments used in vocational counseling; professionals often erroneously assume that the face validities of leisure interest assessment instruments are sufficient to merit their use; and an "interest" in an activity is assumed to imply a "motivation" to participate in the activity.

Despite the utility of career and leisure interest inventories, few inventories have been developed which measure work and leisure interests. In the development of the Life Interest Inventory, Frisbie (1982) reviewed the literature concerning leisure and career interest inventories and found that with the exception of the Guilford-Shniederman-Zimmerman Interest Survey (G-S-Z) (Guilford, Shniederman, Zimmerman, 1948), all career interest inventories were designed with only work in mind. In addition, he found that "all available leisure inventories, by design, exclude reference to work, therefore, they are not the inventory of choice for the initial career counseling" (p. 49).

Despite the fact that no existing leisure interest inventories can be used to identify work interests, a few career interest inventories have been found by some counselors to be of some use in leisure counseling. Super (1940), in his study of avocations, and Cairo (1979) used the Strong Vocational Interest Blank (SVIB) to identify leisure interests.
Similarly, Mitchell (1979) used the Strong-Campbell Interest Inventory to identify leisure interests.

Holland (1973) has claimed that his typology of work interests was applicable to leisure counseling even though it was clearly designed to measure work interests. Taylor, Kelso, Cox, Alloway, and Matthews (1979) studied the correlation between items on the Leisure Checklist (LC) and the Vocational Preference Inventory (VPI) (Holland, 1959) for over 900 high school students. Their results indicated a consistent but weak correlation between students' use of leisure time and (1) school subjects of interest to them, (2) preferences for a wide range of occupations, and (3) their expressed vocational preferences.

Based on his findings, Frisbie (1982) concluded that "an instrument is needed to assist in initiating the counseling process that is psychometrically sound, based on a solid rationale, up-to-date, and that treats leisure as being an important factor" (p. 52). Additionally, if career counselors accept McDaniels' (1984) proposal of "Career equals Work plus Leisure" (C = W + L) an interest inventory is needed that can be used to counsel for work or leisure or in a combined career counseling approach.

**Traditional Systems for Classifying Interests**

As stated earlier, many systems for the classification of occupations have been developed, but are not appropriate for the classification of leisure interests. Systems such as the Occupational Aptitude Patterns (OAP) Map (Gottfredson, 1986), ACT World-of-Work Map (ACT, 1985), the Dictionary of Occupational Titles (U.S. Department of Labor, 1977), and the Guide for Occupational Exploration (U.S. Employment Service, 1979) make no attempt to classify the world-of-leisure.
Some classification systems appear adequate for the classification of leisure, yet were designed primarily for classifying occupations. Holland (1973) proposed an occupational classification system based on the study of personality types in which he contended that each individual resembles one of six basic personality types -- Realistic, Investigative, Artistic, Social, Enterprising, or Conventional (See Figure 1). Similarly, Roe (1972) proposed a circular theoretical structure consisting of Technology, Science, Outdoor, Arts and Entertainment, Service, General Culture, Business, and Organization (See Figure 2).

However, problems have been identified in using these systems. Gati (1979), for instance, made an argument against Holland's (1973, p.23) figure displaying the hexagonal model which implies that all distances between adjacent fields are approximately equal. She cites research that contradicts this model by showing that the correlations between certain fields are higher than others (i.e., Artistic and Enterprising has a higher correlation than Artistic and Investigative). A similar case was also made for Roe's model (c.f., Lunneborg & Lunneborg, 1975).

Prediger (1981) has suggested that work tasks identified as data, ideas, people, and things form the poles of two foundational dimensions of interests and work. He proposed a model based on two bipolar dimensions of Data/Ideas and People/Things which is compatible with the basic types of occupations and interests proposed by Roe (1972) and Holland (1973) in their vocational theories (See Figure 3). It was Prediger's model that was used as the theoretical structure for the Life Interests Inventory developed by Frisbie (1982).

The notion of a circular arrangement of vocational interest fields has been generally accepted and has been thoroughly researched (Cole, Whitney, & Holland, 1971; Holland, 1973; Meir, 1973; Meir & Barack, 1974). These studies have found that fields of occupations can be represented satisfactorily in two-dimensional models. However,
Figure 1. Holland's Hexagonal Occupational Classification
Figure 2. Roe's Classification of Occupations
Figure 3. Prediger's Model of Interests and Work
several research studies (Gati, 1979; Lunneborg & Lunneborg, 1977; Siess & Rogers, 1974) have raised doubts about the adequacy of these models and have pointed to difficulties in employing a circular model in career counseling.

To develop a classification system that is more than the traditional two-dimensional models available to structure interests and occupations, Gati (1979) proposed a hierarchical model for structuring vocational interests which is based on the assumption that occupations can be characterized as collections of attributes or features. The model is represented by a hierarchical tree structure which provides a unified conceptual framework which stresses the perceived similarities and differences between occupations. While this model presents a break from the traditional "circular" models of career development, it is also designed strictly for occupations. Since the CEI will attempt to measure developmental work and leisure interests throughout the life span, no existing classification system will be used.

Increase in Life Span Approaches to Career Development

Career development is often viewed as a process which encompasses an individual's total life span and all roles of the life space (Seligman, 1980; Super, 1984). Seligman (1980) suggests that the terms "career choice" and "occupational choice" have in recent years been replaced by the term "career development" as counselors begin to realize that work and leisure decisions are not one-time choices, but rather lifelong, developmental processes. "It extends from a child's early realization that its parents have different roles and responsibilities through the retiree's plans for the use of increased leisure time" (p. 1). Vondracek et al. (1986) suggest that there is a growing interest to more thoroughly understand how career development proceeds as part of human development throughout the life span.
Super (1981) contends that matching approaches are an insufficient basis for career guidance. Sonnenfeld and Kotter (1982), in reviewing the current theories of career development, had the following criticisms about the major approaches: occupational sociologists have neglected to account for important changes over time in the social status of occupations; trait/type career theories tend to utilize "unrealistically simple and static" conceptualizations of the world-of-work; career stage theories do not have enough empirical studies, have ignored nonwork behaviors, and have used longitudinal time frames that are too short. They add that career stage theories, however, have not fully realized its potential.

Early research on career development yielded very simplistic models. Markham (1983) has called for more complex models of career development. He suggested that more complex models do not exist because simpler models lend themselves to easier research designs and approaches to measurement. Additionally, Super (1981) contended that life span and life space studies indicated that occupational choice does not happen once in a lifetime like the matching theories suggest. Rather, these studies suggested that people and situations develop and that a career decision consists of a series of mini-decisions which add up to a series of occupational choices.

There are many comprehensive models of career development which account for the life span and life space of the individual (Seligman, 1980; Sonnenfeld & Kotter, 1982; Super, 1980; Vondracek & Lerner, 1982; Vondracek, Lerner, & Schulenberg, 1983). Sonnenfeld and Kotter (1982) have developed a model of career development which accounts for the complex interrelationships of the entire life span and the life space. This model emphasizes both the individual/personal space and the work/nonwork contexts within which the individual functions. Similarly, Lerner (1982, 1984) has proposed a model of career development in which the person is an agent of his or her own career
development. In this model, the progression of a career must be understood as it both influences and is influenced by work, leisure, family, social development, friends, etc.

Super's (1980) "Life-Span, Life-Space Approach to Career Development" is one of the most comprehensive models of career development which seeks "to bring life-stage and role theory together to convey a comprehensive picture of multiple-role careers, together with their determinants and interactions" (Super, 1984, pp. 199-200). This model is also an attempt to initiate research efforts leading to theories that are more comprehensive than the segmental theories of career development which currently exist. Super (1981) stated that:

Theorist still tend to focus, perhaps legitimately in view of the size of their problem, on segmental theories. Each is thus generally considered to neglect other aspects of theory, other aspects of career development, and career behavior. Those who do seek to encompass more suffer from the appearance of superficiality. But some day global theories of career development will be made up of refined, validated, and well assembled segments, cemented together by some synthesizing theory to constitute a whole that will be more powerful than the sum of its parts (p. 39).

Review of the Developmental Approaches

Vacc and Loesch (1987) contend that developmental theorists view occupational choice as a process rather than an act, thus "career development may be viewed as an evolutionary process which is flexible, and in which individuals adapt their occupational choices to changing conditions in their lives" (p. 132). Herr and Cramer (1988) add that developmental approaches to career development are different from other approaches because:

they are typically more inclusive, more concerned with longitudinal expressions of career behavior, and more inclined to highlight the importance of the self-concept. They tend to be process-oriented in their conceptions of how career behavior develops and changes over time (p. 135).
Ginzberg, Ginsburg, Axelrad, and Herma (1951) were among the first to speculate about an individual's career as a developmental process which culminates in an occupational choice by the individual in his/her early twenties. They believed that "occupational choice is a developmental process: it is not a single decision, but a series of decisions made over a period of years. Each step in the process has a meaningful relation to those which precede and follow it" (p. 185).

Ginzberg (1984) provides this summary of "The Basic Elements of the Theory" as proposed by Ginzberg and Associates in 1951:

* The outstanding conclusion from our findings is that occupational choice is a developmental process; it is not a simple decision but a series of decisions made over a period of years. Each step in the process has a meaningful relation to those which precede and follow it.

* The process is largely irreversible. This is the result of the fact that each decision made during the process is dependent on the chronological age and development of the individual. Time cannot be relived; basic education and other exposures can be experienced only once.

* The process ends in a compromise. A series of factors, both internal and external, affect his decision. He must renounce to some degree the satisfactions which he might derive if he based his choice exclusively on a strong interest, a marked capacity, or a realistic opportunity. He must find balance among the major elements. Hence the element of compromise in every occupational choice.

* The basic elements in our theory of occupational choice, then, are three: it is a process, the process is largely irreversible; compromise is an essential aspect of every choice (p. 176).

Ginzberg and his associates have proposed that the process of career development is divided into a set of phases. The first phase, "Fantasy," lasts from birth to approximately age 11. During this phase, individuals have idealistic and often unrealistic conceptualization of the various jobs they might like to engage in. The second phase, "Tentative," lasts from approximately ages 11 to 17. Individuals gather information about
occupations and make tentative occupational decisions during this phase. The "Tentative" phase contains the subperiods of "Interest, Capacity, Value, and Transition." The last phase, "Realistic," lasts from approximately ages 17 to 21. In this phase individuals engage in initial work activities and make "final" decisions about specific occupations. The "Realistic" phase contains the subperiods of "Exploration" and "Crystallization."

Ginzberg (1972, 1984) later reformulated the factors involved in his theory concerning the lifelong, developmental choice process to include original choice, the feedback between the original choice and later work experience, and economic and family contributions. Specifically, Ginzberg (1972) suggested that the process of occupational choice-making does not end at young adulthood; occupational choice remains open as long as the individual makes and expects to make career decisions; early decisions will help to shape later career, but changes in work and life also influence career; and decisions about work and career are attempts to make a fit between work opportunities and personal priority needs and desires.

Super (1953) believed that Ginzberg's position was deficient in several respects: it did not account for previous pertinent research; it failed to describe "choice" in an operationally acceptable way; it made a sharp distinction between choice and adjustment; and it failed to delineate the process of compromise. In response to these limitations, Super (1953) formulated his own theory based on ten propositions about career development. Later, these were expanded to twelve (Super & Bachrach, 1957) and restated (Super, 1984):

1. People differ in their abilities, interests, and personalities.

2. People are qualified, by virtue of these characteristics, each for a number of occupations.

3. Each of these occupations requires a characteristic pattern of abilities, interests, and personality traits, with tolerances wide enough to allow both some variety of occupations for each individual and some variety of individuals in each occupation.
4. Vocational preferences and competencies, the situations in which people live and work, and hence their self-concepts, change with time and experience, although self-concepts are generally fairly stable from late adolescence until late maturity, making choice and adjustment a continuous process.

5. This process of change may be summed up in a series of life stages (or "maxicycle") characterized as those of growth, exploration, establishment, maintenance, and decline, and these stages may in turn be subdivided into (a) the fantasy, tentative, and realistic phases of the exploration stage and (b) the trial and stable phases of the establishment stage. A smaller cycle takes place in transitions from one stage to the next or each time an unstable or multi-trial career is unstabilized, which involves new growth, reexploration, and reestablishment.

6. The nature of the career pattern -- that is, the occupational level attained and the sequence, frequency, and duration of trial and stable jobs-- is determined by the individual's parental socioeconomic level, mental ability, and personality characteristics, and by the opportunities to which he or she is exposed.

7. Development through the life stages can be guided, partly by facilitating the maturing of abilities and interests and partly by aiding in reality testing and in the development of self-concepts.

8. The process of career development is essentially that of developing and implementing self-concepts; it is a synthesizing and compromising process in which the self-concept is a product of the interaction of inherited aptitudes, physical make-up, opportunity to play various roles, and evaluations of the extent to which the results of role playing meet with the approval of superiors and fellows.

9. The process of synthesis of or compromise between individual and social factors, between self-concept and reality, is one of role playing, whether the role is played in fantasy, in the counseling interview, or in real-life activities such as classes, clubs, part-time work, and entry jobs.

10. Work satisfactions and life satisfactions depend on the extent to which the individual finds adequate outlets for abilities, interests, personality traits, and values; they depend on establishment in a type of work, work situation, and a way of life in which one can play the kind of role that growth and exploratory experiences have led one to consider congenial and appropriate.

11. The degree of satisfaction people attain from work is proportionate to the degree to which they have been able to implement self-concepts.

12. Work and occupation provide a focus for personality organization for most men and many women, although for some persons this focus is peripheral, incidental, or even nonexistent, and other foci, such as leisure activities and homemaking, are central (pp. 194-196).
Super (1976) proposed the Life-Career Rainbow in an attempt to describe the variety of aspects of a career throughout the life span (See Figure 4). Super (1957, 1977), in describing the life span, proposed five major life stages and their approximate ages. The first stage, Growth, lasts from birth to approximately age 14. It includes the substages of Fantasy (ages 4-10), Interest (ages 11-12), and Capacity (ages 13-14). The second stage, Exploration, covers approximately ages 14-24 and includes the substage Tentative (ages 15-17). The third stage, Establishment, covers approximately ages 24-44 and includes the substages Stabilization (ages 25-30) and Advancement (ages 30-44). Maintenance, the fourth stage, lasts from approximately ages 44-64. The final stage, Decline or Disengagement, lasts from ages 64 and over and includes the substages Deceleration (ages 64-70) and Retirement (age 70-on).

The life space is "the constellation of positions occupied and the roles played by a person" (Super, 1984). Super (1980) suggests that nine roles can be used to describe the life space of most people: (1) Child (including son and daughter), (2) Student, (3) Leisurie, (4) Citizen, (5) Worker (including unemployed worker and nonworker as ways of playing the role), (6) Spouse, (7) Homemaker, (8) Parent, and (9) Pensioner. The principal theaters in which these roles are played are also used to describe the life space of most people: (1) the Home, (2) the Community, (3) the School (including college and university), and (4) the Workplace (p. 284).

Super's approach has been labeled as a developmental self-concept theory (Osipow, 1968, p. 117). Super (1984) believes that his conception of a career model, as contrasted with an occupational model, is intended "to denote a longitudinal, developmental approach rather than a single-choice, matching approach" (p. 198). He also gives prominence to an individual's mastery of complex, developmental tasks at different stages of career development and to the roles which the individual plays throughout life.
Figure 4: Super's Career-Life Rainbow
Tiedeman and Tiedeman (1984), in Career Choice and Development (Brown, Brooks, & Associates, 1984), provided an overview and summary of the original work of Tiedeman and O'Hara in 1963. In their overview, they said they felt that career theorists had developed theories of career choice, but "have often neglected the essence of the individual's life processes, particularly those of growth, choice, willingness and capacity to adapt to change, and continued self-exploration and self-renewal" (p. 281).

According to Tiedeman and Tiedeman (1984), Super's (1953) self-concept model was not a complete model of personal development because it focused on external factors rather than the internal characteristics of the individual. Therefore, they "set out to link the person to career through the concepts of personality and individual responsibility" (p. 285). Super (1969) later stated:

Some men continue to change occupations throughout life, while others have stable periods followed by new periods of trial, which in turn lead to stabilization for a second or third time. Thus, there are stable (direct entry into the lifework), conventional (trial leading to stability), unstable, and multiple-trial careers. The life stage processes continue more or less throughout life, repeating themselves in the sequence: INITIAL-TRIAL-STABLE-DECLINE. Tiedeman's (1958) use of this concept in theorizing about position choice, each decision concerning the occupancy of a position involving exploration, establishment, and maintenance, is a useful refinement (p.4).

