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Manual for Research and Exploratory Use in Counseling

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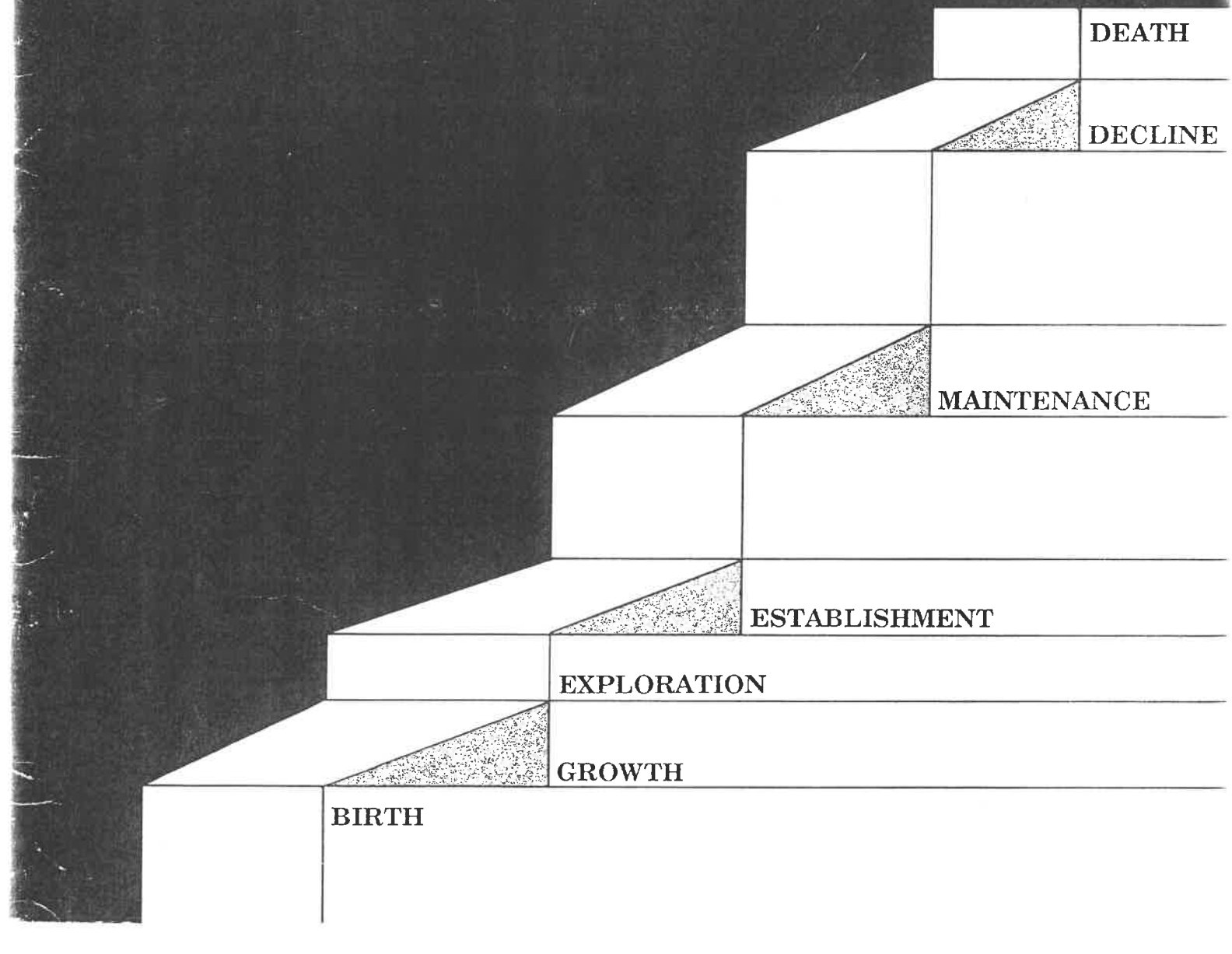

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But interest, help, and contributions were made beyond the confines of upper Manhattan. Mention should be made of the interest of Dr. Leonie Sugarman of Birkbeck College, University of London, and her students. Mme Madeleine Lavoëgie and her staff at the Centre d'Applications Psychologiques in Paris experimented with a French edition. But it was North American work that was most important to this project.

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Contents

CHAPTER ONE

Introduction

Why Assess Career Development in Adults?

There has for some years been widespread interest in the career or vocational adjustment of adults of all ages, a major change since the 1930s and later when psychologists and others noted the neglect of the middle years as important in the study of career development and adjustment. This was true despite the massive reassimilation into the labor force of persons displaced by economic conditions, warfare, and shifts to and from war industries as associated with the Great Depression and the years following both World War II and the Korean War. The focus then was on placement in an immediate job, especially in business, industry, and government.

When the *Career Pattern Study* (CPS) was launched in 1951 (Super et al., 1957), there was little interest in studies of career development from early adolescence to middle or late adulthood. It was only in the late 1950s when the Soviet Union took the lead in space exploration and the United States became worried about the entry of youth into the sciences and engineering and the role of adults working in these same fields that behavioral scientists interested in career development were able to find support for long-term studies of careers in contrast to occupations (Super & Bachrach, 1957; Wolfle, 1954). A classic example of the focus on

occupational choice was the study of Ginzberg, Ginsburg, Axelrad, and Herma (1951), which stopped at the time of entry into the labor force, and this despite the focus on development up to that point (Super, 1953).

The theory and practice of career development relate primarily to vocational choice and adjustment and to the choice and function of individuals in other major life roles (Super, 1980, 1982) from childhood through old age. Among adults, career development generally encompasses such areas as career adaptability upon entering, training for, and working in an occupation, as well as progress and setbacks in the work world, adaptability to changing working conditions, and the handling of career development tasks that culminate in withdrawal from the work force and eventual retirement.

Career Stages and Developmental Tasks

Building on the earlier work of Buhler (1933) and Havighurst (1953), Super (1957, 1980) postulated five stages of career development, four of which pertain to adulthood and the transitional stage of adolescence immediately preceding it.

These four stages, characterized as types of developmental tasks with which people cope as they go through life, are shown in Figure 1 and are described below.

Exploration Stage

Crystallization Society expects individuals to develop ideas as to the field and level of work desired and of occupations that appeal to them, upon which educational, training, and preoccupational decisions are based. These tasks are faced especially at curricular choice points in school and at the university, upon entering the labor market, and when displaced by economic change, illness or injury, or personal growth and change.

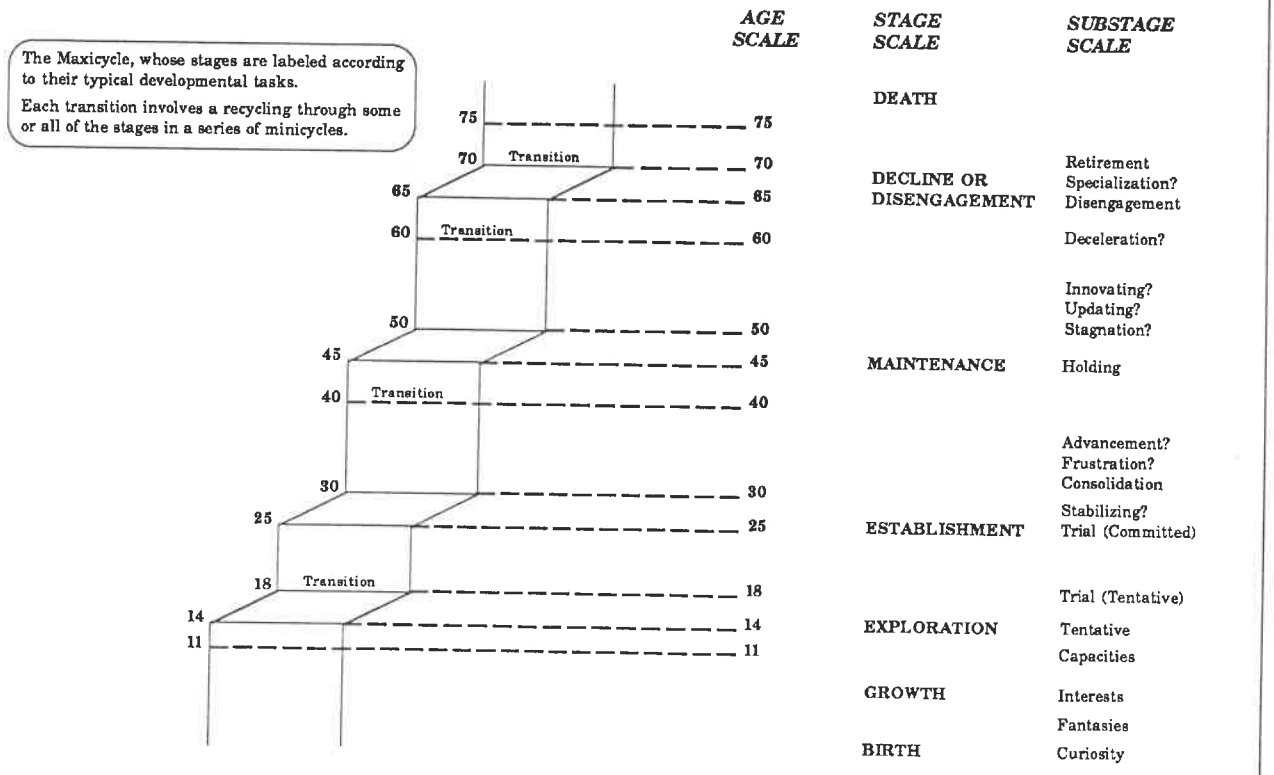
Specification General preferences must become specific as there is pressure to act and to choose an occupation, a specialty, or a job. This is a concern especially among those in their early 20s and again during career transitions and midcareer crises.

Implementation An objective having been chosen, plans must be made and carried out. These are the tasks of the early 20s, of midcareer when the desire for greater self-realization causes career review, and of impending retirement when a different kind of review is called for.

Establishment Stage

Stabilizing In this substage, the expectation that individuals will make and act on plans is followed by the expectation that they will settle down, support themselves and contribute to family support, develop an appropriate lifestyle, make use of abilities and training, and pursue meaningful interests. This

Figure 1. Life Stages and Substages



Based on Super, D.E., *The Psychology of Careers*. New York: Harper & Row, 1957. Modified in light of subsequent research, in "Career and Life Development," Ch. 8 in Brown, D., and Brooks, L., *Career Choice and Development*. San Francisco: Jossey-Bass, 1984.

is common among individuals in their late 20s and early 30s and again after midcareer changes.

Consolidating After having settled down, individuals are commonly concerned with their place in an occupation or in an organization. Security is the objective, although, in unstable careers, it is elusive and sometimes not even desired.

Advancing In middle-class and upper-middle-class circles, there is generally an expectation that individuals will get ahead financially and move to more challenging levels of responsibility and of what is sometimes called "behavior control" or independence. Not everyone wants advancement, but this is a common concern among those in white-collar occupations and who range in age from 25 to 45 or 50.

Maintenance Stage

Holding Having attained a position, individuals are expected to hold onto it if not to improve it. Competition from others, technological change, health

problems, or family demands may threaten it. This is a common concern after the age of 45.

Updating In some fields of work and for some individuals, holding their own is not enough: it may be important to keep abreast of new developments as fields change and as individual goals change. These are tasks more than they are substages.

Innovating In some fields, such as high technology, individuals are expected to break new ground. Some individuals continue to feel the need to explore and establish, to do something different or at least to do it differently, even after they are well established. They are concerned with more than maintenance only.

Disengagement Stage

Decelerating As individuals grow older, they eventually feel the need to reduce the pace or load of work and to taper off before retirement. This is common for individuals in their 60s, and not uncommon for those in their late 50s, especially among those who have some control over their work situations. Some begin to delegate part of their activities to younger persons and become more selective in what they themselves do.

Retirement Planning Planning for retirement is an active concern for individuals planful enough to anticipate retirement or upon finding that they are expected to retire. This is a developmental task that is very clearly related to age and to stage.

Retirement Living Giving up a job or work for pay brings with it the expectations associated with other roles that individuals continue to play in their home life or as involved in hobbies, civic activity, and sometimes study. Functioning as a person of leisure in a world of work brings new concerns; this stage is common for individuals in their late 60s and 70s and is related to the age of mandatory or optional retirement.

Recycling

It is increasingly common for individuals to change their major field of activity, whether in employment or homemaking, after having become established in one field. Such changes are accompanied by a reassessment of life-career plans, by a reexploration of values, interests, and abilities, and by the seeking of what may be different opportunities and outlets. Item 61 of the *Adult Career Concerns Inventory* (ACCI) is addressed to the individual's concern with career change.

Career Maturity, Adaptability, and Adjustment

In the extensive work on career development undertaken within the past 35 years, the terms "career development" and "career maturity" have become well established (American Psychologist, 1984,

p. 274). But it has since been realized that the term "maturity," while applicable to adolescents (Crites, 1978; Super & Thompson, 1979), is not applicable to adults (Super, 1977; Super & Kidd, 1979; Super & Knasel, 1979). Development, although approximating linearity *on the average* during the years of physical and intellectual development, ceases to be linear, fluctuates, and then declines in adulthood. The research of the 1970s (Crites, 1979; Levinson, 1978; Lowenthal, 1975; Super & Knasel, 1979) has amply shown that during the adult years, there is substantial recycling through earlier career development "stages," that is, vocational development tasks typically encountered before entering the world of work are often reencountered later in life with social, economic, and psychological changes. The term "midcareer crisis" has come into common use, perhaps exaggerating the concept and turning normal developmental changes into seeming crises—which indeed they may well become if the normal tasks of foreseeing, preparing for, and coping with gradual changes are not appropriately faced and dealt with.

Crites (1979, 1981) has addressed some aspects of adult adjustment, and Super and Knasel (1979) have proposed a model of adult career adaptability after completing exploratory field studies in England and Canada; however, for lack of funding, they have not attempted to develop a multidimensional, bifactorial adult career adaptability test and inventory comparable to the High School or College and University Forms of the *Career Development Inventory* (CDI; Super, Thompson, Lindeman, Jordaan, & Myers, 1981). Due to the diversity of attitudes and information in particular subpopulations, such an inventory would need to focus on a specific target population, such as electronic engineers or semiskilled blue-collar workers.

The concept of career adaptability, or the attitudes and information needed for readiness to cope with changing work and working conditions, underlies the development, standardization, and validation of the ACCI. A measure of attitudes deemed essential to career and vocational adaptability, it is designed to assess planfulness and foresight in looking and thinking ahead about one's work and working life.

Intended Use and Users

The ACCI is intended for use with adults in the work world who are rethinking their own careers, but also with older adolescents who are about to leave their schooling and are considering entry into an occupation. It is designed for both sexes and is written in American English at the eighth-grade reading level; this level is appropriate also for well-educated adults.