The original work of Tiedeman and O'Hara (1963), based on Erikson's (1959) model of psychosocial crises at seven developmental stages, culminated in a developmental approach which focuses on the formulation of a choice (anticipation) and what happens when an individual attempts to implement the choice (induction). Tiedeman (1961) proposed the following model of decision-making:
I. The period of Anticipation
   A. Exploration (random and acquisitive activity)
   B. Crystallization (emerging of patterns in the form of alternatives and their consequences leading to clarification and comment)
   C. Choice (organizing in preparation for implementation)
   D. Specification (clarification)

II. The period of implementation and adjustment
   A. Induction (person largely responsible)
   B. Reformation (person largely assertive)
   C. Integration (satisfaction)

Tiedeman (1961) proposes that this model considers the formulation of a choice (anticipation) and what happens when a person attempts to implement that choice (induction), and that different stages are represented by different psychological states. Tiedeman has continued to develop his theories emphasizing the power of the individual to create a career (Dudley & Tiedeman, 1977; Peatling & Tiedeman, 1977; Tiedeman & Miller-Tiedeman, 1977). More recently, his theory emphasizes current conceptions of ego development (Tiedeman & Miller-Tiedeman, 1984).

Many others have contributed to the understanding of how one's career develops (Gould, 1978; Lasker, Moore, & Simpson, 1980; Levinson, Darrow, Klein, Levinson, & McKee, 1978; Loewinger, 1976; McDaniel, 1982; Perry, 1968; Schlossberg, 1978). Some of the other developmental models of career behavior include Knefelkamp and Slepiza's (1976) model that combines a developmental and cognitive approach to the development of college students; Gribbons and Lohnes (1968, 1982) Career Development Study which identified eight variables which validated many concepts proposed by Super,
and Gottfredson's (1981) Model of Occupational Aspirations in which she integrated a social systems perspective with the more psychological approaches.

Counselors who view career development as a process rather than a one-time act are also increasingly integrating the aspect of leisure in their models of career development (c.f., Lerner, 1982; McDaniels, 1982, 1989; Seligman, 1980; Sonnenfeld & Kotter, 1982; Super, 1980; Vondracek & Lerner, 1982; Vondracek et al., 1983). McDaniels (1982) made a proposal for leisure and life planning by describing how the two blend together throughout the life span. The model contains the following six stages: Childhood (Birth to 12 years): The Awareness Stage involves helping the child become aware of the vast array of available leisure activities; Adolescence (12 to 18 years): The Exploration Stage involves helping the individual explore a variety of leisure activities while they are in this period of rapid change; Young Adulthood (18 to 24 years): The Preparation Stage is a time in which individuals have greater freedom to participate in and further explore leisure activities; Adulthood (24 to 40 years): The Implementation Stage is a time when the jobs people engage in may be instrumental in determining time available for leisure and leisure pursuits; Midlife (40 to 60 years): The Involvement and Reassessment Stage is a time when most people are at the peak of development in many continuing leisure interests; and Retirement (60 + years): The Reawareness and Reexploration Stage involves total identification with and fulfillment of the desire for leisure.

Need to Measure Developmental Interests

Vondracek et al. (1986) suggested that "career decisions require a thorough assessment of the individual's developmental status and of the context within which the development is occurring", and add that three time perspectives comprise essential features of the individual's developmental status: "the past, the present, and the future" (p. 164). In
describing aspects of the developmental assessment process, they felt that regarding the past and present, particular attention is given to ascertaining the client's vocational interests, aptitudes, and values. In addition, there is ample evidence (Crites, 1974; Gribbons & Lohnes, 1968; Jordaan & Hyde, 1979; Super, 1955, 1977, 1983) regarding the usefulness of the concept of career maturity and the importance of client readiness to make career decisions.

Focus on the future is relatively unique to developmental perspectives (e.g., Crites, 1969; Ginzberg et al., 1951; Katz, 1963). Although the goals and aspirations for the future represent important career development data, Vondracek et al. (1986) felt that the future tends to be neglected by most other approaches to career development. Super (1954) suggested that the assumption underlying his developmental approach is based on understanding what an individual will do in the future by examining what he or she did in the past. According to Super, "one way to understand what he or she did in the past is to analyze the sequence of events and the development of characteristics in order to ascertain the recurring themes and underlying trends" (p. 13). According to Super (1984), although it is important to maintain three time perspectives, "if I were forced to declare a preference in orientation to time, it would be for the future--even after fifty years of work experience" (p. 192). Similarly, Crites (1969) has stated:

In making a vocational choice, an individual is, in effect, making a prediction of his (her) future vocational adjustment. When he (she) expresses his (her) intention of entering a particular occupation, he (she) is estimating that, of the occupations which are known to him (her), this is the one he (she) thinks will bring him (her) the greatest happiness, wealth, recognition, or whatever it is he (she) is seeking (p. 325).

Recent research (c.f., Berzonsky, 1982; Schulenberg, 1984; Schulenberg, Vondracek, & Nesselroade, 1985) underscores the need for longitudinal, multidimensional,
developmental/contextual assessment procedures and instruments. According to Healy (1982), career development is recognized as a process that can be positively influenced. In his words, "it is likely that future career counseling will incorporate strategies to expand and create interests, rather than strategies that only label them" (p. 83). Vondracek et al. (1986) add that "to base prediction and guidance practices solely on a one-time assessment of vocationally relevant traits followed by a matching of test scores to actuarial data is to assume that both individuals and contexts are static, an assumption inconsistent with a developmental approach" (p. 167).

Vondracek et al. (1986) also caution vocational guidance counselors and career counselors against the urge to oversimplify the assessment process by assuming that a one-time measurement provides an adequate basis for decision making. "This suggests a repeated measurements approach may often be the assessment approach of choice in vocational guidance and career development intervention" (p. 167). In an attempt to get repeated-measures data and simplify the assessment process, the CEI measures an individual's developmental work and leisure interests from the past, in the present, as well as those anticipated in the future.

**Rationale for a Developmental Interest Inventory**

Many studies have been conducted in an attempt to determine the permanence of interests over time (Campbell, 1965; King, 1958; Kuder, 1964; Strong, 1931, 1943, 1955; Taylor, 1942; Taylor & Carter, 1942; Tutton, 1955; White, 1958; Zytowski, 1976). However, Strong (1931, 1943, 1955) and Campbell (1965) have completed the most thorough studies of interest permanence throughout the life span.

The first research to determine the stability of interests was done by Strong (1931). He found that while interest patterns or basic interests change somewhat while a person is
maturing, they are quite stable in adults and change little between the ages of twenty-five and fifty-five. He adds that if "vocational interest" is defined as "the sum total of all interests that bear in any way upon an occupational career," then we "find surprising stability, certainly among adults, and, as far as we have been able to judge, also among men of college age and presumably among still younger people" (p. 4).

Then in 1943, Strong looked at the correlation between occupational interest scores and reported test-retest reliabilities of .75 over a ten year interval with the Strong Vocational Interest Blank. Similarly, Campbell (1965), in the book The Results of Counseling: Twenty-Five Years Later, reported a test-retest correlation of .64 over a 22 year period with the Strong Vocational Interest Blank.

Strong (1943) gave this summary of his study:

The primary conclusion regarding the interests of men between 25 and 55 years of age is that they change very little. When these slight differences over thirty years are contrasted with the differences to be found among occupational groups, or between, men and women, or between unskilled and professional men, it must be realized that age, and the experience that goes with age, change an adult man’s interests very little. At 25 years of age he is largely what he is going to be and even at 20 years of age he has acquired pretty much the interests he will have throughout life (p. 313).

More recently Zytowski (1976) completed a comprehensive follow-up study of the predictive validity of subjects who were among those used in early studies or in the actual development of the Kuder Occupational Interest Survey. He found that fifteen to nineteen years later "fifty-one percent of the subjects were employed in an occupation that would have been suggested to them had their inventory been interpreted to them." Strong (1955) in his follow-up study entitled Vocational Interests 18 Years After College, obtained a comparable figure of forty-five percent. Darley and Hagenah (1955) suggested that these early studies indicate that in the great majority of cases one can expect strong or negative
interests to remain the same in high school, in college, and throughout the rest of the life span.

Kuder (1977) contends that since stability of interests increases with age, it is important to keep open for as long as possible a broad range of available career options. "In practice this means that although possibilities for the future should be given intensive study and exploration, tentative plans should be made for the more promising. Further, it is desirable not to make irrevocable decisions sooner than necessary" (p. 2).

Summary

Career counselors are increasingly becoming aware of the need to provide counseling for leisure, as well as work. Leisure provides many psychological benefits and when combined with work can enhance one's career development. Although the work/leisure relationship is very complex, leisure can be integrated with work to produce a variety of career opportunities. The concept of career utilized in this study has been one in which work and leisure are equal contributors to the concept of career or Career equals Work plus Leisure (C = W + L). Assessment and classification of both work and leisure interests has rarely been done. There has also been an increase in life span approaches to career development, although there remains a need for additional assessment instruments that are developmental in nature. It was concluded that two major limitations exist: (1) the need for an inventory that assesses both work and leisure interests, and (2) the need for an inventory to measure developmental, sustained interests provide the basis and structure for the interest inventory developed in this study.
CHAPTER 3

INSTRUMENT DEVELOPMENT AND CONSTRUCTION

This chapter reviews the procedures utilized in the development and construction of the Career Exploration Inventory, including the selection of the inventory format, item selection and category verification, development of the basic interest categories, methods used to reduce sex bias, and the theoretical structure upon which the instrument is based. Additionally, a review of the pilot studies and procedures used in field testing the CEI are provided. Finally, methods for determining validity and reliability of the CEI are summarized.

Development of the Career Exploration Inventory

The development of the Career Exploration Inventory (Appendix A) was a developmental process (Table 1). This process began with an examination of the needs in career development, a review of the career development literature, and a review of the existing work and leisure interest inventories. The review revealed two major needs in the career development literature: (1) the need for an interest inventory which could be used in career counseling, leisure counseling, or in a holistic approach; and (2) the need for an interest inventory that measures developmental, continuing interests over the life span.

Career counselors are increasingly viewing the concept of career as the combination and interaction of work and leisure throughout the life span in which leisure is as equally important as work. For the most part, vocational interest inventories have neglected the leisure component, while leisure inventories have neglected the vocational component. The Life Interest Inventory (Frisbie, 1982) was the only inventory in the literature which
assessed both work and leisure interests. However, the literature review revealed no instrument which measured developmental, continuing interests over the life span. Since career counselors are increasingly recognizing career as a developmental process which takes place over the life span, a major need identified from this search was for an interest inventory that measures continuing, developmental work and leisure interests from the past, in the present, and which are anticipated in the future.

The next phase in the development of the inventory consisted of beginning the actual development of the interest inventory. Important questions which needed to be addressed concerned the inventory's format, content, scoring and norming procedures. In this phase, twelve items which were most representative of the fields of work and leisure were selected for pre-determined interest categories. Independent judges verified each of the items for content, form, and placement into interest categories. Then, the items were given to a random population (N=30) and subjected to a coefficient alpha correlational analysis.

The third phase in the development of the inventory consisted of a series of three pilot studies to gather qualitative data about the inventory's format, clarity, and utility. Subjects (N=15) participating in the pilot studies were randomly selected from Virginia Polytechnic Institute and State University including graduate students in the Counselor Education Department, faculty, and staff. Subjects were asked to complete the CEI and complete the Client Observation Sheet (Appendix B). Additionally, the researcher interviewed each of the subjects to obtain feedback and suggestions. This information was used in the development of the final form of the instrument.

The final phase in the development of the inventory consisted of field testing the instrument to gather quantitative data about the inventory's validity and reliability. The final form of the CEI was given to 104 unemployed and underemployed adults participating in the Job Training Partnership Act program sponsored by the Private Industry Council of
Westmoreland/Fayette, Inc. in Southwestern Pennsylvania and 106 employees who had
attended program activities offered by the Employee Career Development Program at
Virginia Polytechnic Institute and State University. A sample of the original group (N=55)
were re-tested approximately three months after the original field test to determine the
stability of the scales.

Construction of the Career Exploration Inventory

According to Seligman (1980), two methods have been widely used to develop interest
inventories. One method, such as that used for the development of the SVIB/SCII,
compares the interests of the test-taker with the interests of individuals engaged in a variety
of occupations. This method is based on the findings that people in an occupational group
have similar interests and are drawn to each other and to the occupation because of these
interests (Hogan, Hall, & Blank, 1971). The second method, such as that used for the
development of the Kuder Occupational Interest Survey, is based on activity-similarity
rather than people-similarity and assesses the relationship between an individual's preferred
or disliked activities and the activities involved in the performance of occupations.

Cirino-Gerena (1970), in reviewing the literature for developing an inventory, found
that interest inventories were developed many different ways. Among the methodological
decisions the test constructor must make include the types of items to utilize, the item
format, the type of response format to use, the use of occupational or homogeneous interest
scales, scoring procedures, norming procedures, and controlling for sex bias. Each of
these sections will be examined separately.
Table 1 Overview of the Research Process

Phase 1 -- September, 1988 - February, 1989
- Review of the career development literature
- Review of existing work and leisure inventories

Phase 2 -- February, 1989 - March, 1989
- Preliminary decisions made about the inventory's format, content, and scoring
- Selection of a general pool of 700 items
- Use of 5 independent judges to verify content, form, and placement of items
- Internal consistencies determined using a random sample (N=30)
- Construction of the 15 final interest categories

Phase 3 -- April, 1989
- Preliminary draft of the CEI
- Conducted series of three pilot studies with graduate students, staff, and faculty (N=15)
- Interviews with each subject following completion of Client Observation Sheet
- Completion of the final form of the CEI

Phase 4 -- May, 1989 - August, 1989
- Field testing of the CEI (N=210)
- Interviews with various subjects who completed the CEI (N=45)
- Test-retest reliability determined (N=55)

Phase 5 -- August, 1989 - January, 1990
- Writing of the results
Inventory Format. The same format will be utilized for all the items chosen for the Career Exploration Inventory. Some test constructors have argued that the use of several different item types adds interest to a test because of its variety (Campbell & Hansen, 1981). However, Thorndike (1971) contends that well-constructed items in one form, usually present no problem of maintaining interest for the test-taker. On the whole, arguments for use of as few item types as possible, and preferably only one item type, probably outweigh arguments for a variety of items.

Some test developers prefer to use a forced choice item response format (Hubert, 1969; Kuder, 1976; Lunneborg, 1981), while others prefer a free response item format (D’Costa, Winefordner, Odgers, & Koons, 1970; Frisbie, 1982; Holland, 1978). However, both of these formats are based on structural theories of career development that attempt to measure the counselee’s interests at the time they take the inventory. These formats make no formal, structured effort to inventory past interests and interests anticipated in the future.

Since the Career Exploration Inventory will be developmental in nature and is based on Super’s (1980) Life Span, Life Space theory of career development, the response format will be a free response format in the form of P for past interest, C for current interest, and F for interest anticipated in the future. This format allows the counselee to identify sustained interest, not simply interest at that particular point in time. The counselee will have the option of circling one, two, or all three choices for each item. According to Anastasi (1982), the opportunity to respond in terms of dislike for an activity allows for examination and discussion of rejected items. Therefore, if the counselee did not like the item in the past, does not like it now, and does not anticipate liking it in the future, no items need be circled.
Item Selection and Category Verification. A pool of over 700 items was generated from a review of existing career and leisure interest inventories. From this item pool, the 204 items that were chosen for the preliminary form of the CEI included those which referred to both work and leisure activities. As suggested earlier, items which referred exclusively to work (e.g., "Work in a garage" or "Work with animals") or leisure (e.g., "Volunteer in a hospital" or "Knit in your spare time") were eliminated or reworded. Specific categories of items that were selected for the preliminary form of the CEI included: (1) activity items -- items related to the performance of specific activities such as "Planting a garden"; and (2) education items -- items related to learning, reading, and/or studying such as "Taking a journalism course."

Qualified judges were utilized to verify the content, form, and placement of the items selected, confirm specific homogeneous interest categories, and eliminate redundant interest categories. Recent research suggests that the use of qualified judges can be reliable and valid for scale construction (Burisch, 1978; Holden & Jackson, 1979; Jackson, 1975). Therefore, five independent judges with expertise in the fields of career and leisure counseling were asked to assist in the development of reliable and valid interest categories.