The ACCI should be administered by counselors and personnel workers dealing with such adults who are thinking about their own career choices, changes, and development. The administrator should be familiar with career development theory as described in Brown and Brooks (1984), Gysbers (1984), Hall (1986), Montross and Shinkman (1981), Osipow (1983), Vondracek, Lerner, and Schulen-

berg (1986), and Watts, Super, and Kidd (1981). Brown and Brooks is recommended as a sound introductory symposium text by major theorists; Vondracek, Lerner, and Schulenberg present a more advanced and integrated look at the theory. For those in industrial personnel, Hall is recommended. Osipow (1983, a one-author book) has produced perhaps a more synthesized work than the others, except Vondracek et al. (1986), which is unique in having been authored by developmental rather than vocational psychologists.

CHAPTER TWO

Administration, Scoring, and Scale Description

Administration

The ACCI is designed to be self-administered and self-scored to facilitate use in career development workshops with immediate feedback and in counseling services early in the intake and assessment process. On the average, the inventory takes fifteen to thirty minutes to complete.

The directions on the item sheet, listing the 61 items in two columns, are sufficient. Before self-administration should begin, however, the examiner should briefly explain the purpose of the ACCI and how it will help the individual and/or organization sponsoring the administration. Thus, the examiner should know something about psychological and vocational testing and about the context in which the ACCI is being used. Number 2 pencils and an ACCI item sheet and answer sheet should be provided to each respondent.

Begin by having respondents fill out the "box and bubbles" answer sheet with the requested information in the numbered sequence. Read the directions for Box #2 after the current occupation has been filled in and after sex has been marked in Box #1; use Step #2 as a means of insuring that respondents understand how to properly fill in their names and mark the appropriate bubbles. After this, most adults can proceed with the demographic data on their own; however, one proctor for every 25 examinees in a group should be present to circulate around the room and check that directions are understood and followed.

Next, review the Marking Instructions, Directions, and Occupational Career Fields Form necessary for Box #8. Then ask examinees to use Box #9 to record their answers to the 61 items of the ACCI.

When collecting answer sheets, make sure that they have been completed properly and are scorable; if self-scoring is done in a group program, scoring will need to be monitored.

Scoring

Scoring may be done by hand, as in workshops, courses, and counseling intake settings for immediate use, or by machine when group data are being collected for needs analyses and surveys. Hand scoring can be completed in less than 15 minutes if a calculator or conversion tables are used, such as those provided in Tables 10, 11, and 12 in Appendix B. A conversion table is not necessary when machine scoring is done or when percentiles are provided.

Hand Scoring

Directions for hand scoring are provided on the back of the 61-item sheet, thus providing the counselor and/or client with both a list of items and a profile of scores for use in interpretation. Completed forms appear in Figures 2 and 3 for Jamye Jones and Randall Smith. Note that one must multiply each rating by the appropriate weight at the top of the column ("None" equals 1, etc.), then add the row to obtain the Weighted Sum, and divide by 5 for the Average rating. Confusion can be avoided by not summing the columns to obtain stage ratings; sum them only to arrive at the total Weighted Sum. All entries in the Weighted Sum column are then divided to obtain stage scores. Thus, in Smith's case, the total Exploration score of 59 has been divided by 15 (the constant divisor for *Stages*) to yield an Average stage score of 3.9. This score indicates that Smith has considerable concern for the career development tasks of Exploration: he is clearly recycling through the developmental stages as he rethinks his career status and objectives.

There is no grand total career concerns score, as it would have less meaning than the stage and substage scores, which show focus and degree of concern. It is the profile and substage profile that are most informative. Thus we have seen that Jones' (Figure 2, page 19) concerns are not only primarily in the Exploration stage, but especially in crystallizing and specifying a vocational preference: career-wise, she is still in adolescence, although perhaps somewhat better informed about work due to her age and experience. In contrast, Smith (Figure 3, page 21) is concerned with three life stages as he recycles through Exploration, Establishment, and Maintenance and focuses on specifying what he wants to do now while also seeking to hold his own and to be innovative in his present occupation.

Most ACCI users find that profiling scores is best done as suggested on the Individual Analysis of Career Concerns form on the back of the ACCI item sheet, using capital *X*'s to show the location of stage scores on the 5-point scale and small *x*'s to mark the substage scores. Both stage and substage profiles may then be plotted. Solid lines should be used to indicate stages, and broken lines should be used to indicate substages.

Machine Scoring

Machine scoring is available from the publisher and is recommended when groups of any size are tested, even if hand scoring is done in workshops or courses for immediate feedback. Only the answer sheets need be collected and sent in. Machine scoring is more accurate and also generates statistical analyses of the group data.

Scale Description

The ACCI scales assess the concerns described in Chapter 1, yielding scores for career stages and substages, i.e., for clusters of developmental tasks. Inspection of the items shows that the content is indeed based on statements of concerns about one's career. Item analysis and factor analysis have been used in standard procedure to verify that the items written and selected to assess a given concern do indeed agree with one another and fit into the same scale. See Chapter 7 for a discussion of the ACCI factor analysis.

Exploration Stage

Typically a stage that occurs in late adolescence or early adulthood, it most often ranges from about age 15 to 25 (Super, 1957). Note that these age limits are averages and that wide variations exist in when a given stage is begun or completed. One subject of the *Career Pattern Study*, for example, began exploring when, in elementary school, he observed his father's work as a certified public accountant/lawyer, asking questions about the work over a period of about five years. At age 14, he was sure he wanted to become a lawyer and as an adult, was indeed a most successful one. Another youth began systematically exploring at age 15, reducing his options to six by age 16, three upon entering college, two after his freshman year, and finally to one in his junior year: he attended graduate school as planned, and in his forties is successful and satisfied in his chosen field—a classic case. Still another youth drifted until he was about 28, at which time he found something that appealed to him and that offered him a chance to develop some equity in an occupation and in an organization: he obtained the needed training and subsequent job and is now a successful and satisfied law enforcement officer.

Unlike the successful explorer just described, another man drifted into science teaching because he liked science, did well in it in high school, and was encouraged by his counselor to enter teaching. At age 25, however, although a very successful teacher, he began to question whether perhaps he had made a mistake, having felt attracted to the field of architecture. Asked why he had not looked into architecture earlier, it became clear that he had done no career exploration. Like the lawyer, he just went into what seemed logical without considering other possible interests: he did not survey the world of work from his perspective.

Crystallization concerns and behaviors are most often found early in the Exploration stage or later in life when men or women start to rethink their careers and wonder just what they really want to do, i.e., "Clarifying my ideas about the type of work I would really enjoy." *Specification* relates to "Choosing the best among the occupations I am considering," while *Implementation* relates to "Getting started in my chosen occupational field." Each of these substage scales is constituted by five items; the substages are labeled and operationalized by items 1 through 5, 6 through 10, and 11 through 15 on the answer sheet.

Establishment Stage

The period ranging from about age 25 to about age 45 is typically one of getting established in a career. At the skilled, clerical, managerial, and professional levels, this generally means establishment in an occupation and sometimes even in an organization. At the semiskilled and unskilled levels, however, establishment in a career does not mean permanency or near-permanency in a job or organization: rather, it denotes establishment of a kind of working life that, as shown in sociological studies (Miller & Form, 1951), may mean instability and change. Thus the terms "unstable" and "multiple-trial" careers have come into use (Super, 1957) to denote the nonpermanence of job, occupation, and/or organization. On the profile sheet of the ACCI, the clustered items thus illustrate the meaning of the substage titles *Stabilizing* (items 16–20), *Consolidating* (items 21–24), and *Advancing* (items 26–30). If one were to cover manifest career *behaviors* rather than *concerns,* one would need other categories, such as drifting and floundering (Super, 1957, p. 112); studies of adult career behavior do, in fact, take such categories into account (Super, Kowalski, & Gotkin, 1967).

Maintenance Stage

Typically viewed as ranging from about age 45 to 60 or 65, the duration of this stage varies with individual personalities, physical capacities, and circumstances such as company policies and economic conditions. The label can be somewhat misleading, for not all people in this age group manifest maintenance behavior or have such concerns. While *Holding* one's own (items 31–35), *Updating* one's knowledge and skills (items 36–40), and seeking to *Innovate* (items 41–45) are indeed common concerns and behaviors, these are not substages and do not follow any set sequence as do the categories of career development tasks in other life stages. In fact, just as individuals occasionally seem to skip a stage such as Exploration or a substage such as consolidating, so some individuals appear to be perpetual establishers who are always advancing and innovating until they begin to decelerate and disengage. Franklin Roosevelt and Winston Churchill may be regarded as such individuals; science, technology, history,

and philosophy have seen others who have continued innovating and advancing until retirement or death.

Disengagement Stage

In some of the literature, especially that of gerontology, the term "disengagement" is reserved for one aspect of the stage or process denoted here; the senior author of the ACCI has in writing for counselors and psychologists called this stage that of Decline (Super, 1957, and later, e.g., in Brown & Brooks, 1984, p. 202) for that reason, and because it is the stage at which the decline of some functions does generally become noticeable: tennis players start playing "social doubles," and some individuals begin making more systematic and complete notes of their engagements. But in career development workshops and in preretirement discussions, many persons resent and resist the idea of declining rather than having it viewed as normal and acceptable. Therefore, the term disengagement is used in the ACCI to denote this stage or process. Beginning sometime around age 60, men and women start decelerating: they must walk more slowly in ascending stairs or hills, they need more time to organize their thoughts when responding to unexpected inquiries, and they no longer crowd as much into a day's work as they once did. Although some postpone thoughts of retirement until the actual time, others begin to look ahead to it out of awareness of the need to slow down, taper off, and eventually stop work activity, perhaps changing a way of life. Upon retirement, the tasks of retirement living become important: how to organize one's household and household tasks, what to do with time, and how to accomplish fewer tasks in what no longer seems enough time. Retired persons at age 60 or 70 have been known to say, "I'm as good a worker as I was at age 40, four hours a day for four days a week!" Items 46 to 50 describe deceleration tasks, 51 to 55 retirement planning concerns, and 56 to 60 those of retirement living.

Recycling

Finally, item 61 of the ACCI is differently formatted because it is not part of a scale and is unscored: it is discussed in the inventory, responded to on the answer sheet, and recorded on the profile as a statement of career status: no change anticipated, considering, planning, implementing, and having recently made a change. To facilitate communication, the term "career" is used here in the popular sense, loosely synonymous with job and occupation. It then remains up to the counselor to clarify meaning in an interview. This procedure was established after trying out a special "recycling" scale that was confusing for too many respondents and after realizing, in workshop and counseling use, that recycling shows up in the Exploration and Establishment stages in the form of bimodal and multimodal profiles such as that of Randall Smith (Figure 3, page 21).

CHAPTER THREE

Theoretical Background

Not everyone agrees that "there is nothing as useful as a good theory," but as the aim of theory is to organize what we know to make it useful, this statement should indeed be true. There are good reasons, as writers in Brown and Brooks (1984), Gysbers (1984), Hall (1986), and Osipow (1983) agree, to believe that developmental theories, life stage theories, are in fact good theories. It is with the objective of making the ACCI maximally useful to counselors, counseling psychologists, and other qualified users of psychological instruments that this brief chapter on theoretical background precedes that on the use and interpretation of this inventory.

Career development research and theory began in 1951 with the inception of the *Career Pattern Study* (Super et al., 1957) and with the publication of a basic treatise entitled *Psychology of Careers* (Super, 1957). Concerned with vocational choice and adjustment, it is a process that occurs over time as suggested by the title used by Gribbons and Lohnes (1968) in their monograph *Emerging Careers*. Individuals make not one choice but rather a series of related decisions that results first in the selection of one occupation and job, and then culminates in another job and perhaps another occupation, and so on. Each decision stems in some degree from the first, but also from newly perceived circumstances or qualities in the individual and in the particular life situation.

Vocational or career development theory has led to the concept of career maturity, defined as readiness to make the decisions required by circumstances common to the life stage of adolescence. In the pioneering *Career Pattern Study* and in the later *Career Development Study* of Gribbons and Lohnes, a variety of time-consuming, innovative measures was developed to assess vocational maturity: in the *Career Pattern Study*, twenty measures were attempted and tried out (ranging from agreement between tested aptitudes and occupational aptitude profiles to the extent of planning activity as shown in tape-recorded, semistructured interviews); six of these measures proved conceptually and empirically adequate and provided the basis for the test development work of both Crites (1979) and Super and associates (1981).

The *Career Pattern Study* identified a priori two ways of assessing career maturity, setting the pattern for later work. "Vocational Maturity I" is a normative method that compares behavioral life stage with chronological life stage (Super, 1955; Super et al., 1957) and represents the method of assessment used in the ACCI. "Vocational Maturity II" is also normative, but the norm is based on the knowledge and attitudes of others who are dealing with or expected to deal with the same choice and adjustment tasks. This is the approach used by the age-grade models used by both Super and Crites, stressed particularly in Crites' work. Westbrook and Perry-Hill (1973), like others whose work has so far had less impact, has also used what are essentially age-grade norms appropriate to the school and early college years. The principal difference is that Crites and Westbrook selected items according to grade-level indices of difficulty or response preferences, whereas Super and associates used life stage and developmental task descriptions as bases for item writing, then refined their a priori scales by item analyses.

The conclusion of these studies (Super & Overstreet, 1960; Jordaan & Heyde, 1979; Super et al., 1967) was that in adolescence, planning and preparation for future vocational choices by the acquisition of relevant educational and occupational information were essential for readiness in career development. The *Career Development Inventory* (Super et al., 1981) was the result and provided a method for assessing these many dimensions.

As indicated in the Introduction, the concept of career maturity and the idea of developing a universally applicable adult instrument on the same model was soon abandoned (Super & Kidd, 1979; Super & Knasel, 1979), and the focus in adult work was limited for the time being to career development attitudes. The attitudes were defined, and items were written and selected in such a way that they were not spuriously loaded with the cognitive factor that has contaminated too many so-called attitude scales: they were written on the basis of conceptually adequate career stage and substage definitions and rejected or retained on the basis of internal consistency and degree of independence. Conceptually, the items reflect a concern both with planning, e.g., "clarifying my ideas about the kind of work I would really enjoy," and with adapting, e.g., "adapting to changes introduced since I've become established in my occupation." One may thus predict that scores would agree with scores for general life planning should such an instrument become available, as seems likely soon to happen, and that they would predict adult vocational adjustment in terms of job satisfaction and occupational success, as is indeed the case (see the section on validity). Also, one would expect these scores themselves to be predicted by adolescent career maturity scores, a hypothesis now being tested in an exploratory study.