All of the judges had obtained or were in the process of obtaining doctoral degrees, and were currently working or had previously worked in career and/or leisure counseling positions. Judge one was a counseling psychologist working in a university counseling center. Judge two was a career counselor working in a university counseling center. Judge three was a training a development specialist who works in an Employee Career Development Program. Judge four was a doctoral candidate in Counselor Education and worked as a counselor in a Bible college. Judge five was an adjunct professor who also worked with the state career information delivery system.
An appointment was made with each of the five judges in order to describe the study and provide general background information about the inventory. Each judge was given a list of 204 interest items which were arbitrarily clustered into 17 groups. Judges were to verify each item's form and content; verify the placement of each item by moving items to appropriate clusters; eliminate or combine redundant clusters; and name each cluster with a word or two describing the category that the items represent. This procedure and the procedure of putting the interest items on index cards and having the judges sort them into appropriate clusters were both pilot tested on two different people and it was felt that the procedure chosen was easier, more effective, and more reliable.

Specific instructions were typed and included with the 204 interest items. The instructions were as follows:

In an attempt to develop an interest inventory that measures work and leisure interest, the following 204 items have been arbitrarily grouped into 17 clusters with 12 items in each of the clusters. The clusters and items were deliberately chosen because of their applicability to both work and leisure activities. The specific instructions are to: (1) verify placement of each item and feel free to move items from one cluster to another by writing the number of the new cluster to the left of the item; (2) verify the content and form of each item and feel free to rewrite or reword any item; (3) eliminate or combine any clusters that are redundant or unnecessary. If you eliminate a cluster, place an X over the items in that cluster, and if you combine two clusters, write combined with #____; (4) name each cluster with one or two words that best describes the theme of the items within that cluster; (5) and list any additional items you feel are appropriate for the 17 clusters.

Judges were allowed to take the items with them to sort. The instructions allotted space for the judges to suggest items, move items to other categories, and make comments. Definite patterns emerged from the judges comments and suggestions. Three of the five judges recommended combining the "Social Service" and Social Research" categories into one category, and that the "Sports" and "Travel" categories be combined to form a
"Physical Performing" category. A few new items were suggested and some items were reworded. The category labels that were named most often from the judges were used in the final form of the inventory (See Table 3).

The 204 items were then given to a pilot population (N=30) in Virginia consisting of adults males and females of various ages. The items were then subjected to an internal consistency analysis using the Statview 512+ (1986) statistical package. Most judges were in agreement about the form, content, and categorization of the items. However, Items were changed or categorized differently with the recommendation of 3 of the 5 judges. This combination of qualitative validation (use of "expert" judges) and quantitative validation (internal consistency analysis) added to the content validity of the CEI.

**Basic Interest Categories.** During the last few decades, career counselors have noted that one of the important determiners of vocational choice is the individual's perceptions of the various aspects of an occupation within a frame of reference. Knapp, Knapp, and Buttafuoco (1978) say that "the classification of occupations into families or clusters of psychologically similar occupations is eminently useful for career development and predictive purposes" (p. 14).

Interest scales are developed using several item selection techniques that result in two basic types of scales (Zytowski, 1973). Normative scales compare interests of an individual with those of persons in a particular occupation, such as the scales developed by E.K. Strong in 1927. Homogeneous scales, on the other hand, measure general, global, or basic areas of interest. These scales are composed of items which measure a specific interest, such as those developed by G.F. Kuder in 1963.

Many test developers (Cirino-Gerena, 1970; Harmon, 1974; Kuder, 1960) believe that it is best to develop homogeneous scales from an unselected pool of items before
developing occupational scales. Cirino-Gerena (1970) noted several advantages in developing homogeneous scales, including facts such as they are more psychologically meaningful because the counselee can identify psychological traits, the interest domain can be represented with relatively few interest scales, they focus on general interest areas rather than specific occupations, they are not related to any specific age group, they help provide insight into the role of the items chosen and the dimensions of vocational interest, and they can be quickly scored. These advantages combined with the fact that the Career Exploration Inventory will measure leisure interests, as well as work interests, builds a strong case for the use of homogeneous scales.

Additionally, Frisbie (1982) adds that "occupational (or empirical) scales, aside from being very difficult and expensive to establish, are not really the type of scales to initiate awareness of basic interests in a beginning counseling situation" (p. 54). Since the primary purpose of this study is to increase a client's awareness of work and leisure interests, homogeneous scales were developed. As stated earlier, five independent judges were asked to name each cluster of items based on similarities shared by the test items in the cluster. The test constructor selected the name for each interest category based on suggestions from the judges. Chapter 4 will provide additional information concerning the label names recommended by the judges. The fifteen interest categories are described in greater detail in the following section.

**Definitions of the Interest Categories.**

1. **MECHANICAL** -- Operating machines for mass production and using tools to build and repair things. Specific work activities might include machinist, welder, and heavy equipment operation; specific leisure activities might include fixing appliances, house construction/repair, and wood working.
2. **ANIMAL CARE** -- Raising, feeding, grooming, breeding, training, and caring for animals. Specific work activities might include game warden, veterinarian, and pet groomer; specific leisure activities might include riding horses, fishing, and visiting a zoo.

3. **PLANTS** -- Cultivating and gathering of crops and the growing and tending of plants. Specific work activities might include horticulturist, park ranger, and landscape gardener; specific leisure activities might include gardening, growing house plants, and visiting state parks.

4. **PHYSICAL SCIENCES** -- Conducting research and collecting data about the natural world. Specific work activities might include geologist, archaeologist, and physical science teacher; specific leisure activities might include astronomy, visiting science museums, and collecting rocks.

5. **LIFE SCIENCES** -- Investigating, researching, and applying the biological sciences and medicine. Specific work activities might include biologist, physician, and optometrist; specific leisure activities might include studying anatomy, health care volunteer, and emergency medical technician (EMT) training.

6. **ARTISTIC** -- Expressing one's ideas and feelings through art such as dancing and painting. Specific work activities might include commercial artist, graphic designer, and musician; specific leisure activities might include playing a musical instrument, sculpting, needlework.
7. **LITERARY ARTS** -- Expressing one's ideas and feelings through the creative use of words. Specific work activities might include technical writer, editorial assistant, and columnist; specific leisure activities might include writing short stories, reading, and writing poetry.

8. **SOCIAL SERVICE** -- Helping people with physical, vocational, spiritual, and psychological concerns. Specific work activities might include social worker, psychologist, and rehabilitation counselor; specific leisure activities might include belonging to church groups, mental health volunteer, and visiting friends and family.

9. **PHYSICAL PERFORMING** -- Using physical skills in athletics, sports, travel, and adventure. Specific work activities might include physical education teacher, sports physiologist, and health club worker; specific leisure activities might include coaching amateur sports, jogging, and swimming.

10. **PERSONAL SERVICE** -- Providing a variety of services to people, usually on a one-to-one basis. Specific work activities might include cosmetologist, chauffeur, and counter attendant; specific leisure activities might include babysitting, cake decorating, and Meals-on-Wheels volunteer.

11. **PERSUADING/INFLUENCING** -- Influencing others using publicity or powers of persuasion. Specific work activities might include real estate agent, public relations specialist, and sales clerk; specific leisure activities might include fund raising, attending political conventions, and being master-of-ceremonies.
12. **PROTECTING** -- Enforcing of laws, regulations, and policies to protect people and property. Specific work activities might include fire fighter, security guard, and corrections officer; specific leisure activities might include organizing neighborhood watch groups, fighting fires, and self-defense training.

13. **LEADING** -- Directing, supervising and/or managing others to accomplish a goal. Specific work activities might include office manager, school administrator, and program director; specific leisure activities might include school board member, directing plays/musicals, and organizing neighborhood activities and community events.

14. **CLERICAL** -- Typing, operating office machines, and other activities involving attention to details. Specific work activities might include librarian, medical records clerk, and secretary; specific leisure activities might include being secretary of a club, library aide, and genealogy.

15. **FINANCIAL DETAIL** -- Working with numbers and performing statistical analyses. Specific work activities might include accountant, systems analyst, and financial analyst; specific leisure activities might include income tax volunteer, statistician for athletic events, and predicting financial trends.

*Theoretical Structure.* Because all existing classification systems were primarily designed for matching clients with the world-of-work, the researcher felt that using an existing classification systems was inappropriate. "Developmental theories, while not rejecting the matching approaches, treat them as an insufficient basis for career guidance" (Super, 1981, p. 206). Theoretically, the CEI is based on Super's (1980) "Life span, Life Space" theory of career development and McDaniel's (1984) concept of "Career equals Work plus
Leisure" (C = W + L). Therefore, the CEI will not attempt to simply match clients and jobs by utilizing one of the existing classification systems; rather, it will assist clients in the exploration of work and leisure interests from the past, in the present, and in the future.

**Sex Bias.** Prior studies had agreed that same-sex norms are more useful than other-sex or combined-sex norms in helping clients to focus on career alternatives (Diamond, Harmon, & Zytowski, 1976). However, Anastasi (1982), suggests that "current tests are making increasing use of standard scores, which are the most satisfactory type of derived score from most points of view" (p. 78). In addition, Seligman (1980) says that scores based on opposite-sex norms seem to exaggerate differences and often leads to stereotyped results. This awareness of sex-bias in tests has initiated a move away from the use of same-sex norms to the use of raw scores and combined-sex and opposite-sex norms. Therefore, scores in each of the interest categories on the CEI will be reported in terms of raw scores ranging from 0 to 24.

Sex bias in interest inventories has received considerable attention (Harmon, 1974; Tittle & Zytowski, 1978). It has been defined, within the context of career counseling, as that condition which influences an individual to limit his/her consideration of career options solely on the basis of that person's gender (AMEG Commission Report on Sex Bias in Interest Measurement, 1973). The CEI will reduce sex bias by following the guidelines suggested in the "National Institute of Education Guidelines for Assessment of Sex Bias and Sex Fairness in Career Interest Inventories" (Diamond, 1975). According to provisions documented in Section 1 of the guidelines, the Career Exploration Inventory will:

A) be used for both males and females.

B) provide scores for both males and females. In developing the scales for the

inventory, norm groups will be sex-balanced to the best extent possible.
C) Utilize an item pool that reflects experiences and activities that are equally familiar to both females and males. Items that imply an activity that might be more appropriate for one gender or the other (e.g., Policeman, airline stewardess) will be eliminated.

D) Present occupational titles in the inventory in gender-neutral terms.

E) Eliminate the use of the generic "he" or "she" throughout the inventory.

The Office of Civil Rights (1976) later established criteria entitled "Separate sex norms usage must meet OCR regulations" to help reduce sex bias in testing and stated that those using separate sex norms should be prepared to demonstrate that the format was necessary to eliminate sex bias, that clients should receive scores for both sets of sex norms, and that identical occupational areas and occupational titles need to be indicated for each gender.

Norming Procedures. Seligman (1980) states that norms for an inventory may be national or local. She also suggests that "sample groups on which a test has been normed may be described in terms of their age, sex, education, occupation or background" (pp. 66-67). Harmon (1974) recommended that high school, college, and adult norms be developed.

For the inventory being developed in this study, adult norms will be generated from sample populations of 104 unemployed/underemployed adults participating in Jobs Training Partnership Programs offered by the Private Industry Council of Westmoreland/Fayette, Inc. and 106 adults who previously participated in seminars and workshops sponsored by the Employee Career Development Program at Virginia Tech. This adult population ranged in age from 18 to 65 and was chosen because they have a variety of work and leisure interests.
Pilot Studies

The initial instrument was field tested during the third phase of the study. The Career Exploration Inventory was developed; given to "expert" judges for verification of item form, content, and placement; and subjected to a coefficient alpha correlational analysis. A preliminary form of the CEI was then field tested. Subjects utilized for this pilot study were graduate students, faculty, and staff (N = 15) at Virginia Tech.

These pilot studies were both qualitative and quantitative in nature. The researcher was primarily concerned with observing and noting reactions concerning the inventory's format; the clarity of the directions for administration and scoring; and the usefulness of the guide to work and leisure opportunities. In addition to completing the CEI, subjects were asked to complete a Client Observation Sheet (Appendix B). This questionnaire provided subjects with an opportunity to critique the instrument and suggest needed changes. Each subject was then interviewed by the researcher before the general reliability and validity of the inventory were estimated.

In general the subjects reported that the CEI was relatively easy to take and to interpret. However, scoring the instrument appeared to be difficult for the majority of subjects. Therefore, the scoring format and instructions, as well as the profile sheet were changed to reflect the suggestions of the subjects. The subjects also reported that they had difficulty assimilating and understanding the information they had accumulated from the CEI about their work and leisure interests. Therefore, the Career Planning Guide was added to the final version of the CEI in order to aid clients in organizing and exploring their work and leisure interests from the past, in the present, and those anticipated in the future. The subjects' comments and suggestions from the pilot studies yielded a one-hundred and twenty item developmental interest inventory and career exploration guide which can be self-administered, scored, and interpreted.
Field Testing of the CEI

The final phase of the study was conducted during the Spring semester of the 1988-1989 academic year with two different populations. The first group of subjects (N = 104) consisted of unemployed and underemployed adults participating in the Jobs Training Partnership Act program offered by the Private Industry Council (PIC) of Westmoreland/Fayette, Inc. PIC is a private, non-profit organization which receives funds from the federal government to provide career counseling, job placement, and job search assistance to low-income residents of Fayette and Westmoreland counties in Southwestern Pennsylvania.

Permission to administer the CEI to the sample of unemployed and underemployed adults was obtained from the Vice-President of Client Services at the PIC. The researcher spent two days administering the CEI to clients at the Private Industry Council’s office in Uniontown, Pennsylvania and two days administering the CEI to clients at the Monesson, Pennsylvania office. The researcher was also available to provide career counseling for the subjects requesting this service. Additionally, the researcher administered the Client Observation Sheet (Appendix B) and interviewed subjects in order to gather additional data about the inventory’s effectiveness and usefulness (Appendix C). A discussion of the qualitative findings and two case studies illustrating the use of the CEI in career counseling will be presented in Chapter 4.

Past participants (N=106) of the Employee Career Development Program (ECDP) at Virginia Polytechnic Institute and State University comprised the second group of subjects. The ECDP was developed as a joint effort between the Counselor Education Program Area and the Employee Relations/Personnel Office to provide career development services in a comprehensive university setting. The ECDP offers a variety of services including career
planning workshops; career information seminars; individual career counseling; an employee career resource center which utilizes a self-paced, self-managed career planning system; and special topic workshops. The ECDP at Virginia Tech has been serving faculty and staff at the university and members of the community for the past ten years.

A list of past participants was provided by the Program Area Leader from the Department of Counselor Education and Student Personnel. A copy of the CEI and accompanying cover letter (Appendix D) was sent via Virginia Tech campus mail to each past participant. Subjects were asked to complete the inventory and return it to the researcher via campus mail. One hundred and six past participants responded with completed inventories. Seventeen copies of the CEI with accompanying cover letters were returned because these individuals were no longer employed at Virginia Tech.

Subjects

As stated earlier, the subjects used in developing norms for the Career Exploration Inventory consisted of employees of Virginia Polytechnic Institute and State University and unemployed and underemployed adults living in Southwestern Pennsylvania. The subjects from Pennsylvania were residents of Westmoreland and Fayette counties and had to be income eligible to participate in the Job Training Partnership Act program. The subjects from Virginia Tech were employees who had utilized services provided by the Employee Career Development Program. These populations were chosen to test the validity and reliability of the CEI because the participants had a wide variety of work experiences and leisure interests and did need or had needed help with career development. Thus, the researcher felt that the CEI would be a valuable instrument in helping those individuals involved in career transitions to understand how their work and leisure interests interact throughout the life span.
The 104 subjects participating in the Job Training Partnership Act program included 40 females and 64 males ranging in age from 18 to 73 who volunteered to participate in this study. The sample of 106 employees from the ECDP at Virginia Tech included 85 females and 21 males ranging in age from 23 to 62. The total sample of 210 subjects consisted of 85 males and 125 females, while the age range was 18 to 73.

Data concerning gender and age was obtained from the cover sheet of the interest inventory. Data concerning work and leisure activities from the past, in the present, and anticipated in the future for each subject was obtained from the Career Planning Guide on page 10 of the inventory.