Using the Model of Developmental Adaptability in Assessment and Counseling

In recent years the senior author has emphasized the importance of a developmental model for career assessment and counseling (Super, 1983; Nevill & Super, 1986a, 1986b) in contrast to a cross-sectional

matching model. However, how the concept of adult career adaptability fits into that model bears examining, together with the notion of whether the developmental model is at all appropriate for adults: much has already been written about the wisdom of using the concept of adaptability instead of maturity in adulthood.

First, the concept of adaptability is logically compatible with that of development, as one becomes more or less adaptable as one matures, depending on prior personality and current experience. Second, development does not stop with adulthood; it simply ceases to be as nearly linear or curvilinear as it was in childhood and adolescence. Development occurs throughout life, sometimes slowly, sometimes rapidly, as physical condition, competence, happiness, and productivity improve or deteriorate.

It therefore seems appropriate to examine the question of the adequacy and expected utility of the concept and of a measure of career adaptability in adult career assessment and counseling. Basic to the measure is a model of adult career adaptability. Then, the measure developed, a model assessment and counseling procedure can be constructed.

A Model of Adult Career Adaptability

The model of adolescent career maturity was first examined, with an eye to changes needed to make it suit adult career development and change. Drawing on the relevant literature and on the combined counseling experience of the authors, Super and Knasel (1979) drafted a tentative model. The next step was to develop an outline for interviews so that data relevant to the model could be collected while obtaining career or work histories from a sample of adults, the work contracted by Canada Employment and Immigration. The focus was on blue-collar workers aged 18 to 35, but the model that was eventually developed covered the whole life span and was made suitable for white-collar, professional, and managerial workers. To this end, other studies, such as the *Career Pattern Study*, were used as well as the work of Levinson (1978), Lowenthal (1975), and the Rapoports (1970, 1971). The model appears in Table 1.

The first two dimensions of the model are attitudinal: Planfulness of a planning approach to life, and Exploration, or willingness to investigate and use information relevant to decision making. The second two dimensions are cognitive: Information and Skills in using information relevant to career adaptation, and Decision Making, or knowledge and use of the principles of making career decisions. The last, Reality Orientation, or knowledge of self and situation and ability to use it, is largely cognitive, but includes more strictly behavioral variables such as coping with career developmental tasks. This model is not considered definitive and will undoubtedly be modified as additional data are collected and analyzed with models in mind.

For reasons developed by Super and Kidd (1979) and cited earlier, the adult assessment instrument focuses strictly on aspects of planfulness and exploration attitudes believed to be basic and essential to career adaptability as well as universally learnable and assessable in a given culture, such as that of North America or Great Britain. Sociological work on the postponement of gratification (Hollingshead, 1949; Kinsey, 1948) had, for example, shown the importance of planning and planful action in career development and in sexual behavior.

In planning the ACCI, then, the focus was narrowed to deal only with Time Perspective, IB in Table 1, the present and future, and with Querying, IIA in Table 1, a component of Exploration. Omitting the past limited the use of biographical data, the content of many other inventories, and was expected to result in greater factorial purity. Omitting the

Table 1: A Model of Adult Career Adaptability

I. Planfulness
- A. Autonomy
  - 1. Educational Planning
  - 2. Occupational Planning
- B. Time Perspective
  - 1. Past: Reflection Upon
    - a. Crystallizing
    - b. Identifying Themes
    - c. Seeing Implications
  - 2. Present: Immediate Future
    - a. Planning
    - b. Implementing
    - c. Stabilizing
  - 3. Intermediate Future
    - a. Consolidating
    - b. Advancing
    - c. Holding
    - d. Innovating
  - 4. Distant Future
    - a. Disengaging
    - b. Preparing to Retire
    - c. Retiring
    - d. Adjusting to Retirement

II. Exploration
- A. Querying
  - 1. Self
    - a. In Time: Life Stage
    - b. In Space: Roles
  - 2. Situation
    - a. In Time: Organization
    - b. In Space: Lifestyle
- B. Resources
  - 1. Awareness
  - 2. Valuation
  - 3. Willingness to Use
- C. Participation and Use
  - 1. In-House
  - 2. Community

III. Information
- A. Life Stages
  - 1. Characteristics and Timing
  - 2. Developmental Tasks
- B. Coping Behaviors
  - 1. Options
  - 2. Appropriateness
- C. Available Options
  - 1. Organizational
  - 2. Job
  - 3. Occupational
- D. Implementation
  - 1. Access
  - 2. Tactics
- E. Probable Outcomes

IV. Decision Making
- A. Principles
  - 1. Knowledge of
  - 2. Valuation of
- B. Applications
  - 1. Use in Past
  - 2. Use at Present

V. Reality Orientation
- A. Self-Knowledge
  - 1. Traits
  - 2. Performance
- B. Realism
  - 1. Resources: Access
  - 2. Prospects
- C. Consistency of Preferences
  - 1. Current
  - 2. Over Time
- D. Crystallization
  - 1. Self-Concepts
  - 2. Goals
- E. Work Experience
  - 1. Coping Behaviors
    - a. Drifting
    - b. Floundering
    - c. Stagnating
    - d. Trial
    - e. Instrumenting
    - f. Stabilizing
    - g. Disengaging

"Resources" and "Participation and Use" components of Exploration was also expected to result in greater factorial purity, while decreasing the cognitive component and overcoming the problem of differences in the adult life experiences of, for example, aerospace engineers in the Northwest and coal miners in Appalachia. Details of the work are described in a later chapter.

Use of Career Adaptability Theory in Assessment and Counseling

Since the model for use of career maturity theory and measures in assessment and counseling had been developed and were in the process of trial (Super, 1983), it seemed appropriate to consider how

Table 2: A Developmental Model for Assessment and Counseling

Step I. The Pre-View
- A. Assembly of Data on Hand
- B. Intake
- C. Preliminary Assessment

Step II. The Depth-View
- A. Role Salience
  - 1. Student
  - 2. Worker
  - 3. Homemaker
  - 4. Citizen
  - 5. Leisurite
- B. Values Sought in Each Role
- C. Career Maturity
  - 1. Planfulness
  - 2. Exploration
  - 3. Decision Making
  - 4. Information
    - a. World of Work
    - b. Preferred Occupation
    - c. Other Life Roles
  - 5. Realism
- D. Self-Concepts
  - 1. Self-Esteem
  - 2. Clarity
  - 3. Harmony
  - 4. Cognitive Complexity
  - 5. Realism
  - 6. Other Metadimensions
- E. Level of Abilities
- F. Fields of Interest

Step III. Assessment of All Data
- A. Review of All Data
- B. Matching & Prediction
  - 1. Individual & Occupations
  - 2. Individual & Other Roles
- C. Planning Counseling

Step IV. Counseling
- A. Joint Review & Discussion
- B. Revision or Acceptance
- C. Assimilation by Counselee
  - 1. Understanding Present & Later Stages
  - 2. Recognizing Self-Concepts
    - a. Accepting the Actual
    - b. Clarifying Actual & Ideal
    - c. Developing Harmony
    - d. Refining Complexity
    - e. Attaining Realism
  - 3. Matching Self & Occupations
  - 4. Understanding Life Roles
  - 5. Exploration for:
    - a. Maturing?
    - b. Focus & Crystallization?
    - c. Depth & Specification?
  - 6. Choice of Training
  - 7. Choice of Job
  - 8. Search for Other Outlets for Self-Realization
- D. Discussion of Actions
  - 1. Planning Action
  - 2. Acting
  - 3. Review of Results

that model might be implemented in work with adult clients. The general model, as modified in 1985, appears in Table 2.

The ACCI is presumably useful at Step II, C1 and C2, in assessing career adaptability in adults. Other components of Step IIC need to be assessed either by the college or high school decision and information scales of the CDI or by a still-to-be-developed adult decision and information test and by interviewing. Role salience and values, self-concepts and interests can all be assessed by existing methods as can abilities. In counseling, the ACCI can be especially helpful at Step IV, C1, in examining the client's life stage orientation; the profile (Figure 2, page 19) depicts this clearly and has proved most helpful as a focus for discussion. Two sample cases are presented in the section on Career Counseling and Planning in Chapter 4.

CHAPTER FOUR

Use and Interpretation

Three major purposes led to the development of the ACCI: 1) career counseling and planning; 2) needs analyses in groups of employees and of adult applicants for counseling; and 3) studies of relationships between adult career adaptability and previous, concurrent, and subsequent socioeconomic and psychological characteristics.

Career Counseling and Planning

In Chapter 3, a model for career assessment and counseling has been presented, which is currently being used in systematic exploration with adult counseling clients at Armstrong State College, Savannah, Georgia, at the University of Georgia at Athens, and in workshops at Virginia Polytechnic Institute at Blacksburg, by the senior author and colleagues and students. During the norming process, scoring and interpretation have been done *ipsatively* (intraindividually—see Note on Terminology in Appendix A), that is, by comparing the individual's score on any one stage or substage with his or her scores on other stages and substages (e.g., "this middle-aged man, who might be expected to be in the Maintenance stage of career development, is actually most concerned with the tasks of Explora-

tion and early Establishment, consistently with his having checked that he 'plans to make a career change and is choosing a field to change to'"). Now, with preliminary norms available and more definitive norms being developed, *normative* interpretation is also possible (e.g., "the 37-year-old woman who has come to the college counseling center for help in considering whether to reenter the labor market after 15 years as a full-time homemaker not only makes higher scores on the specification and implementation substages of Exploration than on other substages, but shows more concern for these developmental tasks than 95 percent of adult women studied, and more than 77 percent of reentry women").

Preliminary norms for men and women are provided in Appendix B. Because of the limited nature of the samples, caution should be used in interpreting them: the demographic data should be kept in mind and their suitability considered for the person or persons being assessed or for whom counseling is being considered. It is necessary to consider how the particular individual differs (if at all) from the sex or age norm group and whether any of the subgroups for which norms are provided are really appropriate for that individual.

Case Study: Whether to Reenter the Labor Force

Jamye Jones is a 37-year-old woman who came to the counseling center for help in deciding whether or not to return to college to prepare for a new field of work. At 23, she had become a full-time homemaker upon the birth of her first child; before that, she was employed as a physician's assistant.

The ACCI indicates that her concerns lie clearly with Exploration, focusing especially on the tasks of crystallizing and specifying a vocational preference and of planning accordingly and acting (Figure 2).

She is not yet seriously concerned with establishing herself in an occupation or with looking ahead to retirement: she evidently feels secure in her home situation and confident of her economic future.

Comparing Jones' ACCI scores with those of her age and sex group as shown in the percentile table for women in Appendix B, one sees that she is, at age 37, in the beginning stages of career development: she stands at the 91st percentile in concern for the tasks of Exploration. One of the counselor's tasks is therefore to help her to develop concrete plans for clarifying her occupational career goals and to take the necessary steps to qualify for and reenter the work force.

Jones' interests, as reflected on the *Strong-Campbell Interest Inventory*, were Social, Conventional, and high in the Teaching Basic Interest Scale. They especially resembled the interests of women who taught elementary school and were slightly less similar to those of special education teachers, speech pathologists, social workers, and secretaries. Her academic comfort score was low, suggesting that college would be viewed only as a means to occupational ends. She appears to be somewhat extraverted.

Jones' *Values Scale* results (Nevill & Super, 1986b) show that she is high on altruism and both casual and intimate social relations. She also values economic security, a good lifestyle, personal development, and achievement. On the *Salience Inventory* (Nevill & Super, 1986a), she tends to rate highly study, work, home and family, and leisure, with leisure being rated slightly lower than the others. Her participation in, commitment to, and value expectations of each of these life roles are harmonious, which suggests a well-balanced life and supporting attitudes and behavior. That her community ratings are a bit low may well be a function of time rather than commitment.

Figure 2. Jamye Jones Sample

Individual Analysis of Career Concerns

Name Jamye Jones Age 37
Compared with Women 35-44 Date 1988

Consulting Psychologists Press, Inc.
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The ACCI can be self-scored to yield a profile based on the clusters of career development tasks of most concern to you. The procedures for self-scoring and profile analysis are:

1. On the Career Concerns Chart below, enter the distribution of ratings for each of the groups of 5 items in each substage. For example, if for items 1 to 5, you marked 1 for two items, 2 for two items, and 3 for one item, you would enter those numbers in the appropriate spaces on the Crystallization line.

2. Then compute the average score for the substage by dividing the weighted sum by the number of items in the group. For the above example, the weighted sum would be 2+4+3=9, divided by 5, equals 1.8. Enter the weighted sum and average in the appropriate columns. Follow the same procedure for each substage and stage.

3. Circle the number of the response you chose for Item 61.

4. Plot your Career Stage and Substage Profile below by marking with a capital *X* on the appropriate line the location of each of the four Stage averages, and with a small *x* each of the Substage averages. Connect the small *x*'s in each Stage to draw the four profiles of your current career concerns. Intraindividual interpretations of average Substage scores are usually more insight-producing than are Stage scores because of present and future orientations and recycling.

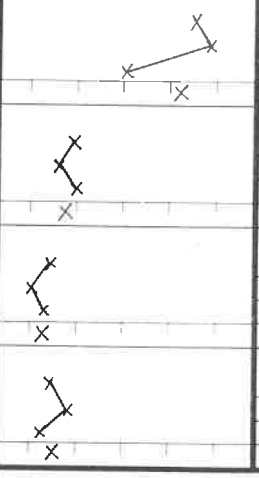
5. Convert the raw scores (5-point ratings) into percentiles with the appropriate table in the Manual or from local norms. Percentiles make it possible to compare one person with a group of relevant people, and average ratings on the 5-point scale help when a person compares him or herself using the profile.

6. Record for each Substage the number of items rated either 4 or 5 to show the clustering of major concerns and to help interpret Stage and Substage averages in the Career Concerns Chart below.

CAREER CONCERNS CHART

Items	Career Concerns	Amount of Current Concern: None 1	Little 2	Some 3	Cons. 4	Great 5	Weighted Sum	Average
A: EXPLORATION STAGE								
1–5	Crystallization			1	1	3	22	4.4
6–10	Specification				1	4	24	4.8
11–15	Implementation		2	1	2		15	3
1–15	TOTAL EXPLORATION						61	4.1
B: ESTABLISHMENT STAGE								
16–20	Stabilizing	2	1	2			10	2
21–25	Consolidating	3	1	1			8	1.6
26–30	Advancing	2	1	2			10	2
16–30	TOTAL ESTABLISHMENT						28	1.9
C: MAINTENANCE STAGE								
31–35	Holding	4		1			7	1.4
36–40	Updating	5					5	1
41–45	Innovating	4	1				6	1.2
31–45	TOTAL MAINTENANCE						18	1.2
D: DISENGAGEMENT STAGE								
46–50	Deceleration	4		1			7	1.4
51–55	Retirement Planning	2	2	1			9	1.8
56–60	Retirement Living	4	1				6	1.2
46–60	TOTAL DISENGAGEMENT						22	1.5
61	CAREER CHANGE STATUS	1	2	(3)	4	5 (Circle Response)		

CAREER STAGE AND SUBSTAGE PROFILE



%-ile	Number of Concerns Rated 4 (Considerable) or 5 (Great)	
	Substages	
	Crystallization	4
	Specification	5
	Implementation	2
91st		11
	Stabilizing	—
	Consolidating	—
	Advancing	—
17th		—
	Holding	—
	Updating	—
	Innovating	—
1st		—
	Deceleration	—
	Retirement Planning	—
	Retirement Living	—
9th		—

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In interviewing, the counselor should ascertain how much she knows about teaching and its various specialties, about community service work, and about medically and educationally related work such as speech pathology. As a homemaker, school schedules might make it easier for her to combine roles than would work in most other contexts.