**Determining Validity and Reliability of the CEI**

The Standards for Educational and Psychological Testing (1985) distinguish between three types of validity: content, criterion-related, and construct. Content validity is a central concern during test development and consists of essentially judgment about each item's representativeness of the universe (Anastasi, 1982; Kerlinger, 1973; Standards for Educational and Psychological Testing, 1985). Anastasi (1982) maintains that content validity is built into a test through the choice of appropriate items. Kerlinger (1973) adds that in determining a test's content validity, the test constructor has to answer these questions:

1. Does the item represent the content or the universe of content of the property being measured?

2. If the universe of content has subsets, is the item a member of subset 1, 2, 3, etc. (p. 418).

In determining content validity, the Committee to Develop Standards for Educational and Psychological Testing (1985) suggests that, given the proposed uses of the test, test
development must first adequately specify the universe of content that the test is intended to represent. Similarly, Anastasi (1982) says that content validation essentially involves the systematic examination of the test content to determine whether it covers a representative sample of the behavior domain to be measured. In order to satisfy the aforementioned criteria, a pool of over 700 items representative of the fields of work and leisure was generated from a review of existing career and leisure interest inventories. Some of the career and leisure interest inventories that were reviewed are the Self-Directed Search (Holland, 1975), Strong-Campbell Interest Inventory (Campbell & Hansen, 1981), Kuder General Interest Survey (Kuder, 1976), Harrington-O’Shea Career Decision-Making System (Harrington & O’Shea, 1982), Ohio Vocational Interest Survey (D’Costa, Winefordner, Odgers, & Koons, 1970), Career Assessment Inventory (Johansson & Johansson, 1978), Vocational Interest Inventory (Lunneborg, 1981), Interests Determination, Exploration and Assessment System (Johansson, 1983), Leisure Activities Blank (McKechnie, 1974), Life Interests Inventory (Frisbie, 1982), and the Leisure Development Inventory (McDaniels, 1977).

There are different opinions about the most effective method for obtaining content validity. Crano and Brewer (1986) contend that the assessment of content validity continues to be a subjective operation because no simple statistical measure exists to determine if this validation requirement is being met. They suggest using a panel of experts to secure adequate coverage of a particular scale. The Standards for Educational and Psychological Testing (1985) maintain that expert professional judgment plays an integral part in developing what is to be measured including a description of the universe of content, generating or selecting the content sample, and specifying the item format and scoring system. The Standards state that:
The first task for test developers is to specify adequately the universe of content that a test is intended to represent, given the proposed uses of the test. Another important task is to determine the degree to which the format and response properties of the sample of items or tasks in a test are representative of the universe.

Anastasi (1982) recommends that items be analyzed qualitatively in terms of their content and form, and quantitatively in terms of their statistical properties. This will be the methodology followed in enhancing content validity of the Career Exploration Inventory. Therefore, the items will first be given to five independent judges for verification of each items' form, content, and placement into interest categories. The judges were furnished with background information on work and leisure and were asked to make judgments about each of the items in the preliminary form of the CEI.

To analyze the items quantitatively, the 12 items for each of the 15 categories (reduced from 17 to 15 by the "expert" judges) were given to a pilot population. Data from the pilot tests provided the researcher with input about the inventory's format and allowed the researcher to subject each of the 12 items to a test of internal consistency (coefficient alpha) using the Statview 512+ statistical package. The four items deleted from each of the 15 categories were the ones that had the lowest correlation with the remaining items in each category. Deletion of these four items increased the reliability of the scale. This item analysis reduced the number of items from 12 to 8 for each category. According to Anastasi (1982) this practice provides a means of purifying or homogenizing a test and that "item analysis makes it possible to shorten a test and at the same time increase its validity and reliability" (p. 192). Ary, Jacobs, and Razavieh (1979) believe that "the more heterogeneous the domain, the lower the inter-item consistency and, conversely, the more homogeneous the domain, the higher the inter-item consistency" (p. 233).
Kerlinger (1973) suggests that criterion-related validity is measured by comparing a test or scale scores with one or more external variables known to measure the attribute under study. He adds that "interest is not so much in what is behind test performance as it is in helping to solve practical problems and to make decisions" (p. 419). Anastasi (1982) distinguishes between concurrent criterion-related validity and predictive criterion-related validity by saying that "concurrent validation is relevant to tests employed for diagnosis of existing status, rather than prediction of future outcomes" (p. 137). Concurrent validity for the Career Exploration Inventory will be determined by comparing each subject's top three scores on the interest categories (for work, educational courses, and leisure activities) with their favorite work and leisure activities from the past, present, and future. The percentage of "hits" will then be calculated for each of the time frames and also for sustained interest.

Anastasi (1982) contends that construct validity focuses on a broader, more enduring, and more abstract kind of behavioral description requiring the gradual accumulation of information from a variety of sources. The fact that internal consistency correlations will be computed to determine each scale's homogeneity contributes to the construct validity of the instrument. Many researchers (Anastasi, 1982; Cronbach, 1970; Kerlinger, 1973) add that correlations between a new test and similar early tests provide evidence that the new test measures approximately the same general domain as other established tests. However, no attempt will be made in this study to empirically compare scores on the CEI with other interest inventories. For the purposes of this study construct validity will be established by determining the number of times the CEI accurately measured sustained interests from the past, in the present, and anticipated in the future. For example, a "hit" was recorded if a person listed gardening as a leisure interest in the past, present, and future.

Cronbach (1970) suggests that there are three parts to construct validation: suggesting what constructs possibly account for test performance, deriving hypotheses from the theory
involving the construct, and testing the hypotheses empirically. According to Kerlinger (1973), "construct validity links psychometric notions and practices to theoretical notions" (P. 420). Since construct validity is primarily concerned with answering the question "What psychological or other property or properties can explain the variance of the test?" the test constructor should try to incorporate relevant theory into the construction of the instrument. The theory behind the Career Exploration Inventory is that it is important to identify sustained, developmental interests that individuals have engaged in in the past, are currently engaging in, and anticipate engaging in the future.

Test-retest reliability will be obtained by re-administering the Career Exploration Inventory to a portion of the original sample approximately three months after the initial testing in order to get an estimate of the stability of the scales.

Summary

In summary, the Career Exploration Inventory will be a brief, exploration-oriented interest inventory that creates an awareness of a variety of work and leisure interests over the life span. The instrument developed will: utilize a developmental, free response item format; be comprised of items applicable to both work and leisure interests; develop homogeneous interest scales; use gender-fair items; and be normed on employed and unemployed/underemployed adults. The instrument will be subjected to a series of pilot tests and a field tested to determine the validity and reliability of the instrument.
CHAPTER 4

CAREER EXPLORATION INVENTORY DEVELOPMENT RESULTS

This chapter provides information about the Career Exploration Inventory's internal consistency, measures of the inventory's validity and reliability, and qualitative data concerning the instrument's effectiveness and utility in career counseling situations. Two sample case studies are presented to illustrate the practical application of the CEI in career counseling situations. Quantitative data gleaned from field testing the Career Exploration Inventory are also provided in this chapter. As stated in Chapter 1, this data was then compared with the four task statements which guided this study in order to determine the effectiveness or ineffectiveness of the CEI:

1. The first task is to select and place items into independent interest categories that are equally appropriate to work and leisure activities.

2. The second task is to establish whether high scores on the interest scales are consistent with the individual's identified work and leisure activities.

3. The third task is to determine if continuing work and leisure interests can be inventoried from the past, in the present, and anticipated in the future.

4. The fourth task is to describe the stability of scores over time from each of the interest scales.
Theoretical Basis for the CEI

The CEI was based on two theoretical constructs which have never been utilized as the basis for an interest inventory. The two constructs were Super's (1980) "Life span, Life Space" theory of career development and McDaniels' (1984) concept of "Career equals Work plus Leisure" (C = W + L). The life-span aspect of Super's (1980) theory was instrumental in the construction of a unique developmental item response format. According to Super (1984), "It is important to maintain three time perspectives: the past from which one has come, the present in which one currently functions, and the future toward which one is moving" (p. 192). Drawing from this perspective, the CEI utilized a response format comprised of P for Past Interest, C for Current Interest, and F for Interest Anticipated in the Future instead of the traditional response format (L for Like, I for Indifferent, and D for Dislike).

The life-span aspect of Super's (1980) theory was also utilized in the development of the CEI's Career Exploration Guide. This is a section of the inventory which enables individuals to explore their interests in occupations, educational courses, and leisure for self, family, and community service. Similarly, McDaniels' (1984) concept of "Career equals Work plus Leisure" (C = W + L) forms the basis for inventoring both work and leisure interests. The Career Planning Guide, based on McDaniels' (1977) Leisure Development Inventory, was included in the CEI in order to assist subjects in the exploration of how their work and leisure interests formed and combined over the life span.

Because all existing classification systems were primarily designed for matching clients with the world-of-work, the researcher felt that using an existing classification systems was inappropriate. Thus, the CEI was not developed to simply match clients and jobs by utilizing one of the existing classification systems (c.f., Gati, 1979; Holland, 1973; Prediger, 1981; Roe, 1972). Rather, the CEI was developed to assist clients in the
exploration of both work and leisure interests from the past, in the present, and those anticipated in the future.

Interest Category Arrangement

The development of the CEI has placed little emphasis on the development and arrangement of interest scales. The interest categories developed for the CEI were modeled after the twenty interest categories developed by Super and Bowlby (1979) for use in the Guided Career Exploration course. The fifteen interest categories used for the CEI make no attempt to distinguish between fields and levels of occupations, but rather group items into interest categories to help clients more easily explore how their work and leisure interests develop and combine over the life span to form the concept of career.

Quantitative data concerning the intercorrelation of the scales was obtained from the pilot studies and helped determine scales with the highest correlations. Table 2 shows the correlations between the interest categories. The highest correlations occurred between Clerical and Financial (.87) and between Managing and Influencing (.81), while the lowest correlations occurred between Mechanical and Personal Service (-.153) and Mechanical and Life Sciences (-.132). Using this information, scales which were most congruent were grouped together on the final form of the CEI. For example, Life Sciences is more closely related to Physical Sciences than it was to Mechanical.

Summary of the Results

Content Validity. The first task statement guiding this study "to select and place items into independent interest categories that are equally appropriate to work and leisure activities" deals with the content validity of the instrument.
Table 2  Correlation Matrix for the 15 Interest Categories

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<th>LSCI</th>
<th>ART</th>
<th>LIT</th>
<th>SOC</th>
<th>PHYP</th>
<th>PERS</th>
<th>PR/IN</th>
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<th>LEAD</th>
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<td>.049</td>
<td>.434</td>
<td>.346</td>
<td>.377</td>
<td>.583</td>
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<td>.295</td>
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<tr>
<td>PERS</td>
<td>.153†</td>
<td>.13</td>
<td>.285</td>
<td>.272</td>
<td>.38</td>
<td>.382</td>
<td>.214</td>
<td>.384</td>
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<td>PR/IN</td>
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<td>.090</td>
<td>.167</td>
<td>.649</td>
<td>.426</td>
<td>.599</td>
<td>.43</td>
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<tr>
<td>PRO</td>
<td>.393</td>
<td>.207</td>
<td>.334</td>
<td>.554</td>
<td>.336</td>
<td>.434</td>
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<td>.191</td>
<td>.699</td>
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<td>CLE</td>
<td>.051</td>
<td>.091</td>
<td>.167</td>
<td>.338</td>
<td>.222</td>
<td>.504</td>
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<td>.437</td>
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<td>.782</td>
<td>.516</td>
<td>.461</td>
<td>.58</td>
<td>1</td>
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<tr>
<td>FIN</td>
<td>.288</td>
<td>.063</td>
<td>.219</td>
<td>.413</td>
<td>.13</td>
<td>.442</td>
<td>.286</td>
<td>.378</td>
<td>.393</td>
<td>.553</td>
<td>.603</td>
<td>.443</td>
<td>.591</td>
<td>.87*</td>
<td>1</td>
</tr>
</tbody>
</table>

* For interest category definitions see pages 73-76
* Highest correlations
† Lowest correlations
From the original pool of 700 items, twelve items which were most representative of the fields of work and leisure were selected for each of the seventeen pre-determined interest categories. These items were not specific to either work or leisure. Five independent judges were asked to verify each of the twelve items for content, form, and placement of the items into interest categories. Finally, the judges were asked to determine appropriate labels for the fifteen undefined interest categories. Category labels that were named most often were used in the final form of the inventory. The judges felt that the "Social Service" and "Social Research" categories and the "Travel" and "Physical Performing" interest categories should be combined. A description of the labels generated by the judges for each of the fifteen interest categories is provided in Table 3.

The fifteen categories with twelve items in each category were given to a random population (N=30) and subjected to a coefficient alpha correlational analysis using the Statview 512+ (1986) statistical package. The coefficient alpha internal consistency measures for the fifteen, eight-item interest categories are shown in Table 4. Correlations ranged from .56 for Social Services to .84 for Clerical.

With respect to internal consistency, the Strong-Campbell Interest Inventory (Campbell & Hansen, 1981) showed inter-item correlations of .30 or less. The Vocational Interest Inventory (Lunneborg, 1981) scales demonstrated estimates ranging from .54 for Culture to .80 for Science. The Leisure Activities Blank (McKechnie, 1974) showed internal consistency estimates ranging from .76 for Intellectual to .94 for Adventure and Mechanics. The Life Interests Inventory (Frisbie, 1982) demonstrated a range of internal consistency estimates from .76 to .93. The Career Exploration Inventory developed for this study showed internal consistency measures ranging from .56 to .84.

Based on the previous examples, it can be concluded that the Career Exploration Inventory demonstrates internal consistency estimates comparable to that of existing interest
Table 3  Suggested Interest Category Labels

<table>
<thead>
<tr>
<th>Category Name</th>
<th>Judge 1</th>
<th>Judge 2</th>
<th>Judge 3</th>
<th>Judge 4</th>
<th>Judge 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>Mechanical</td>
<td>Mechanical</td>
<td>Mechanical Repair</td>
<td>Industrial</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Animal Care</td>
<td>Fauna</td>
<td>Animal Services</td>
<td>Animal Care</td>
<td>Zoology</td>
<td>Animal Care</td>
</tr>
<tr>
<td>Plants</td>
<td>Flora</td>
<td>Plants</td>
<td>Plants</td>
<td>Botanical</td>
<td>Plants</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>Science</td>
<td>Physical Science</td>
<td>Science</td>
<td>Scientific</td>
<td>Physical Science</td>
</tr>
<tr>
<td>Life Sciences</td>
<td>Life Sciences</td>
<td>Life Sciences</td>
<td>Medical</td>
<td>Biological</td>
<td>Health Care</td>
</tr>
<tr>
<td>Artistic</td>
<td>Artistic</td>
<td>Artistic</td>
<td>Performing Arts</td>
<td>Artistic</td>
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</tr>
<tr>
<td>Literary Arts</td>
<td>Literature</td>
<td>Literary Arts</td>
<td>Journalism</td>
<td>Literary Arts</td>
<td>Creative Writing</td>
</tr>
<tr>
<td>Social Service</td>
<td>Helping</td>
<td>Social Service</td>
<td>Community Service</td>
<td>Intervention</td>
<td>Social Service</td>
</tr>
<tr>
<td>Physical Performing</td>
<td>Physical Fitness</td>
<td>Physical Performing</td>
<td>Sports</td>
<td>Physical Performing</td>
<td>Sports / Recreation</td>
</tr>
<tr>
<td>Personal Service</td>
<td>Service</td>
<td>Accommodating</td>
<td>Personal Service</td>
<td>Domestic</td>
<td>Personal Service</td>
</tr>
<tr>
<td>Persuading/Influencing</td>
<td>Leading</td>
<td>Managing</td>
<td>Persuasion</td>
<td>Propagational</td>
<td>Politics</td>
</tr>
<tr>
<td>Protecting</td>
<td>Protecting</td>
<td>Protecting</td>
<td>Protecting</td>
<td>Emergency</td>
<td>Safety / Protecting</td>
</tr>
<tr>
<td>Leading</td>
<td>Leading</td>
<td>Leading</td>
<td>Leadership</td>
<td>Leading</td>
<td>Administration</td>
</tr>
<tr>
<td>Clerical</td>
<td>Clerical</td>
<td>Clerical</td>
<td>Secretarial</td>
<td>Clerical</td>
<td>Clerical</td>
</tr>
<tr>
<td>Financial Detail</td>
<td>Financial Records</td>
<td>Financial Detail</td>
<td>Finance</td>
<td>Financial Detail</td>
<td>Business / Finance</td>
</tr>
</tbody>
</table>

* For interest category definitions see pages 73-76
Table 4 Internal Consistency Measures

<table>
<thead>
<tr>
<th>Interest Categories</th>
<th>Coefficient Alpha*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECHANICAL</td>
<td>.83</td>
</tr>
<tr>
<td>ANIMAL CARE</td>
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</tr>
<tr>
<td>PLANTS</td>
<td>.66</td>
</tr>
<tr>
<td>PHYSICAL SCIENCES</td>
<td>.69</td>
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<tr>
<td>LIFE SCIENCES</td>
<td>.75</td>
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<td>ARTISTIC</td>
<td>.62</td>
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<tr>
<td>LITERARY ARTS</td>
<td>.67</td>
</tr>
<tr>
<td>SOCIAL SERVICE</td>
<td>.56</td>
</tr>
<tr>
<td>PHYSICAL PERFORMING</td>
<td>.74</td>
</tr>
<tr>
<td>PERSONAL SERVICE</td>
<td>.68</td>
</tr>
<tr>
<td>PERSUADING/INFLUENCING</td>
<td>.66</td>
</tr>
<tr>
<td>PROTECTING</td>
<td>.60</td>
</tr>
<tr>
<td>LEADING</td>
<td>.76</td>
</tr>
<tr>
<td>CLERICAL</td>
<td>.84</td>
</tr>
<tr>
<td>FINANCIAL DETAIL</td>
<td>.73</td>
</tr>
</tbody>
</table>

*Comparable internal consistency measures of existing interest inventories range from .30 to .94 (See page 79 for discussion).
inventories. The results of the quantitative and qualitative analyses suggest that items for the CEI were selected and placed into independent interest categories that were equally appropriate to work and leisure activities.