Case Study: Midcareer "Crisis"

Randall Smith is a 47-year-old accountant in a large corporation. He is a college graduate and is married. His company is a dynamic one in a dynamic field, and he is conscious of changes that may eventually affect his own status. The changes are both technological and organizational. He is therefore rethinking his own career and has sought professional career counseling.

His ACCI scores are shown in Figure 3. Interpreted ipsatively, they are almost equally high on Exploration, Establishment, and Maintenance, and are considerably lower on Disengagement. As is often the case, the substage scores are more revealing and suggest concerns with specifying what he wants to do, stabilizing and advancing, holding his own, and innovating, more than actually carrying out plans, consolidating his position, and updating his present skills and knowledge. He appears to feel secure in his present occupation and job, but is looking ahead to situational changes that may make it wise for him to make some changes himself. He is not experiencing a "career crisis," and may not *if,* as seems the case, he looks ahead, plans wisely, and acts accordingly.

Examining Smith's percentile scores for stage concerns, one sees the same picture as from the rating scale. Not only are his first three stage concerns ipsatively high, but they are also normatively high, particularly those of Exploration (87th) and Maintenance (82nd); his is also moderately high on Establishment (76th). It is interesting to note that he is much less concerned with Disengagement (13th) than are most men in his age group.

Smith was given the *Strong-Campbell Interest Inventory* to elicit a clearer picture of his vocational interests. His academic comfort score was high, suggesting the congeniality of further study, perhaps even on a full-time basis. His introversion score was only moderately high, suggesting that while the reclusive aspects of accounting might be altogether acceptable to him, interacting with others would not be unpleasant. His interests can be characterized as Investigative, Enterprising, and Realistic according to Holland's code, and the occupational scales show that his interests are closely aligned to those of men in the business-analytic and managerial fields. Thus, he may be suitable for work that surpasses strictly accounting work; with training, it may be possible for him to move into middle or upper-level management as one who enjoys the combination of analysis, decision making, and the supervision of plans and projects.

On the *Values Scale*, Smith attaches considerable importance to achievement, personal development, use of abilities, economic rewards and security, lifestyle, and interaction with others. Low on physical activity and prowess and on risk taking, he resembles many other men of his age.

On the *Salience Inventory,* Smith's roles as worker and homemaker, both in his behavior and in his attachments, are important, as is the role of student, although now more affectively than behaviorally (this last could change with circumstances); leisure, too, is of some importance to him.

In summary, Smith appears to be facing a possible midcareer change at an appropriate stage in his career. There is as yet no sign of a crisis and he is looking ahead calmly and sensibly, not assuming that he must discard what he has, not holding onto

Figure 3. Randall Smith Sample

Individual Analysis of Career Concerns

Name Randall Smith Age 47
Compared with men 45 and up Date 1988

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The ACCI can be self-scored to yield a profile based on the clusters of career development tasks of most concern to you. The procedures for self-scoring and profile analysis are:

1. On the Career Concerns Chart below, enter the distribution of ratings for each of the groups of 5 items in each substage. For example, if for items 1 to 5, you marked 1 for two items, 2 for two items, and 3 for one item, you would enter those numbers in the appropriate spaces on the Crystallization line.

2. Then compute the average score for the substage by dividing the weighted sum by the number of items in the group. For the above example, the weighted sum would be 2+4+3=9, divided by 5, equals 1.8. Enter the weighted sum and average in the appropriate columns. Follow the same procedure for each substage and stage.

3. Circle the number of the response you chose for Item 61.

4. Plot your Career Stage and Substage Profile below by marking with a capital *X* on the appropriate line the location of each of the four Stage averages, and with a small *x* each of the Substage averages. Connect the small *x*'s in each Stage to draw the four profiles of your current career concerns. Intraindividual interpretations of average Substage scores are usually more insight-producing than are Stage scores because of present and future orientations and recycling.

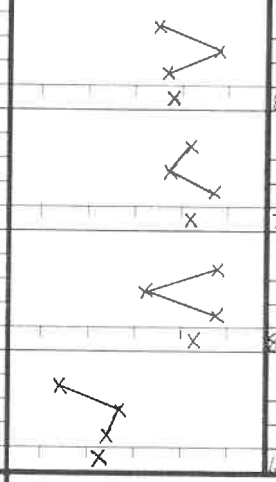
5. Convert the raw scores (5-point ratings) into percentiles with the appropriate table in the Manual or from local norms. Percentiles make it possible to compare one person with a group of relevant people, and average ratings on the 5-point scale help when a person compares him or herself using the profile.

6. Record for each Substage the number of items rated either 4 or 5 to show the clustering of major concerns and to help interpret Stage and Substage averages in the Career Concerns Chart below.

CAREER CONCERNS CHART

Items	Career Concerns	Amount of Current Concern: None 1	Little 2	Some 3	Cons. 4	Great 5	Weighted Sum	Average
A: EXPLORATION STAGE								
1–5	Crystallization		2		2	1	17	3.4
6–10	Specification				1	4	24	4.8
11–15	Implementation		1	1	2	1	18	3.6
1–15	TOTAL EXPLORATION						59	3.9
B: ESTABLISHMENT STAGE								
16–20	Stabilizing			1	2	2	21	4.2
21–25	Consolidating		1	1	2	1	18	3.6
26–30	Advancing				2	3	23	4.6
16–30	TOTAL ESTABLISHMENT						62	4.1
C: MAINTENANCE STAGE								
31–35	Holding				1	4	24	4.8
36–40	Updating		1	3		1	16	3.2
41–45	Innovating				1	4	24	4.8
31–45	TOTAL MAINTENANCE						64	4.3
D: DISENGAGEMENT STAGE								
46–50	Deceleration	3	2				7	1.4
51–55	Retirement Planning		2		3		14	2.8
56–60	Retirement Living	2	1		2		12	2.4
46–60	TOTAL DISENGAGEMENT						33	2.2
61	CAREER CHANGE STATUS	1	(2)	3	4	5 (Circle Response)		

CAREER STAGE AND SUBSTAGE PROFILE



%-ile	Number of Concerns Rated 4 (Considerable) or 5 (Great)	
	Substages	
	Crystallization	3
	Specification	5
	Implementation	3
87th		
	Stabilizing	4
	Consolidating	3
	Advancing	5
76th		
	Holding	5
	Updating	1
	Innovating	5
82nd		
	Deceleration	—
	Retirement Planning	3
	Retirement Living	2
13th		

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it unduly, looking around at other possibilities with professional assistance to see what he might do for his own further development and security. Possibilities for general managerial work are not out of reach; getting the training should prove congenial, and he may be able to express aspects of his personality that do not now have outlets in his accounting work.

Needs Analysis

A second major use of the ACCI is in surveying and evaluating the career development needs of employee, applicant, and client groups. For example, an insurance company interested in furthering the career development of its office employees used the ACCI to help them survey and gain insight into their needs. Another large company used it in surveying the career concerns of field representatives who needed to see the advantages of rotating through middle management positions. In these positions, they would generally earn less than they currently did with their commissions, but the way could be paved for better sales or for advancement to senior-level positions in management. A university counseling center wished to gain more information on its female students who planned to reenter the job market; the ACCI was used to determine how far along they were in decision making, exploration, and planning as they undertook programs of study.

Table 3 shows the career status of nearly 100 professional educators as well as a small number of health and technical professionals who attended a conference on career education at a major state university: most interesting is that the majority of this continuing education group did indeed have continuation of their careers in mind, rather than change.

This group of professionals (Table 3) is a selected sample who, mostly of their own will and interest, attended a day-long conference at their major state university. Most had at least an M.A. degree and were satisfied with their jobs (86%), with their careers to date (84%), and with the prospects for their careers in the future (84%). The participants were 40 years old, plus or minus 10 years, and were considering whether they should change careers, although they had made no plans to do so. Is this the normal stock-taking of midcareer? In view of their general satisfaction, this would seem to be the case.

It is interesting to note that stage concerns do not appear to differ, but then this is an employed group of men and women, rather than a group of established men and reentry women or of women in largely male occupations. That concern is focused on Establishment and Maintenance in a career is to be expected in this age group. Age norms will be informative, while studies discussed later show that expected age differences do exist.

Table 3: Needs Analysis on the ACCI-Careers of 99 Educators

Age	Mean 39.7	SD 10.5		
Employment Status	Full-Time 78%	Part-Time 18%	Unemployed 2%	Retired 2%
Marital Status	Single 14%	Married 81%	Widowed 1%	Separated/ Divorced 3%
Education	Some College 1%	BA or BS 2%	Some Grad Study 15%	MA or Higher 82%
Satisfaction	Very Satisfied	Satisfied	Somewhat Dissatisfied	Dissatisfied
Present Job	32%	54%	12%	2%
Career to Date	39%	45%	15%	1%
Career Prospects	31%	53%	15%	1%
Occupational Field	Soc. Sci./Service 93%	Soc. Sci./Research 2%		Phys./Bio. Sci. 2%

	Total Mean	SD	41 Males	SD	54 Females	SD
Career Stage Status 1. None contemplated 2. Considering Whether 3. Planning and Choosing 4. Chosen and Trying to Start 5. Changed and Settling Down	2.0	1.3	1.8	1.2	2.2	1.4
Career Change Concerns						
Exploration	2.5	0.9	2.5	1.0	2.6	0.9
Establishment	3.0	0.9	3.1	1.0	3.0	0.8
Maintenance	3.1	0.8	3.3	0.8	3.0	0.7
Disengagement	2.7	0.9	2.9	1.0	2.5	0.8

NOTE: Sex differences are not significant. The typical educator in this Conference is considering whether to change careers, but is not planning to. Concerns appear to be centered on Establishment and Maintenance.

Construct and Predictive Validation Studies

Although the validity of the ACCI is discussed later, pertinent here is the fact that, just as there is a need for exploratory studies of the possible contributions of the ACCI to the assessment and counseling of individuals and groups and to the conduct of needs analyses in organizations, so there is a continuing need for validation studies. Validation studies relevant to the ACCI fall into two categories: status difference studies (generally concurrent validation in the literature) and predictive studies, which relate scores obtained at one time to later events and statuses. Both types can be categorized as studies of the construct validity of the test or inventory, for they are based on hypotheses as to what the test measures, what differences it will reveal in groups of known characteristics, and what later events and statuses it will predict.

Status Differences

In the case of the ACCI, the most relevant status differences, theoretically, are those of age or chronological life stage. These are conceptually the same when age is used to denote the approximate boundaries of life stages as in the schemas of Buhler (1933), Levinson (1978), Lowenthal (1975), Super (1957), and others. Although life stage theories vary in important ways, as in the degree to which they are viewed as biologically determined (compare Levinson and Super), they also resemble each other very closely, as when diagrams of stage schemas are drawn to the same scale and superimposed.

Sex differences are another subject for study. In the educator sample of 41 adult men and 54 adult women shown in Table 3, we have seen that sex differences in career concerns appear insignificant. However, in this sample, both groups were comprised of "career teachers" employed in the field for a number of years and who expected to remain there during the years ahead. Would this be true if reentry women were compared to career teachers, male or female? And what of secretaries, bank employees, and real estate salespersons?

Occupational differences are suggested by such a line of inquiry. When, where, and to what degree do they exist? As yet we have little evidence. And these do not exhaust other possibly important criteria that might be studied.

Predictive Studies

What should a measure of career concerns, of the foci of planning and of the degree of planfulness, predict? Probably *not* some of the standard criteria of occupational success, such as supervisory ratings: workers might be very good, or especially good or especially bad, if concerned about their careers, for anxiety can mobilize or it can paralyze.

Success, judged in some ways, may nevertheless be related to career concerns, as Cron and Slocum (1986) have shown when using productivity in life insurance sales as their criterion, and Morrison's (1977) concurrent validation study suggests that adaptability to new job demands may be

predicted. Success shows itself and is judged in many ways, sometimes pertinent to the predictor construct and sometimes not (e.g., in the Navy, intelligence did not predict success in aerial flexible gunnery, but mechanical aptitude and spatial visualization did). If success is defined as stability in a job one has aspired to or as movement from a less desired job or occupation to a more desired one, then the ACCI may well be found to have predictive validity. More data on such matters is needed than is provided by the studies to date and by those now under way. The authors are glad to react to ideas and to receive the results of field studies.

CHAPTER FIVE

Norms: Their Use and Interpretation

Preliminary Norms

The norms published in this Manual are a small, preliminary sample of an ill-defined universe of adults. Adult samples are rarely captive audiences, and many of them resist filling out questionnaires, inventories, and tests.

The current normative sample numbers 373 in all; the number will increase as pertinent data accumulate on additional groups of men and women. Revised norms will periodically be made available, with credit given to those who help collect them, along with descriptive data on their samples. The present and later samples are described in some detail, and norms are given for special identifiable groups that are numerous enough to justify separate reporting, as in the case of the 99 educators in the present sample of 373.

These preliminary norms are given for the 373 adults as a total group, for the 136 men and 225 women, for the 83 under age 24 group (also divided by sex), the 128, 76, and 74 in the respective age groups of 25 to 34, 35 to 44, and 45 and over (also divided by sex). This is done because of the supposed differences in career concerns of men and women, and of young adults and older adults. Other subsamples on whom data are desired, in sufficient numbers to be aggregated so as to provide norms for special groups, are discussed after the description of this sample. No matter whether these provisional norms or those of the future are used, the user must still think also in terms of ipsative (intraindividual) interpretations when examining the results of individual counselees.

Description of the Norm Group

Table 4 gives the data on the sex, age, marital status, education, employment, and satisfaction of the 373 men and women in this preliminary normative group.

The normative group is predominately female when treated as a total group, but with 136 men and 225 women, sex norms are possible (see Table 4). The four groupings by age range in numbers from 74 to 128, making age norms legitimate for some groups such as that for the 25 to 34 age group; the others are suitable only for very tentative use. It should be noted, too, that there is no group for those 60 or 65 years of age or older; these individuals are not numerous enough in this sample and are included in the 45 and over age group: this lack of preretirement, retiring, and retired samples needs to be remedied. The size of all age groups needs to be increased enough to be able to have sound age and sex norms, no doubt breaking them down even further by employment status and education.

The norm group is biased educationally with a disproportionate number of college and professionally educated men and women compared to the general population. Additional samples of blue-collar and lower level white-collar workers and full-time homemakers married to such workers are needed.

The great majority in this group, 241 of 373, are employed full time; 73 are employed part time (some by choice); 30 are unemployed; and 3 are retired. Most are satisfied with their jobs, their careers to date, and their presumptive futures, but 71 (20%) of the respondents (29 did not respond to this question) are dissatisfied with their jobs, and similar numbers are dissatisfied with their careers, past or anticipated future.

Demographic Data: Means and Standard Deviations

ACCI career stage scores for sex and age are shown in Table 5. As a total group, there is more manifest concern for Establishment and Maintenance than for Exploration and Disengagement, a finding theoretically expected given the predominance of subjects in the corresponding life stage of 25 to 34. Sex means support this interpretation. Chronological age groups show little difference in the early ages, but the older groups appear less concerned with Exploration and Establishment and more concerned with Disengagement, suggesting construct validity (the differences have not yet been tested for significance). When broken down into sex groups, the age trends, subject to significance testing, appear to be the same as in the total group.

Career Stage Concerns

For men 24 years of age or less, the dominant career concern, contrary to theory and to CPS data (Super et al., 1967) is Establishment, followed by Maintenance and Exploration. In the next age group, 25 to 34, the dominant concerns are Establishment and Maintenance, followed by Exploration. Between ages 35 to 44, Maintenance and Establishment are

Table 4: Composition of the Norm Group

Group	Total N	Total %	Female N	Female %	Male N	Male %	No Data N	No Data %
Sex	373	100	225	60	136	37	12	3
Age								
-24		22		24		22		
25–34		34		35		34		
35–44		21		22		18		
45+*		20		18		23		
No Data		3		1		3		
Education								
Elementary		0.2		0.4		0		
Some High School		1		2		0		
High School Graduate		11		13		9		
Some College		17		17		18		
College Graduate		12		14		9		
Graduate Work		18		20		15		
Graduate Degree		31		25		41		
No Data		10		8		9		
Marital Status								
Single		37		38		38		
Married		53		52		55		
Widowed		1		1		1		
Divorced		5		7		2		
No Data		4		3		3		
Employment								
Full Time		65		61		72		
Part Time		20		25		12.5		
Unemployed		8		9		8		
Retired		1		0.4		1.5		
No Data		7		5		6		

Satisfaction With	*Present Job*			*Career Progress*			*Future Career*		
	% Total	% Female	% Male	% Total	% Female	% Male	% Total	% Female	% Male
Very Satisfied	18.5	15	25	20	19	24	26	26	28
Satisfied	55	59	50	52	56	46	47	47	47
Some Dissatis.	14	15	14	19	19	20	18.5	21	15
Dissatisfied	5	6	3	2	2	2	0.5	0.4	1
No Data	8	6	8	7	4	8	8	6	9
Total *N*	373	225	136	373	225	136	373	225	126

**NOTE:* *The age group above 55 or 60 was too small to warrant separate treatment: this is essentially a late middle-aged group, not an elderly group.*

Table 4: Composition of the Norm Group (continued)

Occupational Group Preference	% Total	% Female	% Male	Occupational Group Preference	% Total	% Female	% Male
A. Phys. Science: Research	.05	1.0	0.0	K. Business: Sales/Promotion	4.0	4.0	4.0
B. Phys. Science: Applied	4.0	0.0	10.0	L. Business: Office/Clerical	10.0	16.0	0.0
C. Biological & Medical Science	2.0	1.0	3.0	M. Business: Merchandising	3.0	3.0	2.0
D. Social Science: Research	1.0	0.0	2.0	N. Technical: Phys. Science	0.5	0.0	1.5
E. Social Science: Teach./Soc.Svc.	47.0	48.0	45.0	O. Technical: Health Science	4.0	6.0	1.0
F. Writing & Law	2.0	0.0	4.0	P. Technical: Crafts	1.0	0.0	3.0
G. Art & Music	2.0	2.0	1.0	Q. Technical: Outdoor	2.0	1.0	4.0
H. Public Perf.	1.0	1.0	1.5	R. Technical: Mechanical	0.5	0.0	1.5
I. Business: Finan.	2.0	2.0	3.0	S. Personal Svc.	3.0	4.0	1.5
J. Business: Mgmt.	6.0	5.0	7.0	T. Manual/Phys.	2.0	1.0	3.0
				No Data	4.0	4.0	1.5

the principal concerns, followed by Disengagement. Finally, for ages 45 and up, Disengagement and Maintenance are foremost, followed by Establishment. Again, data are needed for the 60-plus age group, preretirement and retirement. Although no significance tests have been done as yet, the career concerns of men and women appear to differ somewhat: the ranking of concerns for women appears to be in the classical or theoretical order: Exploration, Establishment, Maintenance, and Disengagement. It also appears that men, though not significantly, tend to pass through Exploration sooner than women. It is to be noted that among younger women it is Exploration that is highest, suggesting that in the current American culture it takes them longer to decide what they really want to do.

Table 6 shows the mean stage scores for sex and age groups in a different way, with the highest career stage concern nearest the top of the scale, and the others in descending order of importance. The

Table 5: Means and Standard Deviations by Sex, Age, and Stage

Group	*N*	Exploration Mean	Exploration SD	Establishment Mean	Establishment SD	Maintenance Mean	Maintenance SD	Disengagement Mean	Disengagement SD
Sex Total	373	2.99	1.02	3.28	0.88	3.27	0.77	2.86	0.93
Female	225	3.02	1.02	3.24	0.85	3.24	0.79	2.81	0.96
Male	136	2.95	1.04	3.24	0.93	3.33	0.74	2.93	0.92
Age									
-24	83	3.48	0.77	3.48	0.79	3.37	0.79	2.74	0.90
25–34	128	3.16	0.95	3.38	0.79	3.32	0.75	2.60	0.85
35–44	76	2.70	0.97	3.10	0.92	3.14	0.78	2.84	0.94
45+	74	2.41	1.09	3.05	1.05	3.21	0.88	3.29	0.85
Females									
Age									
-24	53	3.54	0.79	3.38	0.78	3.55	0.75	2.75	1.01
25–34	78	3.13	1.01	3.45	0.78	3.35	0.75	2.75	1.01
35–44	50	2.56	0.98	2.85	0.89	2.90	0.72	2.62	0.92
45+	41	2.75	1.01	3.18	0.91	3.24	0.82	3.36	0.81
Males									
Age									
-24	30	3.17	0.75	3.65	0.79	3.42	0.59	2.73	0.88
25–34	46	3.18	0.84	3.23	0.77	3.21	0.65	2.65	0.81
35–44	25	2.96	0.94	3.59	0.80	3.60	0.69	3.23	0.89
45+	31	2.04	1.08	2.93	1.21	3.19	0.21	3.21	0.93

same general conclusions can be drawn from this table as from Table 5: theory is supported by the normative data, except that men under 25 years of age appear more concerned with Establishment than with Exploration, and that Disengagement is more of a concern in the 45 and older age group than one would expect, were it not for the presence of some older men and women in this group. That Exploration is of some importance in the 25 to 34 age group for both sexes is perhaps more in line with current theory and with earlier CPS findings than one might at first think: like the law enforcement officer mentioned earlier, many keep on exploring (or floundering) late in their 20s and on into their 30s.

The Norms: Raw Scores to Percentiles by Age and Sex

Tables 10, 11, and 12 in Appendix B present percentile norms for the total group, for males, and for females, by age group, together with their numbers, medians, means, and standard deviations. Raw scores are in the left-hand column, and percentiles are shown for each stage or cluster of career concerns in the columns to the right, by age and by stage. Thus, a person aged 23 with a raw score of 3.5 on the Exploration scale has a percentile of 45, about average on this concern for this

Table 6: Relative Importance of Stage Concerns by Age Group

Females				
Age	24 & below	25–34	35–44	45 & above
N	53	78	71	71
Rank & Mean				
1	Exploration 3.5	Establishment 3.4	Maintenance 2.9	Disengagement 3.3
2	Establishment & Maintenance 3.3	Maintenance 3.3	Establishment 2.8	Maintenance 3.2
3		Exploration 3.1	Disengagement 2.6	Establishment 3.1
4	Disengagement 2.7	Disengagement 2.6	Exploration 2.5	Exploration 2.7
Males				
Age	24 & below	25–34	35–44	45 & above
N	30	46	25	31
Rank & Mean				
1	Establishment 3.6	Establishment & Maintenance 3.2	Maintenance 3.6	Maintenance & Disengagement 3.2
2	Maintenance 3.4		Establishment 3.5	
3	Exploration 3.3	Exploration 3.1	Disengagement 3.2	Establishment 2.9
4	Disengagement 2.7	Disengagement 2.6	Exploration 2.9	Exploration 2.0

age. Table 12, however, shows that if this person were a male, the percentile would be 50, and if a female, the percentile would be 42 (Table 11), still average although somewhat lower in absolute terms. That a woman aged 35 to 44 with a similar raw score would be at the 86th percentile appears to be evidence of construct validity, for one would expect a person in the higher age group to be less concerned with exploratory tasks than would a person in the lower age bracket.

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4	Disengagement 2.7	Disengagement 2.6	Exploration 2.5	Exploration 2.7
Males				
Age	24 & below	25–34	35–44	45 & above
N	30	46	25	31
Rank & Mean				
1	Establishment 3.6	Establishment & Maintenance 3.2	Maintenance 3.6	Maintenance & Disengagement 3.2
2	Maintenance 3.4		Establishment 3.5	
3	Exploration 3.3	Exploration 3.1	Disengagement 3.2	Establishment 2.9
4	Disengagement 2.7	Disengagement 2.6	Exploration 2.9	Exploration 2.0

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The Need for Additional Norms

The present norms are provisional only. They are based on a group of men and women sufficiently large and diverse to have some meaning, to enable a counselor to see how an individual compares to other men and women of various statuses. But the general population sample needs to be larger to better represent the age group under 25, the 35 to 44 age group, the 45-plus age group, and especially the preretirement and retiring group. We also need more data on mature women entering the labor market for the first time or reentering after some years of full-time homemaking and community activities. We need data on the unemployed, both short-term and long-term unemployed, and we need norms on the economically handicapped, physically handicapped, and other special groups, such as blue-collar, white-collar, and managerial. There is much norming to be done, and the authors will welcome the contributions of data from others collected in studies of their own.

What Kinds of Norms Should Be Used?

The most useful norms for some years to come may be local norms provided when groups of 100 or more answer sheets are machine scored. Such information can be sent to the authors care of Consulting Psychologists Press.

Using the ACCI Normatively and Ipsatively

As the ACCI is a self-descriptive instrument that reveals the pattern of an individual's career concerns, its interpretation can be both normative and ipsative (see Appendix A for a note on the meanings of the term *ipsative*), comparing the individual with others or with him or herself. This can be done for each stage and substage. But only when norms are used is it possible to compare the individual with others of the same age group and sex. These comparisons are possible now, but, in time, comparisons with various occupational and employment-status groups will be possible. Conversions from raw scores (self-ratings on a 5-point scale) are made possible by Tables 10, 11, and 12 in Appendix B.

It should be kept in mind that in an inventory such as this, unlike in an achievement or aptitude test, a high percentile or self-rating is not necessarily better than a low percentile for the person in question. A high percentile for Exploration, the 91st in Jamye Jones' case (Figure 2, page 19), simply tells us that she is more concerned with finding out what to prepare for or seek in the way of work than are most women in her age group (whether in paid employment or not); that her Establishment percentile is at the 17th tells us, normatively, that she is much less concerned with getting started and settled than are most women in her age group. Ipsatively, both the percentiles (91st and 17th) and the 5-point

Likert rating scale indicate that Jones is at present much more concerned with finding out what field to enter than she is with getting started and settling down in an occupation.

In Randall Smith's case (Figure 3, page 21), the *normative* question might be, "Compared to most men of your age, you seem to be more concerned with finding out what to do and with holding on to what you have, and, at the same time, rather more concerned with getting well established in what you are doing. Can you tell me more about why your *general* level of career concern, rather than retirement, is so much higher than that of most men?" Ipsatively, on the basis of either the percentiles or the rating scales, a counselor might ask, "Why is it that you, an accountant in a secure and well-paid job, are concerned not only with advancing in your field, but are even more concerned with looking into other work, when compared to men your age? And why is it that, when looking at the absolute strength of each of these concerns in your own profile of self-ratings, you are at least as much concerned with specifying which occupation to change to as you are with staying in your present occupation?"

As additional norms accumulate, other comparisons, e.g., with people in the same occupation, industry, or educational level, will become possible. Local norms, when groups of 100 or more are tested, will also prove useful. Finally, ipsative or intraindividual comparisons of the 5-point Likert self-ratings will always be as useful as they are now.

CHAPTER SIX

Development of the ACCI

The original form of the ACCI was developed by Robin S. Zelkowitz at the suggestion of Albert S. Thompson, under the supervision of the senior author and with the collaboration of Jean Pierre Jordaan, as part of the *Career Pattern Study*'s follow-up of its 9th grade boys at about the age of 36 (Zelkowitz, 1974). It went through several revisions, some part of Zelkowitz's dissertation, and others resulting from later work by the authors and by various users who shared the results of their work, particularly Drs. Peter Cairo of Teachers College, Columbia University, Douglas T. Hall of Boston University, and Mark Savickas of the Medical College of the Universities of Northeastern Ohio (unpublished studies).

In the CPS form (Zelkowitz, 1974), there were first 11 substage scales of five items each, soon reduced to four items each as a result of item analysis. This 44-item version established the usefulness of the method and yielded evidence of the concurrent validity of the instrument: expected differences at age 36 were found that agreed with parental socio-economic level (SES), tested intelligence, S's own occupational level at 36, adjusted career establishment, career satisfaction, and job satisfaction.

In other studies, abbreviated forms were used for special purposes. Thus Poduska (1975) used only the Exploration items in studying college students, and Card, Armstrong, and Goodstadt (1975) used a 24-item form with 12 items each from the Exploration and Establishment scales in a study of ROTC cadets and junior army officers: in both instances, the ages and life stages of the subjects, the time available for testing, and acceptable levels of precision of measurement were determining factors in scale and item selection.

The preliminary work led to the development of a 120-item form, beginning with the first life stage relevant to the study of adult concerns, Exploration, and continuing with the subsequent stages or constellations of career development tasks of Establishment, Maintenance, and Disengagement. Each stage had three substages or groups of more closely associated tasks or concerns as in the current form,

but with 10 items in each substage. The reliability of these substages being in the .90s and practical considerations making a shorter inventory desirable, the final forms were reduced to five items per substage for a total number of 60 items, with high reliabilities discussed later. Even the first 44-item form had a corrected split-half reliability of .93, an alpha coefficient of .86.