**Criterion-Related Validity.** The second task statement guiding this study "to establish whether high scores on the interest scales are consistent with the individual's identified work and leisure activities" deals with the criterion-related validity of the CEI.

The Committee to Develop Standards for Educational and Psychological Testing (1985) suggests that criterion and prediction information in a study should be obtained simultaneously in order to determine criterion-related validity. In this study this was accomplished by asking subjects to list work and leisure activities from the past, in the present, and those anticipated in the future. This information was used to calculate the number of "hits." For example, if a person listed having a garden in the past and scored highest in the category labeled "Plants", a "hit" was recorded. Table 5 summarizes the number of "hits" on an individual's top three scales accurately measured by the CEI.

As can be seen from Table 5, the CEI accurately measured subject's (N=210) top three past and present work and leisure interests. The CEI most accurately measured leisure interests in the present (79%) and leisure interests in the past (77%). The instrument also accurately recorded subjects' past work experience (72%). While present work interests were the lowest percentage (69%) measured by the CEI, this percentage is still relatively high considering that a large portion of the sample were unemployed and enrolled in a job search program at the time of testing.

Table 6 shows the percentage of time that the CEI accurately identified a subjects' (N=210) primary work and leisure interests. In order to be considered a "hit", the subjects' highest score in a particular work and leisure category had to match with the work
Table 5  Frequency of Accurately Measured "Hits" Using the Highest Three Interest Categories

<table>
<thead>
<tr>
<th>Subjects' Identified Interests (N=210)</th>
<th>Number of &quot;Hits&quot;*</th>
<th>% of &quot;Hits&quot;*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Past</td>
<td>151</td>
<td>72%</td>
</tr>
<tr>
<td>Work Present</td>
<td>145</td>
<td>69%</td>
</tr>
<tr>
<td>Leisure Past</td>
<td>162</td>
<td>77%</td>
</tr>
<tr>
<td>Leisure Present</td>
<td>166</td>
<td>79%</td>
</tr>
</tbody>
</table>

*Hits are defined as accurately measured developmental work and leisure interests as measured by the CEI and identical, developmental interests identified by the subject on the Career Planning Guide.
Table 6 Frequency of Accurately Measured "Hits" Using the Highest Interest Category

<table>
<thead>
<tr>
<th>Subjects' Identified Interests (N=210)</th>
<th>Number of &quot;Hits&quot;*</th>
<th>% of &quot;Hits&quot;*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Past</td>
<td>91</td>
<td>43%†</td>
</tr>
<tr>
<td>Work Present</td>
<td>93</td>
<td>44%†</td>
</tr>
<tr>
<td>Leisure Past</td>
<td>107</td>
<td>51%†</td>
</tr>
<tr>
<td>Leisure Present</td>
<td>103</td>
<td>49%†</td>
</tr>
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</table>

*Hits are defined as accurately measured developmental work and leisure interests as measured by the CEI and identical, developmental interests identified by the subject on the Career Planning Guide.

†Comparable interest inventories demonstrated "hit" rates ranging from 40% + or - 5%.
and leisure activities listed by the subject. As can be seen from Table 6, the CEI most accurately measured subjects' leisure interests. Past leisure interests of subjects were accurately identified by the CEI 51% of the time, while present leisure interests were correctly identified 49% of the time. There was little difference in the past and present work interests measured by the CEI. The instrument accurately measured subjects' past work interests 43% of the time and present work interests 44% of the time.

Frisbie (1981) reviewed various studies in an attempt to determine what constituted an acceptable "hit" rate. In his study and the studies he cited, "hit" rates ranged from 40% plus or minus 5% (Holland, Magoon, & Spokane, 1981); 41% to 78% (Laing, Lamb, & Prediger, 1982); 21% for chosen occupations and 18% for chosen leisure activities (Cairo, 1979); and 43% for occupational training, 23% for chosen job, and 42% for leisure activities (Frisbie, 1981). Using the top score for each category, the CEI obtained "hit" rates (43% to 51%) that are comparable to the data obtained from other interest inventories. Therefore, it can be concluded that subjects' high scores on the interest scales of the CEI were consistent with their identified work and leisure activities.

Construct Validity. The third task statement "to determine if continuing work and leisure interests can be inventoried from the past, in the present, and anticipated in the future" deals with the construct validity of the instrument.

Since construct validity is the extent to which a test measures a theoretical construct, construct validity for the CEI was measured by the number of times the instrument accurately predicted a subjects' developmental, sustained interests from the past, in the present, and those anticipated in the future. The Career Planning Guide was used by the subjects to list interests from the past, present, and those anticipated in the future. From
this list, sustained interests were identified as those interests which were present in all three
time frames.

To determine if a "hit" occurred, these sustained interests from the Career Planning
Guide were compared with the interest category in which each subject scored the highest on
the CEI. If a particular interest was listed in all three time frames and matched the highest
interest category, it was considered to be a "hit" and recorded in the appropriate category
(i.e., work or leisure). For example, if a person listed reading as an interest in the past,
present, and future and scored highest in "Literary Arts", a "hit" was recorded. Table 7
summarizes the number of developmental "hits" that were recorded.

Table 7 illustrates the CEI's capacity to accurately measure subjects' (N=210) work
and leisure interests in the past, present, and future. The CEI accurately identified 54% of
the subjects' sustained work interests (i.e., work interests from the past, present, and those
anticipated in the future). It also successfully identified 67% of the subjects' sustained
leisure interests (i.e., leisure interests from the past, present, and those anticipated in the
future). Because the CEI is the first interest inventory to measure sustained interests over
the life span, no existing instrument could provide comparable data. The results of this
study indicate that the CEI accurately inventoried developmental, continuing work and
leisure interests from the past, in the present, and those anticipated in the future.

*Test-Retest Reliability.* The fourth task statement "to describe the stability of scores over
time from each of the interest scales" deals with test-retest reliability of the CEI.

To determine test-retest reliability, a sample of the original group of subjects was re-
tested to help determine the stability of the basic interest categories over time. Subjects
(N=55) were re-tested after approximately three months and correlations for the fifteen
interest categories ranged from .80 for Physical Science and Animal Care to .92 for
<table>
<thead>
<tr>
<th>Subjects' Identified Interests (N=210)</th>
<th>Number of &quot;Hits&quot; *</th>
<th>% of &quot;Hits&quot;*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>114</td>
<td>54%</td>
</tr>
<tr>
<td>Leisure</td>
<td>141</td>
<td>67%</td>
</tr>
</tbody>
</table>

* "Hits" are defined as developmental work and leisure interests as measured by the CEI and identical, developmental interests identified by the subjects on the Career Planning Guide.
Mechanical. Table 8 shows the results of the test-retest analysis.

A frequently raised question in the literature concerns the minimum acceptable reliability of an instrument. Thorndike and Hagen (1969) contend that there is no general answer to this question and suggest that the answer depends on each specific situation. According to Ary, Jacobs, and Razavieh (1979), "the degree of reliability needed in a measure depends to a great extent on the use that is to be made of the results" (p. 212). They suggest that if measurement results are being used for decisions about a group or for research purposes, a reliability of .30 to .50 might be acceptable. However, if the results are being used for making important or irreversible decisions about individuals, instruments should have higher reliability. Similarly, Nunnally (1978) stated that for research purposes reliabilities in the range of .50 to .60 would be acceptable, but individual choice situations would require a minimum reliability of .90.

The SCII (Campbell & Hansen, 1981) reported test-retest statistics for the 1981 Occupational Scales of .91 over two-weeks, .89 over thirty days, and .87 over a three-year period. The VII (Lunneborg, 1981) reported test-retest reliability over three weeks .81 (This was the median correlation). The LAB (McKechnie, 1974) reported a mean reliability coefficient of .85 over a three week period. The LII (Frisbie, 1981) reported a median reliability coefficient of .87 over a 16 or 17 day period of time. As reported in Table 8, the Career Exploration Inventory demonstrated a mean reliability of .84 over a three month period of time. With respect to short term test-retest reliability, the developmental interest inventory developed in this study demonstrates reliability comparable with existing interest inventories. Based on the results of this study, it can be concluded that the CEI accurately describes the stability of scores over time from each of the interest scales.
Table 8 Test-Retest Reliability*

<table>
<thead>
<tr>
<th>Interest Category (N=55)</th>
<th>Reliability Coefficient $(X=.84)$†</th>
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</thead>
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<tr>
<td>MECHANICAL</td>
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<tr>
<td>ANIMAL CARE</td>
<td>.80</td>
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<tr>
<td>PLANTS</td>
<td>.82</td>
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<tr>
<td>PHYSICAL SCIENCES</td>
<td>.80</td>
</tr>
<tr>
<td>LIFE SCIENCES</td>
<td>.86</td>
</tr>
<tr>
<td>ARTISTIC</td>
<td>.82</td>
</tr>
<tr>
<td>LITERARY ARTS</td>
<td>.81</td>
</tr>
<tr>
<td>SOCIAL SERVICE</td>
<td>.81</td>
</tr>
<tr>
<td>PHYSICAL PERFORMING</td>
<td>.82</td>
</tr>
<tr>
<td>PERSONAL SERVICE</td>
<td>.86</td>
</tr>
<tr>
<td>PERSUADING/INFLUENCING</td>
<td>.82</td>
</tr>
<tr>
<td>PROTECTING</td>
<td>.88</td>
</tr>
<tr>
<td>LEADING</td>
<td>.90</td>
</tr>
<tr>
<td>CLERICAL</td>
<td>.83</td>
</tr>
<tr>
<td>FINANCIAL DETAIL</td>
<td>.81</td>
</tr>
</tbody>
</table>

*Subjects were retested approximately 3 months after initial administration.

†Comparable interest inventories demonstrated reliability coefficients ranging from .81 to .91 over varying periods of time (two weeks to three years).
Utility of the CEI

Specific comments and suggestions recorded on the Client Observation Sheet from the subjects tested in the study are presented in Appendix C. The overall consensus among those completing the CEI was that the instrument was accurate and helpful in identifying and verifying interests. Such comments as "The results were very true" and The results were very similar to those attained with the Strong-Campbell Interest Inventory" were examples of subjects' comments pertaining to accuracy of the instrument. The instrument also seemed to be very helpful in the career planning process. For example, many of the subjects made comments such as "I wish I had such a tool when I first started working. Really helps in career planning" and "It made me think of options I didn't know I had."

The researcher was primarily interested in the utility of a developmental format. No existing interest inventories (c.f., Self-Directed Search, Strong-Campbell) have been designed to elicit individuals' interests from a developmental. The developmental format of the CEI seemed to be valuable in measuring individuals' "true" interests. Additionally, it helped individuals explore work and leisure interests over the life span, rather than measure interests they presently held and/or in which they were currently engaged. Comments such as "I thought it was interesting to look at my interests from a past, present, and future perspective" and "The CEI helped me to clarify what I want to do in the future" seemed to indicate that a developmental format was effective. One subject, however, said "I was unclear about the P-C-F format."

During interviews with subjects completing the CEI, several subjects expressed surprised that work and leisure activities in which they were currently engaged were not among their top scores (c.f., Case Study of Barry). Upon further reflection, many of the subjects realized that these were not continuing interests, but rather activities in which they were engaged at the time of taking the inventory. The CEI appeared to be very effective in
identifying sustained interests that individuals had developed throughout the years rather than current interests.

The researcher was also interested in the effectiveness of the CEI in helping subjects identify and explore both work and leisure interests. The measurement and exploration of both work and leisure appeared to be a valuable experience for a majority of the subjects. Some of their comments included "I was able to identify work options from my leisure pursuits", "The CEI helped me form a plan for looking for a job -- using carpentry skills developed in my leisure as a source of full-time employment", and "I like the idea of measuring leisure interests." It appeared that by identifying both work and leisure interests, subjects were able to look how these interests interacted as their career developed.

The researcher set out to develop an interest inventory which did not "match" individuals with jobs. Instead, the CEI was designed to assist individuals in both the exploration of work and leisure interests and in the exploration of the interaction of their work and leisure interests over time. The exploration aspect of the CEI also appeared to be helpful to subjects and was reflected in comments such as "The suggestions for further research are helpful" and "The Exploration Guide was pretty interesting."

On the other hand, the CEI appeared to some to be too simplistic. Comments such as "The CEI seems to be pretty good, but I find it simplistic and too general. The Kuder does the same thing, but more thoroughly" and "I thought the CEI was too simplistic and general" addressed this issue. However, the researcher intended to develop a brief interest inventory for a variety of populations that could be easily self-administered, scored, and interpreted.

Thus, the results of this study indicate that the CEI is useful in determining adults' work and leisure interests over time. This study suggests that the CEI is effective when used with unemployed and underemployed adults, as well as employed adults. It is also
possible that the CEI might be useful in the identification and exploration of the interaction between work and leisure for a variety of populations including secondary students, college students, handicapped individuals, non-English speaking individuals, and other non-traditional groups. However, before such extended use of the CEI is possible, the instrument would have to be administered to each of the various groups in order to establish norms for each of the populations.

Using the CEI in Career Counseling: Case Studies

The following sample case studies may be useful as an introduction to interpretation of the developmental work and leisure interests as measured by the CEI. The cases are actual clients participating in the Jobs Training Partnership Act program in Pennsylvania and were selected to illustrate some of the typical CEI profile characteristics. In addition the cases demonstrate how subjects' work and leisure activities interact throughout the life span to form the individual's career.

Barry Jones

Barry is a thirty-two year old male who was laid off from his job as a surveyor and was seeking employment through the Private Industry Council job placement and job search programs. Barry is married and has a three year old son. Barry has a high school diploma and an associate degree in drafting. After completing his associate degree, Barry went to work as a surveyor for the county. He held this position for two years before being laid off. His CEI Interest Profile indicates that his highest sustained interests are in "Mechanical" (23), "Physical Performing" (17), and "Plants" (15). His raw scores in these areas were in the "high" range and "high average range" respectively.
Barry was surprised that drafting did not come out as his main interest. After much discussion, it was discovered that he had a sustained interest in home repair (Mechanical) and playing softball (Physical Performing), yet only had a minor interest in drafting because he thought he could get a good job with drafting skills. The developmental format of the CEI proved to be valuable in this case in identifying continuing, developmental interests.

During the past three years, Barry's main leisure interest has been in home improvements. He and his wife bought an old house which they were going to restore. During the restoration process, Barry was able to assist family and friends in various jobs including electrical wiring, carpentry, plumbing, and masonry. Even though these were leisure activities, Barry reported that he was able to explore, utilize, and develop a variety of vocational skills. It was from these experiences that Barry discovered that he had an aptitude for plumbing and pipefitting. He had always enjoyed working on the house, but never thought he could get a job utilizing these leisure-time skills. However, Barry began looking for a job in which he could utilize some of these transferable skills. Through Barry's other leisure interest, softball, he heard from a friend of a job with a plumber's and pipefitter's union. Barry applied and was admitted as an apprentice. Barry continues to develop his skills by making home improvements in his leisure time.

In the future, Barry indicated on the Career Planning Guide that he has aspirations of being self-employed. He indicated on the CEI that he hopes to combine his drafting skills and home improvement skills with his surveying and plumbing experience to start his own business by investing in old homes which he would restore and resale.
Valerie Francis

Valerie is a thirty-three year old widow with two children. She is a high school graduate and a licensed cosmetologist. After being licensed, Valerie worked for three years as a cosmetologist. In her leisure time she liked to bake, read, and care for her children. However, she was unhappy with her choice of work and had not worked in the last five years. Valerie had spent this time caring for her husband who was dying of cancer.

After her husband's death, Valerie began exploring suggestions for a new career. She is interested in a job which she would both enjoy and which would enable her to adequately provide for her two young children. Valerie has been thinking that she has more than a passing interest in the nursing care that she had provided her husband. The results of the CEI indicated "high" interest scores of 21 in "Personal Service," 19 in "Physical Sciences," and 18 in "Social Service". Valerie was participating in the PIC program to enroll in the nurse's aide course at the local vocational school in order to "brush up on the basics" and gain experience in a hospital setting. The results of the CEI helped her to confirm her interest in nursing.