These early forms were known as the *Career Development Inventory*, Adult Form (Super, 1977), and then as the *Adult Career Development Inventory*. The name was changed to the *Adult Career Concerns Inventory* to take into account the recycling nature of adult development and to stress the undimensional nature of the instrument in contrast to the multidimensional, bifactorial nature of the *Career Development Inventory*, School and College Forms (Super & Kidd, 1979).

Methodological Issues

Several methodological issues were confronted in the development of early forms. One of these was that of the systematic rather than randomized order of the items; another was that of assessing recycling, mentioned earlier.

The Randomization Study

Undertaken by Zelkowitz (1974) as part of her dissertation with CPS data, this study considered the possibility that grouping the items according to substages and stages might make their meaning so transparent as to give spurious reliability to the scales, even though desirably increasing their clarity. The items were therefore grouped according to a table of random numbers, and one half of a sample of 100 adults was given the randomized form, while the other half was given the logically arranged form. Distributions of scores, reliability, factorial structure, and construct validity data all led to the conclusion that the logically arranged form was not only more consistent internally as hypothesized, but also more valid than the randomized form. No evidence was found of an acquiescence response set. Mistrusting the results of just one study, Phillips (1982) replicated this study, but reached essentially the same conclusions.

The Recycling Study

Although life or career stages and substages provide a logically appealing outline of a continuum of vocational development through which individuals tend to progress, this progression is not always smooth and orderly, as shown in the early work of Miller and Form (1951). This provided one of the sources of Super's (1957) life stage theory: not all careers are stable or conventional; many, especially in lower SES samples, are unstable (i.e., involve stabilizing and then becoming destabilized) or "multiple-trial"

(i.e., involve so much change as seeming to omit stabilizing at all). From data on physicians, Morrison (1977) has suggested that some who face failure attempt to recycle their careers by looking for new environments or new occupations.

The concept of "career crises" is now widely known and is viewed by some (Levinson, 1978) as part of the normal cycle of development, although it may be said that such crises may result from failure to acknowledge the normal changes that come with increasing maturity and age. They may also result from socioeconomic changes that have gone unnoticed or unprovided for by individuals or their organizations. In coping with change, people return to earlier stages of their careers, exploring and seeking to become established in a new field or to modify their position in their existing field. Thus, individuals whom one might expect to be concerned with Maintenance may also be seen to be concerned with Exploration or Establishment.

In the recycling study, items written to assess Exploration and Establishment were rewritten as recycling items that were less "adolescent" in their implications. They became a fifth cluster of developmental tasks, a Recycling stage. They were then administered by Mark Savickas to 45 counselors in northeastern Ohio schools. Their ages ranged from 24 to 54, and they were divided into two groups, one group of counselors younger than 35 and another group aged 35 and over. It was hypothesized that the older subjects would be more concerned with Recycling and Maintenance tasks, while the younger subjects would be more concerned with Establishment and Maintenance. The older group was indeed found to be more concerned with Maintenance than with other tasks, but not with Recycling. This may, of course, be a function of the occupational stability of subjects, but in view of the fact that counseling in the schools is for many a stepping-stone to jobs higher on the administrative ladder, Recycling concerns, if not behaviors, should be common. The younger group was more concerned with Establishment and Maintenance as hypothesized. Discussion with these counselors after they had completed the inventories suggested that they were able to use the standard items to express their concerns, but that they were somewhat confused by the Recycling cluster which seemed redundant and provided for by the Exploration and Establishment items. The Recycling items and scale were therefore dropped, and item 61 was substituted to clarify the meaning of the standard stage and substage scores.

CHAPTER SEVEN

Psychometric Characteristics

In this chapter, the reliability, validity, and factor structure of the ACCI are discussed. The detailed reliability data are solely those for the 1986 published form, those needed by current users. The data on validity include some for the experimental forms, but those given last are for the current form and are clearly so identified. The same is true of the factor analytic data.

Reliability

The reliability data of the earlier forms of the ACCI are not reported here, beyond stating that Zelkowitz (1974), Phillips (1982), Cron and Slocum (1986), and Stout, Slocum, and Cron (1987), using subjects of varying occupational and age groups, found the early forms highly reliable, with stage and substage scales having alpha coefficients in the .80s and .90s.

In the current form, the ACCI reliability data are also internal consistency (alpha) coefficients. Data collected by the senior author at a northeastern technical university from 68 professional staff members (30 women, 38 men, of whom 12 were aged 21 to 30, 25 were 31 to 40, 14 were 41 to 50, 15 were 51 or over, and 2 failed to report their ages) who were participating in a career development conference were analyzed by his collaborators. Data are reported in Table 7.

It is noteworthy that only the scale for Deceleration has an alpha of less than .81. Most coefficients for substages are in the .80s, and those for all other

Table 7: Internal Consistency (Alphas) of the ACCI

	Academic Professionals $N = 68$		Corporate Employees $N = 331$
	Alpha	S.E.M.	Alpha
Exploration	.92	2.7	.96
Crystallization	.81	2.0	.91
Specification	.865	1.9	.90
Implementation	.87	2.0	.90
Establishment	.92	3.3	.95
Stabilizing	.885	1.8	.90
Consolidating	.815	1.8	.90
Advancing	.87	1.5	.90
Maintenance	.93	2.9	.96
Holding	.87	1.6	.90
Updating	.85	1.5	.92
Innovating	.87	1.5	.91
Disengagement	.93	3.4	.95
Deceleration	.76	2.0	.81
Retirement Planning	.91	1.6	.92
Retirement Living	.95	1.4	.95

groupings are in the .90s. It is not surprising that deceleration concerns do not cluster as well as most other categories, for deceleration generally starts during the Maintenance stage as motivation, energy, and health begin to decline.

In a study of employees of a major international corporation noted for employment security and promotion from within (331 who correctly completed the ACCI out of 339 in a routine personnel activity), Mahoney (1985), using data collected by Dr. Peter Cairo of Teachers College, Columbia University, obtained additional reliability data. Men constituted 36 percent of the sample, women 64 percent (predominantly clerical workers). Six percent did not give their age, but 16 percent were aged 18 to 24, 71 percent were 25 to 44, and 7 percent 45 to 65. Three percent did not report job level, but 8 percent were high-level managers, 25 percent staff managers, 23 percent technical specialists or supervisors, and 41 percent nonmanagerial. Table 7 shows that all of the alpha coefficients are in the .90s for both substages and stages, with the exception of Deceleration, which is .81. This finding, with larger numbers in ideal testing conditions, agrees with the findings from the technical university professional staff reported above. The tasks of deceleration, in these two situations of relatively high stability, thus do indeed appear to be rather atypical in that more of them are

faced at earlier stages than the theoretical timetable suggests.

No stability (test-retest) coefficients have yet been reported. It seems likely that as career substages and stages change, the coefficients will go down, for concerns should change. Stability coefficients for adjacent substages, in contrast to those across stages, should in due course provide interesting and important construct validity data.

Validity

More than 30 years ago the senior author served as a member of the first APA Committee on Test Standards, at which time distinctions were made between various types of test validity. Cronbach and Meehl (1955) christened one of them "construct validity," while others were named "concurrent" and "predictive" validity. Since then the standards have been revised several times, leading some psychometricians to suggest that all types of validity, if not outright random empiricism, are construct validity. That is, validity is always a matter of data of some type making theoretical sense, whether the data are the content of the test, relationships with other tests purported to measure the same characteristics, or relationships with other variables that should theoretically have some relationship to what the instrument measures.

Recognizing that all validity criteria must be chosen because they fit a reasonable theory, whether empirically supported in the past or selected only because of the inherent logic of the theory, the studies made to date will be organized according to *content* validity, *concurrent* validity, and *predictive* validity. Each of these will deal first with non-ACCI or CDI-Adult data such as those of the *Career Pattern Study* on which these were based, then with data on earlier forms of the ACCI, and finally with the current ACCI form. This treatment is considered justified by the basic similarity of the methods and items in each form, despite minor changes in some items and despite changes in the response scale as revisions were made during research and development. If the results tend to agree despite changes in the forms, confidence in the results and in the ACCI can be even greater; if the results tend to disagree, then there is reason to ask whether the differences are due to variations in the methods or to lack of validity in the construct assessed.

Non-ACCI Studies

These are relevant here as evidence of the validity of the construct of career maturity and its adult equivalent of career adaptability, even though not central to the use of the ACCI as an instrument. They are therefore dealt with only briefly.

Content Validity was first established by the *Career Pattern Study* (Super et al., 1957; Super & Overstreet, 1960; Super et al., 1967; Jordaan & Heyde, 1979; Super, 1985; the order is chronological for historic reasons). Having reviewed the literature

and created the construct and the term, the CPS staff brainstormed the question of how to assess career maturity in adolescence and proposed a model in the first CPS monograph. This provided the basis for scale definitions and item writing (Super et al., 1957), and scales were refined empirically with some guidance from logic (Super & Overstreet, 1960). Jordaan and Heyde (1979) pursued the refinement process empirically and related 9th-grade to 12th-grade scores (predictive validity inferred from long-term stability).

Researchers of the *Career Development Study* (Gribbons & Lohnes, 1968, 1982) developed a model and measures of their own, following the CPS model and their own logic. They looked at long-term stability and also at postschool histories for predictive validity, with mixed success.

Crites (1978), a coauthor of the first CPS monograph, used a modified CPS model and developed a measure of his own, in effect verifying the utility of the construct and the model, as did Super and associates and Gribbons and Lohnes, by empirical methods.

Super and Kidd (1979) and Super and Knasel (1979) adapted the CPS model for adults, first on logical grounds and then refining it by empirical methods, with some evidence of its validity.

Concurrent Validity was examined in most of the studies described above, with some external evidence of the validity of the construct of career adaptability in adults. In addition, Hall and Mansfield (1975) and Smeltz (undated) devised their own methods for career stages. Hall and Mansfield found that, in scientists and engineers, the expected psychological needs tended to surface at predicted career stages; Smeltz, studying hospital nurses, found that career development tasks did fit chronological stage as expected. They questioned the linear nature of coping with developmental tasks in adulthood, supporting the notion of recycling.

Predictive Validity of non-ACCI measures has been examined by Gribbons and Lohnes (1968, 1982) and by Noumair (1985) in a dissertation on the *Career Development Inventory*. Gribbons and Lohnes reported on the relationships of career maturity as measured in interviews in high school. They also studied other socioeconomic, educational, and psychological data on these students and later careers up to age 25 and then to age 35. Using MANOVAS and Markov chains, they found that career maturity could be identified as a personality characteristic independent of others, but that "transitional coping behaviors as the criteria once again showed only disappointing degrees of predictive validity" for high school career maturity as assessed in the *Career Development Study,* but a "breakthrough occurred when [they used] a set of criteria scaled from a career tree structure model for transitions in educational and occupational aspirations over time:... path-following versus path-jumping in the career tree is moderately predictable, and there are indications that path-jumpers as a group are stronger people" (1982). The Markov chain theory and method, however, proved too simple (1982, p. 92), although the authors conclude that if a way can be found to combine multivariate and Markov methods, they will "have great promise for longitudinal research on human development."

The *Career Development Inventory,* High School Form (Super et al., 1981), was given to all seniors in a northeastern New Jersey city 45 miles southeast of New York City. They were followed up three years later, then five years after graduation. Iasenza, Thompson, and Lindeman (1987) examined gender differences in CDI predictions of career satisfaction outcomes three years after graduation. Data were available on 218 students, of whom 55 percent were female. At the time of this follow-up, 93 percent of the men and 85 percent of the women were single. An analysis of variance showed that CDI scores of males were positively and significantly related to

career satisfaction three years after high school; however, the relationship for females was negative. There is, as others have pointed out, a problem in assessing career satisfaction three years after high school: many subjects are still in college, some are in the armed forces (and some of these two groups are in a career moratorium), and some are newly wed, which has had at this point indeterminable effects on their occupational careers. Could it be that, because of gender, the generally more vocationally mature women are more frustrated in their careers than the men?

Noumair (1985) used the same data, but from both the three-year follow-up and the five-year follow-up. In the latter, all of the subjects had time to graduate from college if they progressed on the normal timetable, and some may have had a year of graduate school; those in military service had time to serve a normal tour of duty unless they had enlisted late. All were still about 23 or 24 years of age, thus the expectation was that they would still be in the exploratory stage or perhaps just ready to stabilize. In the 1985 follow-up, there were 262 graduates, of whom 58 percent were female. Multiple regression analyses showed that both conative scales (Planning, Exploration) and cognitive scales (Decision Making, World of Work Information, and Knowledge of the Preferred Occupation) were sometimes related to satisfaction and that both types of scales predicted job level and years of education completed five years after high school. Career Decision Making, a cognitive scale, was positively related to number of job changes, raising a question as to the meaning of job change in the late teens and early twenties. Perhaps in this sample it was a manifestation of exploratory behavior as a means of making more definitive decisions. It is worth noting that 12th-grade career maturity predicted three- and five-year criteria equally well and that career planning, an attitudinal dimension, was the best predictor of later career satisfaction.

Studies of Early ACCI Forms

Studies were made of experimental forms of the ACCI under several different titles such as the *Career Development Inventory,* Adult Form, until the decision was made to use the term "concerns," thus avoiding the implications of linearity common to the notion of development (Super & Kidd, 1979; Super & Knasel, 1979). As previously noted, the differences between experimental forms and the final ACCI are largely negligible item differences as well as differences in response scales. Conceptually important but evidently not empirically important, these latter differences lie in the use of a mixed temporal and quantitative scale in some early forms. Specifically, the scale was based on whether or not one had yet faced and completed a task, combined with the importance of that task or concern, and with the use of an appropriately different scoring system. Validity data for the earlier forms can therefore be seen as bearing on the validity of the final form of the ACCI.

Content Validity was first established by the design of scale specifications based on that portion of the adult vocational maturity model dealing with planfulness. Items were written to fit those specifications and were then reviewed by the coauthors. A series of item analyses were then performed to assure internal consistency and the degrees of independence and intercorrelation of the purified scales (Zelkowitz, 1974). Phillips' (1982) replication of Zelkowitz's randomization study, and of course, the several factor analytic studies cited below, are further evidence of one kind of convergent-divergent validity.

Concurrent Validity of the preliminary forms has been examined by as many as seven independent sets of authors in eight studies. The validity of the

construct *stages* has been examined in four of these. Slocum and Cron (1985) found support for the senior author's (Super, 1957) and early ACCI forms' use of stage theory and data in the identification of stages and in relationships between stages and job attitudes and performance. These conclusions were based on a study of 636 salespersons in seven companies who volunteered to cooperate; there was more than a 90 percent response rate in each company. Several criteria were used, the principal one being supervisors' ratings on seven key sales behaviors, the combination of which in turn had a mean validity of .41 ($p < .01$) when correlated with actual production records. It was found that those individuals who were chronologically in the "trial" (Exploration) stage had been employed at the job for less time, were more willing to move and were less involved in their jobs, i.e., were less involved than those in the Maintenance stage but were equally involved as those in the Establishment stage. They also attached more importance to visibility to their managers than those in the Maintenance stage and were more satisfied with chances for promotion, although they were less satisfied with their work and were more concerned (on the CDI-Adult) with crystallization, specification, and implementation (Exploration) and with Establishment than were others. Those whose ages placed them in the Maintenance stage were most concerned with holding their own, updating, and innovating.

In a study of 133 randomly selected professionals enrolled in traditional and nontraditional college courses in a metropolitan area, Phillips (1982) found no relationship between CDI-Adult scores and the adult development life cycle as assessed by a tailor-made measure, the *Adult Life Phase Scale*, consisting of 42 items representing all phases of life: career, personal relationship/mate, society/community commitment, goal setting, and family responsibilities. From the literature on adult development, these were assumed to vary in importance at different periods of adulthood. As an untried instrument, the criterion itself is open to the same kinds of validity questions as the older instrument, which has been previously studied several times. Slocum and Cron's findings are perhaps better evidence of the validity of the CDI-Adult, as they used a variety of criteria, some of which (e.g., supervisors' ratings) took substantial efforts to validate.

Cross (1981) used the CDI-Adult with 25 men enrolled in evening classes at a community college and who were still engaged in career exploration, with a sample of 30 otherwise similar students who had completed career exploration as shown by the CDI-Adult temporal-quantitative concern scales. Judging from other data, the 25 "explorers" were actually engaged in recycling. Results of interviews revealed that a significant number had returned to school for career changes and were taking courses for occupational exploration. They also had had more jobs with different employers and were somewhat dissatisfied with their jobs, viewing themselves as retarded in career progress and tending to get career assistance from persons they did not perceive as mentors.

Adult students enrolled in a large urban university offering a full program of degree courses in the evening were studied by Costello (1981) with the CDI-Adult. The career concerns of this largely employed sample of 1,095 men and women were advanced for their chronological life stage. Contrary to expectations based on theory, more of those in the 25 to 44 age group were more concerned with Maintenance than with Establishment tasks, while more of those in the 45 to 64 age group were more concerned with retirement than with Maintenance. As theory postulates, recycling through Exploration was rather noticeable in the 40 to 49 and 55 to 64 age brackets, and Exploration and Establishment were strong concerns at ages 20 to 24. That Maintenance concerns were common even in the 25 to 34 age group is particularly impressive, although this may

be due to the hi-tech industries and rapidly developing economy of the region studied. Concern for maintaining one's present position combined with exploring possible advancement and change point to the validity of the concept of recycling and of examining CDI/ACCI profiles for evidence of it.

Another focus of concurrent validation studies has been the *psychological characteristics* which might be associated with career concerns and life stage as shown by them and by chronological age. The aforementioned studies of Slocum and Cron and of Cross have dealt with topics such as locus of control and problem-solving skills; none of these researchers found relationships between locus of control and either career concerns or sales performance. Both theory and prior work are admittedly lacking or weak in this area.

More topical is the question of *sex differences,* which in the case of the ACCI's antecedents have been studied by Herr, Good, McCloskey, and Weitz (1983) at Penn State and by Phillips (1982) at New Mexico. The Pennsylvania team used only the Exploration and Establishment scales (30 items each, with alphas of .97 and .98, respectively) and found no sex differences in their sample of 980 high school students followed up six to eight years after graduation and tested with the early pool of items from the CDI-Adult. Phillips obtained data from 133 professionals taking continuing education courses, using the 60-item CDI-Adult modified by randomizing the items (which she, too, found made no difference), and found no sex differences. These early ACCI findings agree with the data on adolescent conative career maturity reported in many studies (Thompson & Lindeman, 1984).

Differences between *curricular groups* were examined retrospectively by Herr et al. (1983) in the study cited above. CDI-Adult scores obtained when the subjects were between 23 and 27 years of age were examined on the basis of high school curricular group as shown by school records. In their large sample of 980 students, statistically significant differences might not be practically significant, and they point out that this is the case here: however, in adulthood, the academic students were more concerned with Exploration than with Establishment, while the vocational students as adults were no more concerned with one than with the other. The authors suggest that exploration takes longer for those who are less career-oriented (and, we should add, for those who aspire to the late-entry, less visible occupations) and that vocational students, having to make early choices, are therefore locked into career paths at an earlier date and either feel no need to explore or else have careers that are determined more by opportunity than by a conscious decision. It is important to note, however, that despite the strong opinions of many British sociologists (chapters by Cherry, Keil, Daws, Kidd, and by Roberts in Watts, Super, & Kidd, 1981), both Cherry (1978) and Kidd (1982) found that social determination is not so great in class-conscious Britain that aptitudes and self-realization do not play an important part. Students of all classes tend to seek self-realization (Kidd, 1982) and in their early years of work experience tend to rise to their tested ability levels (Cherry, 1978). If this is the case in Britain, then it certainly seems more likely to be the case in North America. More such follow-up studies are needed.

As career development *training* and career *counseling* may be expected to have some effect on career concerns, Ivers (1978) assessed the career concerns of 50 women employed by a federal agency. Half were participants in a program for upward-mobility training and half were not, and they were assessed at the end of one year and then of two years of employment and exposure to the real-life experimental conditions. The groups were similar in their demographic characteristics, except that the control group had been employed by the agency for fewer years. This may be a serious flaw in the study.

On both occasions, Ivers readministered the CDI-Adult. In the one-year follow-up, no differences were found in the career concerns of the experimental and control groups, but at the end of the second year, with 22 remaining in the experimental (trained and counseled) group and 14 remaining in the control (standard employee experience) group, there were significant differences in exploratory and maintenance concerns: all substages of Exploration showed significant gains in the experimental group, as did the updating and innovating substages of Maintenance. Results *may* have been distorted by the greater attrition rate in the less experienced (less committed?) control group (did it lose its less career-motivated members?) and there *may* have been something of the Hawthorne effect in the experimental group: further studies with more control are needed, but would appear to be worthwhile.

Success in managerial employment, defined as *adaptability* or adaptivity, has been studied with the CDI-Adult by Morrison (1977). Adaptivity, with locus of control as a personality trait, was behaviorally defined in terms of rated ability to change from one managerial role to another and was rated by higher level managers of 77 subjects who had faced multiple role changes in their corporate employment. The subjects were about equally divided between adaptive and nonadaptive managers. Results of the study show that the adaptive managers were less concerned with exploratory tasks than were the nonadaptive managers and thus seemed more mature vocationally. There were no differences in Establishment, Maintenance, or Disengagement concerns (the findings have been rephrased here to account for the differences between the temporal-quantitative scales of the form used and the quantitative scales of the current form).

Success in sales work, defined as *job performance* and rated on seven sales dimensions such as volume of sales, development of new accounts, and resourcefulness, was studied by Cron and Slocum (1986). When criteria were combined, there was an alpha coefficient of .90 and a .57 correlation with actual sales records in six companies and among 466 salespersons. The companies all had national salesforces and manufactured industrial equipment and supplies ranging from building materials to chemicals. Sales performance was found to vary with career concerns: high performers were likely to be less concerned with exploratory tasks and more concerned with those of the three later life stages. In this type of work, salespersons concerned with exploratory tasks tended to be less involved in their jobs and felt less successful and less satisfied than others. It must be remembered that what is particularly true of sales work may *not* be true of other types of work such as technical work in industries having considerable employment security and expanding markets and production. Demographic data are essential to the interpretation of career concerns surveys and validity studies.

Predictive validity has been studied with the CDI-Adult in a three-year longitudinal study still in process by Stout, Slocum, and Cron (1987). Their subjects were 122 salespersons employed by a major national corporation, categorized on the basis of company records and questionnaire data as nonplateaued, already plateaued (from when the study began), and newly plateaued (during the study). The *nonplateaued* group showed *no change* in career concerns on the CDI-Adult during these three years; the *already plateaued* group *changed* significantly, becoming less concerned with the tasks of Exploration, Establishment, and Maintenance and showing a decrease in commitment to the organization; the *newly plateaued* group showed *no significant changes* in career concerns. All of these findings were in keeping with the authors' hypotheses. One might speculate that the already plateaued group settled into their jobs during these three years, accepting reality and feeling secure in it, and that

the newly plateaued group had not yet time for their new status to take full effect, while the non-plateaued group (who were doing well) had no reason for changing the career development concerns.

Studies of the Current ACCI Form

To date, there has been just one completed validity study of what is essentially the current form of the ACCI (but see also the analysis of the normative data in Chapter 5). A concurrent validation study due to the newness of the form, it is a doctoral study by Mahoney (1986), with data collected by Dr. Peter Cairo of Teachers College, Columbia University, in a survey of employees of a large international corporation in a northeastern U.S. city. There were 393 subjects, 251 (64%) were women and 142 (36%) were men. They ranged in age from 18 to 65 as follows: 16 percent 24 or under; 71 percent 25 to 44; and 7 percent 45 to 65 (some subjects failed to report age). In Mahoney's grouping, 64 percent of subjects were managerial, 7 percent were technical, and 32 percent were clerical, this last group largely female. A more refined grouping shows that 8 percent were high-level management, 25 percent were staff managers, 23 percent were supervisory and technical, and 41 percent were nonmanagement (3% did not respond). Relevant to the validity of the ACCI are data on stages, sex, job level, and satisfaction; factor structure is addressed in the next section.

Stage concerns as indicators of chronological age were analyzed for both stage and substage scores. The ACCI was found to identify accurately about half of the subjects, only a little better than chance (the chance hit rate would be one in three). Of course, no one would seek to predict age from an inventory of career concerns: one would ask for age data. The value of this finding is that it demonstrates that career concerns are indeed somewhat *related* to chronological age and that no concerns are *limited* to any one age group. Furthermore, Mahoney found that the predictive accuracy of the ACCI increased substantially with job level, especially when substage scales were used, with accuracy rates of 59 percent for general clerical workers, 81 percent for skilled clerical workers, and 83 percent, 87 percent, and 96 percent, respectively, for lower-, middle-, and upper-level managers. One possible limitation to these conclusions is that the 25 to 44 age group constituted 72 percent of the sample; thus, Establishment concerns did not cluster in this job-secure situation as they have been found to do in the earlier studies. They do, however, suggest that the earlier notion of career maturity as being independent of job level needs to be revised or at least refined and restated in terms of career adaptability.

Stage concerns were also examined in relation to *career* (not job) *satisfaction*. Mahoney divided his subjects into two groups—those whose age and career stages were deemed appropriate and those whose age and stage scores did not agree. The latter group was deemed less vocationally mature than the former. The hypothesis was that the former group would be more satisfied with their careers than would the latter. Although the differences were in the hypothesized direction, they were not statistically significant. This finding differed from that reported by Zelkowitz (1974) for a more typical sample of adults. Mahoney notes that his failure to replicate earlier findings may be due to the fact that he used one item, rather than a multifaceted scale, for measuring career satisfaction.

When *job satisfaction* was examined, the group whose age and stage were deemed appropriate was found to have higher job satisfaction than the other group, and the difference was statistically significant. With a sample of this size, however, and with a probability of .05 or less, the practical difference is doubtful. Again, Zelkowitz's (1974) more typical sample of adults showed greater, practically impor-

tant, differences. Mahoney's one-item scale may again have been the villain.

Gender was also studied in relation to career concerns. The 251 women of the Mahoney-Cairo sample (64%) scored significantly higher ($p < .01$) than the men on Exploration and its three subscales. They also scored higher on the stabilizing subscale of Establishment ($p < .05$). Before inferring a difference in life stage concerns between sexes, note that in this corporation, women were found more frequently in the lower job levels than men, regardless of age. In a period of growing equality for women and in a company such as this that has outstanding programs for minorities, these women may have been expected to be more concerned with exploring and with stabilizing in better jobs (Fitzgerald & Crites, 1980). As Mahoney notes in citing Osipow (1983), women at the professional if not managerial level may have career concerns similar to those of men at the same level.

Further evidence on concurrent validity of the norm group is reported in Chapter 5.

Factor Structure

When test standards were first formulated by a select committee (APA, 1954) on which the senior author served, the use of factor analysis data to demonstrate the validity of a test was discouraged. Unofficially, it was seen as an easy way to avoid validating tests against external criteria such as performance records. Today, views have changed, and Anastasi's (1982) widely used text treats factor analysis as "particularly relevant to construct validation" (p. 145), particularly when several tests, inventories, or scales are used in the study of their factor structure. Thus, Cronbach (1971, p. 469) has stated that "in construct validation one wishes to know how much of the test variance is attributable to each of a number of constructs, including both the intended construct and the impurities. Factor analysis leads directly to such a statement . . ." In this Manual, factor analytic data are presented separately from other validity data in order to stress external criteria, difficult though these are, conceptually and practically, in studying career maturity. But factor structure is indeed evidence of construct validity.

The Experimental Form, CDI Adult

Revised after preliminary factor analysis to verify the placement of items, the first research form was given to 160 adult men. It consisted of 44 items, four for each substage, three substages per stage, except for Disengagement, which had only two (see Table 8). Seven significant factors were extracted: one consisted of all twelve Exploration items; three were the three substages of Establishment; one contained all the items of the three Maintenance substages; and two were the two Disengagement substages. Super, Zelkowitz, and Thompson (1975) concluded that the factor analysis supported the content and construct validity of the research form of the CDI-Adult (later ACCI, with a total of 60 items, or 15 per stage and 5 per substage).

Table 8: Factor Analysis of the 44-Item Research Form, CDI-Adult ($N = 160$)

Stage & Substage	Items	Factor 1	2	3	4	5	6	7	8	9
Exploration										
Crystallization	1–4	1–4								
Specification	5–8	5–8								
Implementation	9–12	9–12								(6–7)
Establishment										
Stabilizing	13–16				3–16					
Consolidating	17–20							17–20		
Advancing	21–24					21–24				
Maintenance										
Holding	25–28		25–28							
Updating	29–32		29–32							
Innovating	33–36		33–36							
Disengagement										
Decelerating	37–40						37–40			
Retiring	41–44			41–44						

Early ACCI Forms (The CDI-Adult)

In an early unpublished study, Savickas gave the CDI-Adult and the *Career Development Inventory,* College Form (CU), to several hundred undergraduate students at Kent State and John Carroll Universities near Cleveland, Ohio. He found a factor common to most of the CDI-Adult items and to the Career Planning scale of the CDI-CU, plus some other items from the latter's Career Exploration scale (the second attitudinal scale). This was taken as evidence that the CDI-Adult scales are essentially measures of planfulness or a planning approach to life, a concern with career developmental tasks at any of the life stages.