Her goal for the future is to be ready to enter the licensed practical nursing program at the local community college by fall and eventually work for a physician in private practice. The Career Exploration Guide enabled Valerie to identify various ways in which she could develop nursing skills in her leisure time. Consequently, Valerie indicated on the Career Planning Guide that she would continue to develop nursing skills in her spare time by volunteering at the community hospital.

Summary of the CEI

This study has produced the Career Exploration Inventory (Appendix A), a self-administered, scored, and interpreted interest inventory designed to measure an individual's
work and leisure interests throughout the life span. To accomplish this, the CEI utilized a unique item format (Circle P for Past Interest, C for Current Interest, and F for Future Interest) specifically designed to inventory the individual's interests from the past, in the present, and those anticipated in the future. The results of this study verified the utility of a developmental format which measures an individual's interests over time. Many subjects were pleasantly surprised at the instrument's accuracy in measuring continuing interests, rather than just current interests. Additionally, items chosen for inclusion in the CEI were those items which were equally applicable to both work and leisure (e.g., "Planting a garden" or "Caring for patients in a hospital") rather than items which directly referred to work (e.g., "Working in a garden") or to leisure (e.g., "Volunteering in a hospital").

After a series of pilot tests, two special features were included in the CEI to assist individuals in the identification and exploration of the interaction between their work and leisure interests. A Career Exploration Guide was added to enable individuals to easily access various work and leisure options available. A Career Planning Guide was included to help illustrate how a client's work and leisure activities from the past and present have combined and developed to form their career. Additionally, the Career Planning Guide allows subjects to formulate a plan for the future.

Norms were developed for the CEI using two separate norm groups: unemployed/underemployed adults (N=104) and employed adults (N=106) ranging in age from 18 to 73. Validity of the CEI was comparable to existing work and leisure interest inventories. Coefficient alpha internal consistency measures ranged from .56 to .84, while subjects' top scores for the interest categories were consistent with their work and leisure activities 43 to 51% of the time. The CEI correctly identified sustained, developmental interests for work (54%) and leisure (67%). Test-retest reliability measures over a three month period of time for the CEI ranged from .80 to .92.
Chapter Summary

This chapter provided a review of the quantitative and qualitative data gathered during the development of the CEI. Quantitative data was supplied in order to answer the four basic research questions which guided this study. It was found that the CEI demonstrated validity and reliability comparable to that of existing interest inventories. Qualitative data was reviewed which illustrated the inventory's utility and effectiveness. Case studies were also included to demonstrate practical application of the CEI in career counseling situations.
CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER STUDY

This chapter provides a summary of the development and construction of the Career Exploration Inventory, a summary of the findings from the qualitative and quantitative studies, a review of the theoretical structure, conclusions about the effectiveness and utility of the inventory, and suggestions for further research.

The Need for a Developmental Work/Leisure Interest Inventory

The recognition of leisure as an integral component in one's career has been recognized by career counselors (Allen, 1980; Blocher & Siegal, 1981; Bloland & Edwards, 1981; Edwards, 1984; Lemer, 1982; McDaniels, 1984, 1989; Rimmer & Kahnweiler, 1981; Seligman, 1980; Super, 1980, 1984, 1986). As leisure is looked upon as a crucial component in an individual's career development, more research is being done about the topic and new books and articles are being written on the topic of leisure (Edwards & Bloland, 1980; Kelly, 1982; Loesch & Wheeler, 1982; Roberts, 1981; Tinsley & Tinsley, 1982). Additionally, many models of leisure development are presented in the literature (Bloland & Edwards, 1980; Dowd, 1984; Edwards, 1980; Loesch, 1980; Loesch & Wheeler, 1982; McDowell, 1983; Neulinger, 1981; Peevy, 1981; Tinsley & Tinsley, 1982).

However, in a recent issue of U.S. News and World Report (1981, pp. 62-63) it was suggested that the true impact of the importance of leisure in the life of an individual has been overlooked. This and other studies (c.f., Where Does the Time Go? The United Media Enterprises Report on Leisure in America, 1982; The Miller Lite Report on American Attitudes Towards Sports, 1983) estimated that Americans spent a great deal of money and
time on leisure activities. This prompted members of the counseling profession to broaden their thinking about leisure and the ways in which it affected a person's career development.

Further recognition of leisure as an integral component in career counseling became evident in the number of publications on the topic of leisure. The Journal of Leisure Research, Journal of Leisurability, Leisure Sciences, and the "Leisure Today" section of the Journal of Health, Physical Education, and Recreation were devoted to the topic of leisure, while the October 1981 issue of The Counseling Psychologist and the December 1984 issue of The Journal of Career Development were also devoted entirely to leisure topics. Additionally, the Leisure Activities Blank (LAB) (McKeachie, 1974) has been published by Consulting Psychologists Press.

Career counselors are increasingly being called upon to assist individuals in identifying leisure, as well as work interests (Blocher & Siegal, 1984; Herr & Cramer, 1988; McDaniels, 1984, 1989; Super, 1984, 1986). Similarly, McDaniels (1964, 1977) proposed the formula "Career equals Work plus Leisure" ($C = W + L$) and suggested a holistic approach to career counseling in which work and leisure combine over one's life span to form the basis for a career. According to McDaniels (1984), "a skilled career counselor of the future should be able to provide assistance in both areas separately or in a combined holistic approach" (pp. 574-575). Similarly, one of the major postulates of this study is that career counselors must be able to assist their clients in the areas of work counseling and leisure counseling, or in an integrated approach.

Over the past two decades career counselors have recognized the importance of a developmental perspective in career counseling (McDaniels, 1984; Seligman, 1980; Sonnenfeld & Kotter, 1982; Super, 1980; Vondracek, Lerner, & Schulenberg, 1986). Not
only are work and leisure interests important in one's career development, but the manner in which they interact throughout the life span is also important.

Super's (1980) "Life-Span, Life Space" theory of career development is a comprehensive model which integrates aspects of work and leisure and also accounts for the life span of an individual by outlining five major life stages, specific career stages, related chronological ages, and major developmental tasks associated with each stage. Super (1986) believed that this life span view of career could be viewed as "the sequence and combination of roles that a person plays during the course of a lifetime" (p. 96). Consequently, another major postulate of this study is that career counselors must be able to assist their clients in the identification of interests throughout the life span.

Theoretical Structure and Format of the CEI

The development of the Career Exploration Inventory was based on two major theories of career development: (1) Super's (1980) "Life span, Life Space" theory of career development and (2) McDaniels' (1984) concept of "Career equals Work plus Leisure" (C = W + L). Utilizing aspects of these theories, a unique instrument was developed. The CEI was the first interest inventory to utilize a developmental item response format. This format allowed an individual to identify developmental, sustained interests over the life span. Additionally, the CEI was developed to measure both work and leisure interests over time.

The CEI made no attempt to simply "match" individuals and jobs by utilizing one of the existing classification systems; rather, it was designed to assist individuals in the exploration of work and leisure interests from the past, in the present, and in the future. Since all existing classification systems were primarily designed for matching clients with the world-of-work, the researcher felt that using an existing classification systems was
inappropriate. Additionally, the CEI included a Career Exploration Guide which enabled the individual to explore a variety of occupational, educational, and leisure interests. Finally, the CEI included a Career Planning Guide which helped individuals explore the interaction of between work and leisure interests throughout that individual's life span.

Inventory Development

The evolution of the Career Exploration Inventory was a developmental process which began with a review of the career development literature and a review of the existing work and leisure interest inventories. The review revealed two major needs in career development: (1) the need for an interest inventory which could be used in career counseling, leisure counseling, or in a holistic approach; and (2) the need for an interest inventory that measures developmental, continuing interests over the life span.

Career counselors were increasingly found to view the concept of career as the combination and interaction of work and leisure throughout the life span. Additionally, leisure is viewed as equally important as work from this perspective. For the most part, vocational interest inventories have neglected the leisure component, while leisure inventories have neglected the vocational component. The Life Interest Inventory (Frisbie, 1982) was the only inventory in the literature which assessed both work and leisure interests. However, the literature review revealed no instrument which measured developmental, continuing interests over the life span. Since career counselors are increasingly recognizing career as a developmental process which takes place over the life span, a major need identified from this search was the need for an interest inventory that measures continuing, developmental work and leisure interests from the past, in the present, and which are anticipated in the future.
The next phase in the development of the inventory consisted of beginning the actual construction of the interest inventory. Important questions which were addressed by the researcher concerned the inventory's format, content, scoring and norming procedures. Item selection and placement was an integral aspect of this phase. Twelve items representing work and leisure interests were selected for each of the fifteen interest categories. Independent judges were then asked to verify each item's form, content, and placement into interest categories. The items were then given to a random population and subjected to a coefficient alpha correlational analysis.

The third phase in the development of the inventory consisted of three pilot studies which were used to gather qualitative data about the inventory's format, clarity, and utility. Subjects (N=15) participating in the pilot studies were randomly selected from Virginia Polytechnic Institute and State University including graduate students in the Counselor Education Department, faculty, and staff. Subjects were asked to complete the CEI and complete the Client Observation Sheet (Appendix B). The researcher also interviewed each of the subjects to obtain feedback and suggestions which were then used in the development of the final form of the instrument.

The final phase in the development of the CEI consisted of field testing the instrument in order to gather quantitative data about the inventory's validity and reliability. The final form of the CEI was given to 104 unemployed and underemployed adults participating in the Jobs Training Partnership Act program in Southwestern Pennsylvania and 106 employees who had participated in program activities offered by the Employee Career Development Program at Virginia Polytechnic Institute and State University.
Inventory Construction

Initial construction of the CEI began with a thorough review of the existing career and leisure interest inventories. The construction of the preliminary instrument was based on a series of decisions made by the researcher concerning the type of items to utilize, the item format, the type of response format to use, the use of occupational or homogeneous interest scales, scoring procedures, norming procedures, and controlling for sex bias.

A pool of 700 items generated for consideration were adapted from existing career and leisure interest inventories. Then 180 items were selected for inclusion in the preliminary form of the CEI based on their applicability to both work and leisure. Items that directly referred to work or leisure were discarded or rewritten to be more general. For example, "Working with plants" was changed to "Plant a garden"; while "Volunteering to fight fires" was changed to read "Fight fires." Form, content, and placement of the items into interest categories were verified by five independent "expert" judges. The items were then given to a random pilot population (N = 30). Finally, a coefficient alpha correlational analysis was run on the data in order to determine the eight items in each of the fifteen categories which showed the highest clustering and accounted for the most error variance.

The fifteen interest categories used for this inventory were based on those developed by Super and Bowlby (1979) for the Guided Career Exploration course. Seventeen interest categories were originally chosen to represent the domains of work and leisure for the CEI. The judges suggested that two of the interest categories be combined. Additionally, the judges were responsible for naming the appropriate categories. The fifteen scales were then subjected to statistical analyses to determine appropriate placement on the inventory.
In an attempt to measure continuing interests, the traditional format (L for Like, U for Uncertain, and D for Dislike) was discarded because the researcher felt it was limited in that this format only measures "static" interests in the present. Instead, a format was developed to account for interests over time (P for Past Interests, C for Current Interests, and F for Future Interests). Although many career counselors utilize a developmental approach, no existing interest inventory has utilized a format to measure developmental interests.

A series of pilot studies were undertaken to gather qualitative information concerning the inventory's utility and effectiveness. Results from the pilot studies suggested that the scoring format and profile sheet be altered in order to allow subjects to more easily assimilate information accumulated from the CEI concerning the interaction of work and leisure interests. Additionally, a Career Planning Guide was added to help clients organize and explore their developmental work and leisure interests. These additions enhanced the CEI format by making it a self-administered, self-scored, and self-interpreted interest inventory.

In conclusion, the purpose of this study was to determine the effectiveness of a career interest inventory which measures both work and leisure interests over the life span. It was found that by combining qualitative (a panel of five judges) and quantitative (Coefficient alpha correlational analysis) analyses, independent interest categories representing both work and leisure activities could be developed. Additionally the scales were found to demonstrate acceptable criterion-related validity and acceptable reliability over time. Because the CEI was designed to measure sustained interests over time, construct validity was also a crucial component.
Summary of the Findings

The first task statement which guided this study was to select and place items into independent interest categories that are equally appropriate to work and leisure activities. The coefficient alpha internal consistency estimates for each of the fifteen interest categories ranged from .56 in Social Service to .84 in Clerical. The scales which demonstrated the highest correlations were between Clerical and Financial (.87) and between Managing and Influencing (.81), while the lowest correlations occurred between Mechanical and Personal Service (-.153) and Mechanical and Life Sciences (-.132). The results of this study suggest that items for the CEI were selected and placed into independent interest categories which were equally appropriate to work and leisure activities.

The second task statement which guided this study was to establish whether high scores on the interest scales are consistent with the individual's identified work and leisure activities. Using a subject's highest three interest categories, it was found that the CEI most accurately measured leisure interests in the present (79%), leisure interests in the past (77%), work interests in the past (72%), and present work interests (69%).

Using a subject's highest interest category, subjects' past leisure interests were accurately identified by the CEI 51% of the time, while present leisure interests were correctly identified 49% of the time. There was little difference in the past and present work interests measured by the CEI. The CEI accurately measured subjects' past work interests 43% of the time and present work interests 44% of the time. Using the highest score for each category, the CEI obtained "hit" rates comparable to that of existing interest inventories. According to this research, it can be concluded that an individual's high scores on the interest scales of the CEI were consistent with his/her work and leisure interests.
The third task statement guiding this study was to determine if continuing work and leisure interests could be inventoried from the past, in the present, and anticipated in the future. This information was then used by the researcher to calculate the number of "hits" for the leisure and work categories. The CEI accurately identified 54% of the subjects' sustained work interests and 67% of the subjects' sustained leisure interests. Because the CEI is the first interest inventory to measure sustained interests over the life span, no existing instrument could provide comparable data. However, the results of this study indicate that more than half of the time the CEI accurately measured developmental continuing work and leisure interests throughout the life span.

The fourth task statement guiding this study was to describe the stability of CEI scores over time from each of the interest scales. Subjects (N=55) were re-tested after approximately three months and correlations ranged from .80 for Physical Science and Animal Care to .92 for Mechanical. The CEI demonstrated a mean reliability of .84 over the three month period of time. This reliability estimate was comparable to existing interest inventories. Based on these results, it can be concluded that the CEI does demonstrate stability of scores over time.

**Review of the Inventory's Utility**

The overall consensus among those completing the CEI was that the instrument was accurate and helpful in identifying and verifying work and leisure interests. Most felt the instrument was accurate and yielded results similar to other interest inventories. The instrument also seemed useful in the career planning process. The developmental format seemed to be valuable in getting subjects to look at work and leisure interests over the life span. The identification and exploration of both work and leisure appeared to be a valuable
experience for a majority of the subjects. The exploration aspect of the CEI also appeared to be helpful to subjects identifying alternatives of which they were unaware.

On the other hand, the CEI appeared to some to be too simplistic and too general. However, in this study, it was the intent of the researcher to develop a brief interest inventory which could be utilized with a variety of populations and which could be easily self-administered, scored, and interpreted.

Thus, the results of this study indicate that the CEI is useful in determining adults' work and leisure interests over time. Since the CEI was normed on unemployed/underemployed and employed adults, this study suggests that this instrument is effective when used with these populations. The CEI might also prove to be effective in helping secondary students and college students identify and explore the interaction between work and leisure interests. It is also possible that this instrument would facilitate career development in other populations such as retirees, non-English speaking subjects, and the handicapped. However, in order to be effective, norms need to be established for each of these populations on the CEI.

**Suggestions for Further Research**

As cited earlier, the construction of the CEI has been a developmental process. In its present form, the CEI is an inventory which measures work and leisure interests from a developmental perspective. However, as with any developmental process, revision is ongoing. Thus, the following are suggestions which may enhance the further development of the CEI:

1. Correlate the CEI with other existing career interest inventories to further clarify the inventory's construct validity.
2. Continue to study the relationship of the interest categories to other variables such as race, gender, age, and religion.

3. Sample other subjects of various educational backgrounds and occupational levels.

4. Continue to study the effectiveness and utility of the developmental format of the CEI.

5. Determine the statistical differences, if any, between gender and age and scores in each of the interest categories. Use these differences to develop separate norms for males and females.

6. Continue to examine the interest categories to determine their comprehensiveness with regard to work and leisure.

7. Continue to gather qualitative data about the inventory's format and effectiveness.

8. Determine the effectiveness of the CEI in identifying sustained work and leisure interests for a variety of populations such as the handicapped, American Indians, non-English speaking individuals, and other non-traditional populations.
9. Determine other instruments/scales which could be utilized in conjunction with the CEI to facilitate a comprehensive approach to career development.