Further factor analyses were conducted with early forms by Cron and Slocum (1986) and by Phillips (1982). Cron and Slocum's report is brief and incidental to a study of career adaptability and attitudes and performance, discussed earlier. They report that four factors were extracted that explained 52 percent of the variance. Each item loaded heavily on the factor associated with the appropriate career stage, i.e., Exploration, Establishment, Maintenance, and Disengagement in this principal components analysis with varimax rotation. Phillips, who randomized the 60 items of the final form,

also found four orthogonal factors that explained 43.1 percent of the variance, factors that correspond to the four stage scales of the ACCI. In Phillips' sample, a few items were found to be misplaced, four Maintenance items clustering with most of the Establishment items, and one item clustering with most of the Disengagement items, while three Exploration items clustered with the ten remaining Maintenance items. These findings do not agree with those of other factor analyses, but do fit the common finding of recycling: some exploratory behaviors reoccur in the Maintenance stage; some Maintenance concerns are not inappropriate late in the exploration process.

The Current ACCI Form

Mahoney (1986) performed factor analyses of data from 393 men and women employed in a major corporation with a very stable work force. Using principal axis factoring first with items and not limiting the number of factors, then limiting to three and then to four factors, and finally factor analyzing the scales, he obtained similar results each time. The Establishment scale did not emerge as a distinct factor, but merged with the Maintenance scale; however, all but two of its 15 items clustered with 13 items from the Establishment scale: it thus appears that in this group of job-secure men and women, most of whom (72%) were aged 25 to 44, consolidating, advancing, holding one's own, updating, and innovating are concerns common to the same group of people (see Table 9, Part 1). Had more than 7 percent been 45 years of age or older, results might have been different.

Mahoney's second factor (Table 9, Part 2) is clearly an Exploration factor. Its 15 items cluster well, joined by only two Establishment (stabilizing) items as items that follow logically in the stage process of career development. The third factor is that of Disengagement, comprised of 14 of its original 15 items as shown in Part 3 of Table 9.

Given the age, sex, opportunity orientation, and job security of these 393 subjects, it is perhaps not surprising that only the three factors emerge, with Establishment and Maintenance merging. That the original work, with its group in a more diverse employment situation and even though homogeneous in age and sex (Zelkowitz, 1974), found factors corresponding to the hypothesized stages suggests caution in viewing Mahoney's findings, especially as Cron and Slocum, and Phillips, cited above, found the hypothesized four factors. As Vondracek, Lerner, and Schulenberg (1986) emphasize, the complete interaction between person, relations, and situation needs to be taken into account.

Table 9: Factor Analysis of ACCI Scores Loaded onto Three Factors ($N = 331$)

Part 1 – Factor 1: Loading of ACCI Scores

Stage	Item	Factor Loading
Establishment Stage		
Stabilizing	17	.59
	18	.60
	19	.57
Consolidating	21	.54
	22	.68
	23	.69
	24	.75
	25	.75
Advancing	26	.69
	27	.61
	28	.59
	29	.63
	30	.55
Maintenance Stage		
Holding One's Own	31	.55
	32	.58
	33	.65
	34	.74
	35	.77
Updating	36	.77
	37	.79
	38	.76
	39	.71
	40	.64
Innovating	41	.76
	42	.71
	43	.52
	44	.70
	45	.75
Disengagement Stage		
Decelerating	46	.72

NOTE: Factor 1 eigenvalue = 25.77
Percent of variance explained by Factor 1 = 42.9%

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NOTE: References dealing with the ACCI or its earlier forms are marked with an asterisk.

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Appendix A: Note on Terminology

The term *ipsative* is not defined in five of the seven leading American, English, and French dictionaries, encyclopedias, or handbooks on measurement consulted by the senior author. Corsini (1984) and Thorndike (1971) do deal with it, as do some measurement texts, e.g., Anastasi (1982), but they do not clarify its several uses. This failure to define an important term exists despite the introduction of the term into psychology by Cattell in 1944 after many pre-World War II discussions of terminology with the senior author when their offices were adjacent to each other at Clark University. Cattell sought a term that would denote the fact that the *individual* is the norm rather than some external group. Meanings have proliferated since then, with inadequate standardization. For clarification, the following definitions are culled from the literature and in some instances refined:

> *Ipsative measurement* denotes the fact that the individual is the norm (Cattell, 1944; Horn, in Corsini, 1984, vol. 2, p. 254);
>
> *Ipsative scores* facilitate the comparison of the relative strength of one concern, need, value, interest, ability, or aptitude with that of others measured in the same person (Allen, in Corsini, 1984, vol. 3, p. 414; Anastasi, 1982, p. 517);
>
> *Ipsative scaling* involves the construction of scales from items in each of which the choice of one option precludes the choice of another, producing scales that tend to be negatively correlated, generally spuriously (Horn, in Corsini, 1984, vol. 2, pp. 254-255);
>
> *Ipsative interpretation*, as used in this and other manuals by the senior author and his colleagues, denotes the seeking of meanings in the differences between scores made on scales that are so constructed and scored that their raw scores, self-ratings, or converted scores (standard or percentile) can be compared to show their strength relative to each other in one person. Thus Angoff wrote (in Thorndike, 1971, p. 548): ". . . intraindividual comparisons. . . are ipsative. . . taken from a series of measurements, all administered to one individual and evaluated in terms of their departure from the mean of the individual. Ipsative measurements . . . are of value in the field of guidance and counseling where it is considered important to know. . . in which of the various. . . areas (a person) shows relative strengths and weakness" in a profile of abilities, needs, values, or other traits. Angoff then cautions, "Since the reliability of such score differences is ordinarily low, the usefulness of generalizations based on such differences is frequently questionable."

This is why it is important to consider the standard errors of measurement in profile interpretation; that the ACCI scales themselves are highly reliable contributes to the validity of ipsative interpretations of this inventory.

Appendix B: Norm Tables by Age and Sex

Table 10: ACCI Norms by Age Groups, Combined Sexes

Concern	Age: Under 25		Life Stage		Age: 25 – 34		Life Stage	
	Expl.	Estab.	Maint.	Diseng.	Expl.	Estab.	Maint.	Diseng.
Score	Percentiles				Percentiles			
5.0	99	99	–	99	99	99	99	–
4.7 – 4.9	95	94	98	99	95	96	97	99
4.4 – 4.6	90	87	93	93	89	90	92	95
4.1 – 4.3	79	80	83	90	82	81	89	93
3.8 – 4.0	66	68	73	86	74	70	75	90
3.5 – 3.7	45	44	54	79	61	55	57	83
3.2 – 3.5	36	31	39	67	48	38	38	74
2.9 – 3.1	20	22	27	57	39	25	27	66
2.6 – 2.8	12	16	16	45	29	18	19	52
2.3 – 2.5	6	11	7	37	20	11	11	35
2.0 – 2.2	5	5	1	25	13	5	7	22
1.7 – 1.9	3	1	1	17	9	2	1	13
1.4 – 1.6	1	–	–	8	3	1	1	6
1.1 – 1.3	–	–	–	1	1	1	1	1
1.0	–	–	–	–	–	–	–	–
N	83	83	83	83	128	128	128	128
Median	3.59	3.58	3.40	2.76	3.23	3.43	3.40	2.58
Mean	3.48	3.48	3.37	2.74	3.16	3.38	3.32	2.66
Standard Deviation	.8	.8	.7	1.0	.9	.8	.8	.9

Table 10: ACCI Norms by Age Groups, Combined Sexes (continued)

Concern	Age: 35 – 44 Expl.	Estab.	Life Stage Maint.	Diseng.	Age: 45 and Up Expl.	Estab.	Life Stage Maint.	Diseng.
Score	Percentiles				Percentiles			
5.0	–	–	–	–	99	–	99	99
4.7 – 4.9	98	–	99	98	99	98	95	99
4.4 – 4.6	93	94	93	92	96	86	91	91
4.1 – 4.3	90	84	88	86	93	78	83	81
3.8 – 4.0	83	73	80	80	83	70	74	67
3.5 – 3.7	81	63	74	76	81	66	57	58
3.2 – 3.4	71	52	51	68	72	55	50	43
2.9 – 3.1	61	41	36	60	67	44	40	32
2.6 – 2.8	49	30	23	45	60	36	29	23
2.3 – 2.5	38	18	15	34	52	31	20	17
2.0 – 2.2	26	14	9	18	43	22	6	9
1.7 – 1.9	14	7	3	13	31	13	3	3
1.4 – 1.6	9	5	2	3	22	3	1	1
1.1 – 1.3	6	2	1	1	14	1	–	–
1.0	3	1	–	1	6	–	–	–
N	76	76	76	76	74	74	74	74
Median	2.62	3.17	3.19	2.65	2.22	3.08	3.20	3.35
Mean	2.70	3.10	3.14	2.83	2.41	3.05	3.21	3.29
Standard Deviation	1.0	.9	.8	.9	1.1	1.0	.9	.8

Table 11: ACCI Norms by Age Groups, Females

Concern	Age: Under 25		Life Stage		Age: 25 – 34		Life Stage	
	Expl.	Estab.	Maint.	Diseng.	Expl.	Estab.	Maint.	Diseng.
Score	Percentiles				Percentiles			
5.0	99	99	–	99	99	99	99	–
4.7 – 4.9	94	96	96	98	94	96	96	98
4.4 – 4.6	88	91	92	90	89	90	90	93
4.1 – 4.3	75	84	80	86	81	78	85	92
3.8 – 4.0	61	70	74	83	72	66	69	90
3.5 – 3.7	42	52	56	80	58	49	53	81
3.2 – 3.4	34	39	42	68	49	35	36	75
2.9 – 3.1	20	25	30	61	43	24	26	69
2.6 – 2.8	13	20	20	46	31	17	21	55
2.3 – 2.5	6	12	8	40	23	8	12	37
2.0 – 2.2	5	5	2	25	15	5	6	22
1.7 – 1.9	2	1	1	16	12	3	2	12
1.4 – 1.6	1	–	–	8	4	1	1	8
1.1 – 1.3	–	–	–	1	1	–	1	2
1.0	–	–	–	–	1	–	–	1
N	53	53	53	53	78	78	78	78
Median	3.66	3.47	3.37	2.70	3.25	3.51	3.44	2.55
Mean	3.54	3.38	3.34	2.75	3.13	3.45	3.37	2.65
Standard Deviation	.8	.8	.7	1.0	1.0	.8	.8	.9

Concern	Age: 35 – 44		Life Stage		Age: 45 and Up		Life Stage	
	Expl.	Estab.	Maint.	Diseng.	Expl.	Estab.	Maint.	Diseng.
Score	Percentiles				Percentiles			
5.0	–	–	–	–	99	–	–	99
4.7 – 4.9	97	–	–	99	98	99	98	98
4.4 – 4.6	92	99	99	94	95	89	90	89
4.1 – 4.3	91	92	97	91	93	79	83	83
3.8 – 4.0	88	82	89	84	79	71	72	68
3.5 – 3.7	86	75	85	82	76	67	56	55
3.2 – 3.4	79	62	62	77	63	52	50	40
2.9 – 3.1	69	51	47	64	57	33	38	27
2.6 – 2.8	54	38	31	56	49	26	26	18
2.3 – 2.5	39	25	23	42	35	20	20	11
2.0 – 2.2	29	19	13	24	24	16	2	6
1.7 – 1.9	18	11	5	18	15	7	1	2
1.4 – 1.6	12	8	3	5	12	2	–	1
1.1 – 1.3	9	3	1	2	5	–	–	–
1.0	4	1	–	1	2	–	–	–
N	50	50	50	50	41	41	41	41
Median	2.55	2.85	3.00	2.53	2.77	3.17	3.20	3.40
Mean	2.56	2.85	2.90	2.64	2.75	3.18	3.24	3.36
Standard Deviation	1.0	.9	.7	.9	1.0	.9	.8	.8

Table 12: ACCI Norms by Age Groups, Males

Concern	Age: Under 25 Expl.	Estab.	Life Stage Maint.	Diseng.	Age: 25 – 34 Expl.	Estab.	Life Stage Maint.	Diseng.
Score	Percentiles				Percentiles			
5.0	98	–	–	–	99	–	–	–
4.7 – 4.9	97	90	–	–	97	99	99	–
4.4 – 4.6	95	80	98	–	91	92	98	99
4.1 – 4.3	87	72	88	97	85	89	96	93
3.8 – 4.0	73	65	73	90	79	77	84	91
3.5 – 3.7	50	30	50	77	66	64	64	86
3.2 – 3.4	38	18	32	67	49	42	43	73
2.9 – 3.1	20	17	20	50	33	28	32	61
2.6 – 2.8	10	10	10	42	26	22	18	48
2.3 – 2.5	7	10	7	32	15	17	11	35
2.0 – 2.2	7	8	2	23	10	4	8	24
1.7 – 1.9	5	2	–	18	5	2	3	14
1.4 – 1.6	2	–	–	8	1	2	–	4
1.1 – 1.3	–	–	–	2	–	1	–	1
1.0	–	–	–	–	–	–	–	–
N	30	30	30	30	46	46	46	46
Median	3.50	3.63	3.45	2.9	3.21	3.35	3.35	2.63
Mean	3.37	3.65	3.42	2.73	3.18	3.23	3.21	2.65
Standard Deviation	.7	.8	.6	.9	.8	.8	.7	.8

Concern	Age: 35 – 44 Expl.	Estab.	Life Stage Maint.	Diseng.	Age: 45 and Up Expl.	Estab.	Life Stage Maint.	Diseng.
Score	Percentiles				Percentiles			
5.0	–	–	–	–	–	–	98	–
4.7 – 4.9	–	–	96	96	–	97	90	–
4.4 – 4.6	96	84	80	88	97	82	90	92
4.1 – 4.3	88	66	70	76	94	76	82	77
3.8 – 4.0	72	54	62	72	87	66	74	63
3.5 –3.7	70	38	52	64	87	61	55	60
3.2 – 3.4	54	34	32	52	82	55	50	47
2.9 – 3.1	46	24	16	44	77	55	42	39
2.6 – 2.8	40	16	8	26	73	50	32	31
2.3 – 2.5	36	4	2	18	71	45	19	26
2.0 – 2.2	20	4	–	6	65	27	10	13
1.7 – 1.9	8	–	–	2	48	21	6	3
1.4 – 1.6	2	–	–	–	34	6	2	2
1.1 – 1.3	–	–	–	–	23	2	–	–
1.0	–	–	–	–	10	–	–	–
N	25	25	25	25	31	31	31	31
Median	3.00	3.70	3.48	3.18	1.73	2.60	3.20	3.23
Mean	2.96	3.59	3.64	3.23	2.04	2.93	3.19	3.21
Standard Deviation	.9	.8	.7	.9	1.1	1.2	1.0	.9