10. Continue to research the usefulness of the Career Planning Guide in assisting individuals to explore the interaction between their work and leisure interests throughout the lifespan.

The above recommendations are aimed at ensuring the continuous, ongoing improvement of the inventory and its usefulness in career counseling. The results of this study fill a major gap since it was found that the CEI accurately measures both work and leisure interests throughout the life span. The CEI can be used by career counselors to help clients identify and explore how their work and leisure interests interact to form their career. Finally, the instrument can be used to assist clients in the areas of work counseling and leisure counseling, or in a holistic approach.
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APPENDIX A

Career Exploration Inventory
CAREER EXPLORATION INVENTORY
A guide for exploring work and leisure interests

Name __________________________ Date ______________
Gender: Male ______ Female ______ Age ______________
Social Security Number ______________________

PART I -- DIRECTIONS

This interest inventory will help you to identify various work and leisure interests. In this booklet are listed 120 interest activities. Read each statement carefully, and circle the answer or answers that best describe how you feel about the item from among the following choices:

If you liked to engage in the activity in the past 5-10 years, circle: P for the past. Example: Plant a garden P C F

If you currently like to engage in the activity, circle: C for currently. Example: Make speeches P C F

If you think you will like to engage in the activity 5-10 years in the future, circle: F for future. Example: Treat sick animals P C F

If you have absolutely no interest in the activity, do not circle any of the items. Example: Operate office machines P C F

You may circle one, two, and three choices for each item or leave it blank. Answer each item according to how you feel about it. Now turn to the first item on page one of your booklet and begin.
Circle your answers in Column 1

1. Read popular mechanics magazines
2. Repair damage to an automobile body
3. Watch animals play
4. Treat sick animals
5. Plant and grow flowers or trees
6. Care for lawns and shrubs
7. Read science magazines
8. Use instruments to study and predict earthquakes
9. Visit laboratories where new medicines are developed
10. Perform laboratory experiments
11. Sell paintings you created
12. Perform in dramatic activities
13. Write a novel or articles for publication
14. Take journalism courses
15. Work with a group on a project
16. Help others make career decisions
17. Assist in athletic events
18. Exercise and train for sports competitions
19. Mix drinks for people
20. Help others with their personal appearance
21. Argue a point-of-view or debate with others
22. Advise people about legal matters
23. Watch presentations about fire prevention
24. Watch programs about law enforcement
25. Plan and direct an educational program
26. Take a course in administration and leadership
27. Operate adding or duplicating machines
28. Check typewritten material for errors
29. Fill out income tax forms
30. Prepare a basic financial budget

Go On To The Next Page
Circle your answers in Column 2

31. Operate a machine to drill holes
32. Make electrical repairs
33. Care for small animals
34. Train animals
35. Study about plants
36. Visit botanical gardens
37. Conduct scientific experiments
38. Perform chemical experiments
39. Care for people in a hospital setting
40. Examine specimens under a microscope
41. Perform for others
42. Attend plays or musicals
43. Read novels by famous authors
44. Study creative writing
45. Have others come to you for help
46. Develop personal relationships
47. Read stories or magazine articles
48. Participate in sports activities
49. Cook for other people
50. Cut or set hair
51. Be a persuasive speaker
52. Lobby for a political cause
53. Plan public safety programs
54. Guard property against theft or vandalism
55. Have leadership ability
56. Serve as an officer of a group
57. Study office practices
58. Operate office machines
59. Set up a record system
60. Keep credits and debits for an organization

Go on to the Next Page
Circle your answers to Column 3

61. Build things
62. Solve mechanical problems
63. Keep pets for others
64. Bathe and groom pets
65. Plant a garden
66. Read nature magazines
67. Study the constellations of the stars
68. Read chemistry or physics articles
69. Research new cures for diseases
70. Studying the properties of a disease
71. Play a musical instrument
72. Do free-hand drawings and sketches
73. Write newspaper articles
74. Study literature
75. Do social work
76. Help people with personal problems
77. Read articles or stories about sports
78. Referee sporting events
79. Study home economics
80. Clean house
81. Promote an idea or product
82. Influence others' opinions
83. Visit a fire station
84. Fight fires
85. Lead a group in accomplishing a goal
86. Direct others
87. File letters and forms
88. Classify and code records for filing
89. Predict financial trends
90. Analyze financial records

Go On To The Next Page
<table>
<thead>
<tr>
<th>No.</th>
<th>Task Description</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
<th>TOTALS</th>
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<tbody>
<tr>
<td>91.</td>
<td>Have mechanical aptitude</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>92.</td>
<td>Fix mechanical things</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>93.</td>
<td>Breed and raise animals</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>94.</td>
<td>Exercise pets</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>95.</td>
<td>Grow flowers or trees</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>96.</td>
<td>Visit a greenhouse</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>97.</td>
<td>Visit science museums</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>98.</td>
<td>Study chemistry</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>99.</td>
<td>Take biology courses</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>100.</td>
<td>Study health</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>101.</td>
<td>Sing in public</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>102.</td>
<td>Take artistic pictures</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>103.</td>
<td>Create poetry</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>104.</td>
<td>Attend exercise classes</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>105.</td>
<td>Teach others</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>106.</td>
<td>Care for children</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>107.</td>
<td>Learn about sports</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>108.</td>
<td>Watch sports events</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>109.</td>
<td>Bake a cake</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>110.</td>
<td>Try new cooking recipes</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>111.</td>
<td>Sell something</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>112.</td>
<td>Make speeches</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>113.</td>
<td>Enforce laws</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>114.</td>
<td>Study new enforcement</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
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<tr>
<td>115.</td>
<td>Supervise others</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>116.</td>
<td>Be a leader</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>117.</td>
<td>Study typing</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>118.</td>
<td>Type personal letters</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>119.</td>
<td>Look up numerical data</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
<tr>
<td>120.</td>
<td>Add columns of figures</td>
<td>P</td>
<td>C</td>
<td>F</td>
<td>P</td>
<td>CF</td>
</tr>
</tbody>
</table>

Turn to the Next Page for Scoring Directions
PART II -- SCORING DIRECTIONS

1. Moving across each of the 30 rows on page 4, count all letters (P, M, and F) that you circled in that row, and write the total for the number of circled items in the space provided to the right of the last F in that row. Repeat this procedure for each of the remaining rows.

2. Add the numbers for the first set of pairs (1A + 1B) and write this number in the first blank provided under the column titled "Totals." Repeat this procedure for the remaining blanks in the "Totals" column.

<table>
<thead>
<tr>
<th>PCE</th>
<th>PCF</th>
<th>PCE</th>
<th>PCF</th>
<th>6</th>
<th>1A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCF</td>
<td>PCF</td>
<td>PCF</td>
<td>5</td>
<td>1B</td>
</tr>
</tbody>
</table>

3. Transfer each of the total scores from page 4 to the Totals column for the Interest Profile on page 6 and place an X in the corresponding column. For example, if you had a total of 11 for the Mechanical area, you would first write a 11 in the Totals column, then place an X in that block under the 6-11 column.

<table>
<thead>
<tr>
<th>INTEREST CATEGORIES</th>
<th>TOTALS</th>
<th>LOW 0-5</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MECHANICAL -- Operating machines for mass production and using tools to build and repair things.</td>
<td>11</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Part III -- UNDERSTANDING YOUR INTEREST PROFILE

For your Interest Profile on page 6, the average raw score for each interest category is 12. Scores equal to or greater than 12 indicate that you have more interest than the average adult. Scores lower than 12 indicate less interest. Generally, most adults score between 6 and 17, and this is the average range. To help you better understand your scores, brief descriptions are given for each of the 15 interest categories. Interest areas in which you have the highest raw scores represent areas in which you have continuing interest and will probably find the most enjoyable work and leisure activities. After identifying areas of interest you may refer to the Career Exploration Guide on pages 7, 8, and 9 to identify possible occupations and leisure activities.

Some possible work/leisure patterns that may be identified from the results of the Career Exploration Inventory are:

1. High interest in one area to the exclusion of all others may indicate that you will find satisfaction in that area in both work and leisure. For example, a raw score of 23 in mechanical and low scores in the other interest categories may indicate that the person would be most satisfied in mechanical types of jobs such as a pipe fitter or carpenter, and most satisfied engaging in mechanical types of leisure activities such as woodworking or fixing appliances.

2. Several high scores may indicate that you will find satisfaction in a variety of the work and leisure combinations. For example, high scores in mechanical and plants may indicate that the person will find work satisfaction in mechanical activities and leisure satisfaction in activities dealing with plants, or the opposite may be true.

3. If you do not score high in any areas, it may indicate that you have varied interests or there are not many areas of interest to you at this time, and may want to explore the areas in which you did score the highest. Keep in mind that the results of the Career Exploration Inventory are not for matching people with jobs and leisure activities, but for assisting people in the exploration of work and leisure interests.
## INTEREST PROFILE

<table>
<thead>
<tr>
<th>INTEREST CATEGORIES</th>
<th>TOTALS</th>
<th>LOW 0-5</th>
<th>LOW 6-11</th>
<th>HIGH 12-17</th>
<th>HIGH 18-24</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MECHANICAL -- Operating machines for mass production and using tools to build and repair things.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ANIMAL CARE -- Raising, feeding, grooming, breeding, training, and caring for animals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. PLANTS -- Cultivating and gathering of crops and the growing and tending of plants.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PHYSICAL SCIENCES -- Conducting research and collecting data about the natural world.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. LIFE SCIENCES -- Investigating, researching, and applying the biological sciences and medicine.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. ARTISTIC -- Expressing one's ideas and feelings through art such as dancing and painting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. LITERARY ARTS -- Expressing one's ideas and feelings through the creative use of words.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. SOCIAL SERVICE -- Helping people with physical, vocational, spiritual, and psychological concerns.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PHYSICAL PERFORMING -- Using physical skills in athletics, sports, travel, and adventure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. PERSONAL SERVICE -- Providing a variety of services to people, usually on a one-to-one basis.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. PERSUADING/INFLUENCING -- Influencing others using publicity or powers of persuasion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. PROTECTING -- Enforcing of laws, regulations, and policies to protect people and property.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. LEADING -- Directing, supervising and/or managing others to accomplish a goal.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. CLERICAL -- Typing, operating office machines, and other activities involving attention to details.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. FINANCIAL DETAIL -- Working with numbers and performing statistical analyses.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Part IV -- Career Exploration Guide

To assist you in the exploration of various work and leisure activities related to your scores in the 15 interest categories, information is provided about sample occupations, leisure activities involving self, family, and community service; and related educational courses.

<table>
<thead>
<tr>
<th>CEI</th>
<th>Work</th>
<th>Leisure</th>
<th>Educational Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interest Categories</strong></td>
<td><strong>Possible Occupations</strong></td>
<td><strong>Self/Family &amp; Community</strong></td>
<td><strong>Courses</strong></td>
</tr>
<tr>
<td>1. <strong>Mechanical</strong></td>
<td>Engineer, drafter, plumber, cable splicer, mechanic, welder, surveyor, carpenter, machinist, roofer, janitor, electrician, heavy equipment operator, pipe fitter, bricklayer, stonemason, bookbinder, painter, sewing machine operator, t.v. repair, millworker</td>
<td>Fixing appliances, woodworking, drawing plans for houses, house construction/repairs, painting, repairing and customizing cars, metal working, welding, building models, reconstructing historical buildings</td>
<td>Auto Mechanics Engineering Mechanical Drawing Electronics Industrial Arts Shops/Crafts Welding</td>
</tr>
<tr>
<td>2. <strong>Animal Care</strong></td>
<td>Game warden, zoo director, pet groomer, animal trainer, wildlife control agent, dog catcher, veterinary assistant, fish farmer, fish hatchery manager, zoologist livestock rancher, dairy farm manager animal caretaker, stable attendant, veterinarian, wildlife biologist</td>
<td>Bird watching, horse racing, zoo volunteer, SPCA volunteer, rodeo events, ranching, riding horses, showing dogs, rifting pigeons, keeping tropical fish, visiting a zoo, playing with a dog or cat, fishing, hunting, animal clinic volunteer</td>
<td>Wildlife Technology Zoology Animal Sciences Veterinary Sciences Biology Textbook Microbiology</td>
</tr>
<tr>
<td>3. <strong>Plants</strong></td>
<td>Landscape gardener, horticulturist, farmer, park naturalist, forester, agriculture scientist, botanist, tree surgeon, forest ecologist, park ranger, range manager, lawn service worker, logger, gardener, soil conservationist, grounds keeper</td>
<td>Gardening, Four-H activities, lawn care, exploring caves, scuba diving, nature lectures, scounting, hiking, conservation clubs, nature walks, treasure seeking, wilderness guide, growing house plants, camping, visiting state parks</td>
<td>Biology Forestry Soil Science Botany Landscaping Horticulture Agriculture</td>
</tr>
<tr>
<td>4. <strong>Physical Sciences</strong></td>
<td>Astronomer, geologist, meteorologist, chemist, physicist, seismologist, mathematician, geographer, hydrologist, environmental analyst, metallurgist, microbiologist, paleontologist, geophysicist, physical science teacher, archaeologist</td>
<td>Astronomy, science fair, weather watching, visiting science museums, collecting rocks, playing chess, visiting planetariums, rocket club, mathematical puzzles, science club, archaeological expeditions</td>
<td>Astronomy Earth Science Physics Geology Meteorology Archaeology</td>
</tr>
<tr>
<td>5. <strong>Life Sciences</strong></td>
<td>Biologist, dentist, microbiologist, pharmacist, physician, optometrist, chiropractor, dental hygienist, speech pathologist, physical therapist, nurse aide, medical laboratory assistant, biomedical engineer, anesthesiologist, radiologist</td>
<td>Reading about evolution, conducting plant experiments, reading medical journals, studying anatomy, genetics, health care volunteer, attend medical conventions, emergency medical technician, CPR instructor, health education presentations</td>
<td>Biology Chemistry Anatomy Pharmacology Anesthesiology Radiology Biochemistry</td>
</tr>
</tbody>
</table>
**PART IV -- CAREER EXPLORATION GUIDE**

To assist you in the exploration of various work and leisure activities related to your scores in the 15 interest categories, information is provided about sample occupations; leisure activities involving self, family, and community service; and related educational courses.

<table>
<thead>
<tr>
<th>INTEREST CATEGORIES</th>
<th>WORK</th>
<th>LEISURE</th>
<th>EDUCATIONAL COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. MECHANICAL</strong></td>
<td><strong>ENGINEER, DRAFTER, PLUMBER, CABIN SPINNER, MECHANIC, WELDER, SURVEYOR, CARPENTER, MACHINIST, ROOFER, JANITOR, ELECTRICIAN, HEAVY EQUIPMENT OPERATOR, PIPE FITTER, BRICKLAYER, STONE Mason, BOOKBINDER, PAINTER, SEWING MACHINE OPERATOR, F.I.V. REPAIR, MILLRIGHT</strong></td>
<td><strong>FLYING APPLIANCES, WOODWORKING, DRAWING PLANS FOR HOUSES, HOUSE CONSTRUCTION/REPAIRS, PAINTING, REPAIRING AND CUSTOMIZING CARS, METAL WORKING, WELDING, BUILDING MODELS, RECONSTRUCTING HISTORICAL BUILDINGS</strong></td>
<td><strong>AUTO MECHANICS ENGINEERING MECHANICAL DRAWING ELECTRONICS INDUSTRIAL ARTS SHOPS/CRAFTS WELDING</strong></td>
</tr>
<tr>
<td><strong>2. ANIMAL CARE</strong></td>
<td><strong>GAME WARDEN, ZOO DIRECTOR, PET GROOMER, ANIMAL TRAINER, WILDLIFE CONTROL AGENT, DOG SITTER, VETERINARY ASSISTANT, FARMER, ZOO HATCHERY MANAGER, ZOOLOGIST LIVESTOCK RANCHER, DAIRY FARM MANAGER, ANIMAL CARETAKER, STABLE ATTENDANT, VETERINARIAN, WILDLIFE BIOLOGIST</strong></td>
<td><strong>BIRD WATCHING, HORSE RACING, ZOO VOLUNTEER, SPCA VOLUNTEER, RODEO EVENTS, RANCHING, RIDING HORSES, SHOVELING DIRT, RAISING PIGS, KEEPING TROPICAL FISH, VISITING A ZOO, PLAYING WITH A DOG OR CAT, FISHING, HUNTING, ANIMAL CLINIC VOLUNTEER</strong></td>
<td><strong>WILDLIFE TECHNOLOGY ZOOLOGY ANIMAL SCIENCES VETERINARY SCIENCES GEOLOGY ZOOLOGY MICROBIOLOGY</strong></td>
</tr>
<tr>
<td><strong>3. PLANTS</strong></td>
<td><strong>LANDSCAPE GARDENER, HORTICULTURIST, FARMER, PARK NATURALIST, FORESTER, AGRICULTURE SCIENTIST, BOTANIST, TREE SURGEON, FOREST ECOLOGIST, PARK Ranger, Range Manager, Farm Service Worker, Logger, Yard Worker, Soil Conservationist, Grounds Keeper</strong></td>
<td><strong>GARDENING, FOUR-H ACTIVITIES, LAWN CARE, EXPLORE SAVANNAH, SOBA DRIVING, NATURE TRAILS, SQUATCHING, HIKING, CONSERVATION CLUBS, NATURE WALKS, TREASURE HUNTING, WILDERNESS GUIDE, GROWING HOUSEPLANTS, CAMPING, VISITING STATE PARKS</strong></td>
<td><strong>BIOLOGY FORESTRY SOIL SCIENCE BOTANY LANDSCAPING HORTICULTURE AGRICULTURE</strong></td>
</tr>
<tr>
<td><strong>4. PHYSICAL SCIENCES</strong></td>
<td><strong>ASTRONOMER, GEOLOGIST, METEOROLOGIST, CHEMIST, PHYSICIST, SEISMOLOGIST, MATHEMATICIAN, GEOGRAPHER, HYDROLOGIST, ENVIRONMENTAL ANALYST, METALLURGIST, MINERALOGIST, PALEONTOLOGIST, GEOGRAPHIST, PHYSICAL SCIENCE TEACHER, ARCHAEOLOGIST</strong></td>
<td><strong>ASTRONOMY, SCIENCE FAIRS, WEATHER WATCHING, VISITING SCIENCE MUSEUMS, COLLECTING ROCKS, PLAYING CHESS, VISITING PLANETARIUMS, ROCKET CLUB, MATHEMATICAL PUZZLES, SCIENCE CLUB, ARCHAEOLOGICAL EXPEDITIONS</strong></td>
<td><strong>ASTRONOMY EARTH SCIENCE PHYSICS GEOLOGY METEOROLOGY ARCHAEOLOGY</strong></td>
</tr>
<tr>
<td><strong>5. LIFE SCIENCES</strong></td>
<td><strong>BIOLOGIST, DENTIST, MICROBIOLOGIST, PHARMACIST, PHYSICIAN, OPTOMETRIST, CHIROPRACTOR, DENTAL HYGIENIST, SPEECH PATHOLOGIST, PHYSICAL THERAPIST, NURSE AIDE, MEDICAL LABORATORY ASSISTANT, BIO MEDICAL ENGINEER, ANESTHESIOLOGIST, RADIOLOGIST</strong></td>
<td><strong>READING ABOUT EVOLUTION, CONDUCTING PLANT EXPERIMENTS, READING MEDICAL JOURNALS, STUDYING ANATOMY, GENETICS, HEALTH CARE VOLUNTEER, ATTEND MEDICAL CONVENTIONS, EMERGENCY MEDICAL TECHNICIAN, CPR INSTRUCTOR, HEALTH EDUCATION PRESENTATIONS</strong></td>
<td><strong>BIOLOGY CHEMISTRY ANATOMY PHARMACOLOGY ANESTHESIOLOGY RADIOLOGY BIOCHEMISTRY</strong></td>
</tr>
</tbody>
</table>
## Career Exploration Guide

### Interest Categories

<table>
<thead>
<tr>
<th>Interest Categories</th>
<th>Possible Occupations</th>
<th>Self/Family &amp; Community</th>
<th>Educational Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6. ARTISTIC</strong></td>
<td>photographer, commercial artist, model, drama teacher, architect, choreographer, painter, sculptor, musician, director, graphic designer, cartoonist, dancer fashion artist, disc jockey, jeweler, photoengraver, taxidermist, art teacher, composer, singer, music teacher, interior designer, actor/actress</td>
<td>playing a musical instrument, singing, painting, writing songs, sketching, art festivals, needlework, cartooning, attending plays, ceramics, filmmaking family movies, acting, listening to records, performing magic tricks, refinishing furniture, musicals, designing houses, dancing</td>
<td>Art, Crafts Arts, Drama, Graphic Arts, Music, Photography, Modern Dance, Architecture</td>
</tr>
<tr>
<td><strong>7. LITERARY ARTS</strong></td>
<td>copy writer, editor, technical writer, playwright, columnist, novelist, reporter, critic, interpreter, translator, literature instructor, screenwriter, English teacher, editorial assistant, writer: prose/fiction, editorial writer, commentator, poet</td>
<td>writing short stories, writing letters to friends and relatives, reading, book-of-the-month clubs, crossword puzzles, writing poetry, volunteering at a library, literacy volunteer, book reviewer, anagrams</td>
<td>Literature, Journalism, Humanities, English, Languages, Creative Writing</td>
</tr>
<tr>
<td><strong>8. SOCIAL SERVICE</strong></td>
<td>caseworker, counselor, teacher, social worker, teacher's aide, anthropologist, child care worker, sociologist, historian, psychologist, recreation worker, urban planner, principal, university professor, marriage counselor, job analyst, nurse, rehabilitation counselor, clergyman</td>
<td>mental health volunteer, church groups, visiting friends and family, PTA, night clubs, camp counselor, going to parties, United Way volunteer, candy striping, playing board games/cards, dancing, amusement parks, Special Olympics volunteer, learning sign language</td>
<td>Family Studies, Psychology, Sociology, Human Development, Social Work, Education, Religious Studies</td>
</tr>
<tr>
<td><strong>9. PHYSICAL PERFORMING</strong></td>
<td>head coach, professional athlete, cheerleader, recreation leader, sports instructor, athletic trainer, physical education teacher, sports physiologist, sports psychologist, sports scout, health club worker, tour guide, hunting guide</td>
<td>coaching amateur sports, health clubs, canoeing, jogging, watching sports, skiing, traveling abroad, ballooning, cycling, auto racing, gymnastics, soccer, hang gliding, softball, archery, weight lifting, aerobics, swimming</td>
<td>Sports Psychology, Sports Physiology, Physical Education, Leisure Studies, Recreational Admin, Coaching</td>
</tr>
<tr>
<td><strong>10. PERSONAL SERVICE</strong></td>
<td>cook, baker, barber, cosmetologist, flight attendant, waiter/waitress, maid, clerk, bus driver, chauffeur, taxi driver, bellhop, bartender, counter attendant, parking-lot attendant, delivery driver</td>
<td>babysitting, cooking, baking pastries, cake decorating, hosting parties, Meals-on-Wheels volunteer, sewing, concession stand volunteer, community transit volunteer, designated driver program</td>
<td>Home Economics, Food Service, Cosmetology, Dietetics, Textiles/Clothing, Nutrition</td>
</tr>
<tr>
<td><strong>11. PERSUADING/INFLUENCING</strong></td>
<td>auctioneer, advertising agent, fund raiser, insurance agent, wholesale sales rep, demonstrator, pavement, judge, field representative, real estate agent, auto sales worker, travel agent, public relations specialist, lawyer, politician, sales clerk, lobbyist</td>
<td>making political speeches, fund raising, MADD volunteer, attending political conventions, master-of-ceremonies, urban planning, committees, attending auctions, Big Brother/Big Sister volunteer, campaigning for a political candidate</td>
<td>Political Science, Public Relations, Advertising, Law, Speech, Marketing, Retail Management</td>
</tr>
<tr>
<td>INTEREST CATEGORIES</td>
<td>POSSIBLE OCCUPATIONS</td>
<td>SELF/FAMILY &amp; COMMUNITY</td>
<td>EDUCATIONAL COURSES</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------</td>
<td>-------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>12. PROTECTING</td>
<td>Lifeguard, fire fighter, armed services personnel, correctional officer, sheriff, police officer, safety inspector, fire inspector, ski patrol officer, special agent, customs inspector, security guard, food and drug inspector, detective, equal-opportunity representative</td>
<td>Fighting fires, self-defense training, consumer protection groups, reading about law enforcement, war games, collecting firearms, belonging to the American Legion, neighborhood watch groups, civil defense groups</td>
<td>Criminal Justice, Law Enforcement, Fire Science, Political Science, Army ROTC, Phys Ed, Economics</td>
</tr>
<tr>
<td>13. LEADING</td>
<td>Business manager, personnel manager, office manager, funeral director, food service director, school administrator, hospital administrator, retail store manager, program director, educational institution president, library director, airport manager, maintenance supervisor</td>
<td>School board member, chairing social committees, organizing neighborhood activities and community events, coaching, Special Olympics coordinator, directing plays/musicals, managing a political campaign, coordinating disaster aid programs</td>
<td>Management Science, Business Admin, Economics, Labor Relations, International Mgt, Finance, Law/Ethics</td>
</tr>
<tr>
<td>14. CLERICAL</td>
<td>File clerk, librarian, secretary, word processor, travel clerk, mail clerk, shipping clerk, stenographer, cashier, typist, telephone operator, receptionist, medical records clerk, reservations agent, copier operator, keyboard operator, legal assistant, archivist, curator</td>
<td>Library aide, collecting antiques, collecting art objects, secretary of a club or organization, word processing, genealogy, researching historical data, typing for special projects, teaching typing to others, transcription</td>
<td>Secretarial Science, Legal Assistance, Data Processing, Typing, Library Science, Computer Science, Stenography</td>
</tr>
<tr>
<td>15. FINANCIAL DETAIL</td>
<td>Accountant, auditor, appraiser, banker, audit clerk, bookkeeper, statistician, financial analyst, bank teller, purchasing agent, billing clerk, systems analyst, loan officer, credit analyst, controller payroll clerk, securities trader, auditor, programmer, insurance adjuster</td>
<td>Income tax volunteer, mathematical games, studying investments, personal computers, treasurer of a club or organization, statistician for athletic events, financial planning/advising, statistical research, budget planning, predicting financial trends</td>
<td>Bookkeeping, Accounting, Computer Science, Banking, Finance, Insurance, Real Estate</td>
</tr>
</tbody>
</table>
PART V -- CAREER PLANNING GUIDE

Your career is comprised of the interaction of work and leisure over the life span. The Career Planning Guide can help you to think about the interaction of your work and leisure interests from the past and in the present, and help you plan for the future. Use the Career Exploration Guide on pages 7, 8, and 9 when listing some of the occupations, leisure activities, and educational courses you have been or want to engage in.

A. Check the three interest categories from the Interest Profile on Page 6 in which you scored highest:

|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

B. List work and leisure activities in which you:

<table>
<thead>
<tr>
<th></th>
<th>WORK (part-time and full-time employment)</th>
<th>LEISURE (self, family, community service, and education)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PAST</strong> Engaged in during the past 5-10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>5.</td>
<td></td>
</tr>
<tr>
<td><strong>CURRENT</strong> Presently engage in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>5.</td>
<td></td>
</tr>
<tr>
<td><strong>FUTURE</strong> Want to engage in during the next 5-10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B

Career Exploration Inventory Client Observation Sheet
Career Exploration Inventory
Client Observation Sheet

Name ___________________________ Date _______________________
Phone _________________________ Position/Title _________________

1. Were the inventory instructions for administration, scoring and profiling clear?
   Yes _____ No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Do you have any comments or observations about specific items?
   Yes _____ No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. Did the fifteen (15) basic interest scales make sense to you?
   Yes _____ No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

4. Did there seem to be any interest area missed with respect to complete coverage of work and leisure?
   Yes _____ No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

5. Did the inventory help clarify your work and leisure interests?
   Yes _____ No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

6. Did taking the inventory encourage further exploration of work and leisure options?
   Yes _____ No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

7. Is this inventory a useful addition to inventories you have taken in the past? Yes _____
   No _____ Please explain your answer.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
Please feel free to include any additional comments you may have concerning any aspect of the Career Exploration Inventory.
APPENDIX C

Subjects' Comments and Suggestions
The CEI seems to be pretty good, but I find it simplistic and overgeneralizing. The Kuder does the same thing but more thoroughly. The "exploration Guide" was pretty interesting. As a film-maker, I especially object to the drawing/painting bias of "Artistic!"

This inventory gave me a good verification of my work and leisure interests.

The results are very similar to those attained with the Strong-Campbell Interest Inventory. The suggestions for further exploration were helpful.

Helped me to identify my transferable skills.

Seemed the same as other interest inventories I have taken.

I thought it was interesting to look at my interests from a past, present, and future perspective.

Very useful and easy to take.

The results were very true.

Wish I had such a "tool" when I first started working. Really helps in career planning.

It shows that there are other jobs that are of interest to me.

Helped me form a plan for looking for a job -- using carpentry skills developed in my leisure as a source of full-time employment.

Very accurate!

I found I enjoy certain types of activities.

Identifying future career options was interesting.

No interest scale referred to different types of laboring work.

I thought the instrument was too simplistic.

Helped to clarify what I should consider in the future.

Very effective -- pinpointed my two main interests.

I enjoyed the survey.

Interesting to note leisure interests. I have never thought much about my leisure activities. Thanks for the help.

Very good for thinking about different career options.

It helped to verify what I already knew about myself.
I was able to identify work options from my leisure pursuits.

Presented material in a clear, precise manner.

Unclear about the P-C-F format. I have never seen this type of inventory.

Made me think of options I didn't know I had.

Need to add a "Home Repair" section.

Good for initiating dialog with counselor.

I thought it was difficult to reference pages 7-9 while completing page 10 of the inventory.

I wasn't sure if we were supposed to fill out page 10 based on results from earlier sections or in general.

I like the idea of measuring leisure interests.

Very helpful tool.
APPENDIX D

Cover Letter to Participants
Dear Employee Career Development Program (ECDP) participant:

I am writing this letter to ask for your help in improving the career services offered to employees at Virginia Tech. As part of Virginia Tech's Spring 1989 Career/Life Planning Workshop, the aspect of leisure was introduced to the workshop participants as an integral component of their career. Participants were assisted in the identification of leisure, as well as work interests. This identification of work and leisure interests proved to be a valuable experience in the participants' career development, yet was a time consuming process.

In an attempt to enhance the career services provided by our program, I have developed a Career Exploration Inventory (CEI) to assist individuals in the exploration of both work and leisure interests throughout their life. The instrument is self-administered, scored, and interpreted. If you have comments or suggestions about the CEI, please feel free to make notes in the margins or on a separate piece of paper. Not only will the results of the interest inventory be valuable in subsequent programming for the ECDP, but the inventory results may also help you in the career/life planning process. Please indicate if you want the inventory returned to you after the CEI results have been tabulated. In addition, individual or group interpretation sessions may be scheduled by phoning 231-5106 for an appointment.

Please complete the attached interest inventory and return it to me through campus mail by May 19. Thank you for your time and interest in improving the services provided by the Employee Career Development Program at Virginia Tech. Your cooperation is greatly appreciated.

Sincerely,

John Liptak,
Project Manager
VITA

JOHN J. LIPTAK, JR.
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Lexington, KY 40509
Home: (606) 269-0904

EDUCATION:

February, 1990  Doctor of Education, Counselor Education and Student Personnel, Virginia Polytechnic Institute & State University

September, 1986  Master of Science, Community Agency Counseling, California University of Pennsylvania

May, 1982  Bachelor of Arts, Journalism, California University of Pennsylvania

PROFESSIONAL EXPERIENCE:

September, 1989 - Present  Coordinator of Career Development, Berea College, Berea, KY

Responsibilities: Administration of the Berea College Career Development Program, Student Labor Program, Senior Placement Program and related career development programs and services.

June, 1988 - August, 1989  Graduate Assistant, Virginia Polytechnic Institute and State University, Blacksburg, VA

Responsibilities: Manager of an Employee Career Development Program that served over 5000 employees. Supervised and maintained a model Career Resource Center for employees.

December, 1988 - May, 1989  Counselor (Intern), Virginia Polytechnic Institute and State University, Blacksburg, VA

Responsibilities: Provided psychological and career counseling for individuals, couples, and groups in the University Counseling Center.
March, 1984 - September, 1987
Career/Placement Counselor, Private Industry Council of Westmoreland/Fayette, Uniontown, PA
Responsibilities: Provided comprehensive career counseling, vocational assessment, and job search services for disadvantaged, unemployed adults.

September, 1982 - May, 1984
Career Counselor(Intern), California University of Pennsylvania, California, PA
Responsibilities: Assisted the Director in provided career counseling and placement services for undergraduate and graduate students.

CONSULTING EXPERIENCE:
September 1989 - Present
Outplacement Counselor, Considine and Associates, Inc., Lexington, KY
Responsibilities: Providing individual and group outplacement counseling to displaced workers.