and midlife career success using Gottfredson's theory. The results of this study lend support to
the influence of socioeconomic status (SES) and ability in the formation of occupational aspirations.
Occupational aspirations, ability, and gender were significantly related to career achievement later in life.
They also found that adolescent girls achieved less career success when they reached midlife than adolescent boys did.

In evaluating Gottfredson's theory, Brown (1996) noted "the propositions relating to the factors
that lead to circumscription and compromise are too general. The result is that we are left
with questions about what actually occurs in the career choice and selection process" (p. 523).
Nonetheless, Gottfredson's theory provides interesting concepts describing boundaries and motivational
dimensions related to the formation of occupational aspirations (Herr, Cramer, & Niles, 2004).
It also addresses significant gaps in career-related literature (career development in childhood
and gender differences). Moreover, Gottfredson's (2005) more recent explication of her
theory begins to address Brown's criticism. Research testing the theory using a longitudinal and
cross-sectional design would be particularly useful.

**JOHN HOLLAND'S THEORY OF TYPES AND PERSON-ENVIRONMENT INTERACTIONS**

The theory espoused by John Holland (1919–2008) belongs to a long tradition of theoretical
perspectives describing individual differences in personality types (Murray, 1938; Spranger,
1928). Holland's theory (1959, 1966, 1973, 1985a, 1997) has been described as structurally
interactive "because it provides an explicit link between various personality characteristics and
corresponding job titles and because it organizes the massive data about people and jobs"
(Weinrauch, 1984, p. 63). The theory is based on four basic assumptions:

1. In our culture, most persons can be categorized as one of six types: realistic, investigative,
   artistic, social, enterprising, or conventional.
2. There are six kinds of environments: realistic, investigative, artistic, social, enterprising, and
   conventional.
3. People search for environments that will let them exercise their skills and abilities, express
   their attitudes and values, and take on agreeable problems and roles.
4. A person's behavior is determined by an interaction between personality and the character-
   istics of the environment. (Holland, 1973, pp. 2-4)

A key to using Holland's theory is understanding his typology. A good start is to consider
how personality types develop. To a large degree, "types produce types" (Holland, 1973, p. 11)—
that is, personality types are both genetically and environmentally based:

A child's special heredity and experience first lead to preferences for some kinds of activities and
aversions to others. Later, these preferences become well-defined interests from which the person
 gains self-satisfaction as well as reward from others. Still later, the pursuit of these interests leads
to the development of more specialized competencies as well as to the neglect of other potential
competencies. At the same time, a person's differentiation of interests with age is accompanied by
a crystallization of correlated values. These events—an increasing differentiation of preferred
activities, interests, competencies, and values—create a characteristic disposition or personality
type that is predisposed to exhibit characteristic behavior and to develop characteristic personality
traits. (Holland, 1973, p. 12)
Holland contends that, to a large degree, career interests are an expression of an individual's personality (Holland, 1959, 1966, 1973, 1985a, 1992). As Spokane (1998) elaborates, “Interests, however, are complex measures that reflect personality as well as preferences, values, self-efficacy and so on. Types, then, are complex theoretical groupings based upon personality and interests” (p. 40). Personality traits are identified by a person's choice of leisure activities, school subjects, vocational interests, and work. To varying degrees, everyone conforms to one (or more) of six basic personality types. The more you conform to a type, the more likely it is that you will manifest the behaviors and traits associated with that type (Weinrich, 1984). Biases exist within the descriptions, and it is not the case that every “deficit” is apparent in every person who reflects a particular type. Following is a discussion of each of the six personality types as Holland defined them (1973, pp. 14–18; 1994, pp. 2–3).

**The Realistic Type**

The realistic type of person prefers activities that entail explicit, ordered, or systematic manipulation of objects, tools, machines, and animals and has an aversion to educational or therapeutic activities. The realistic person has mechanical abilities but may lack social skills. Realistic types prefer jobs such as automobile mechanic, surveyor, farmer, and electrician. Realistic types are often described as:

- conforming, humble, normal, frank, materialistic;
- persistent, genuine, modest, practical, hardheaded, natural;
- shy, honest, and thrifty.

**The Investigative Type**

The investigative type of person prefers activities that entail observational, symbolic, systematic, and creative investigation of physical, biological, and cultural phenomena to understand and control such phenomena. Investigative types have an aversion to persuasive, social, and repetitive activities. These tendencies lead to acquisition of scientific and mathematical competencies and to a deficit in leadership ability. Investigative types prefer jobs such as biologist, chemist, physicist, anthropologist, geologist, and medical technologist. Investigative persons are often described as:

- analytical, independent, modest, cautious, intellectual;
- pessimistic, complex, introverted, precise, critical;
- methodical, rational, curious, and reserved.

**The Artistic Type**

The artistic type of person prefers ambiguous, free, unsystematized activities that entail manipulation of physical, verbal, and human materials to create art forms and products. Artistic people have an aversion to explicit systematic and ordered activities. These tendencies lead to acquisition of competencies in language, art, music, drama, dance, and writing and to a deficit
in clerical or business-system competencies. Artistic types like jobs such as composer, musician, stage director, singer, dancer, writer, interior designer, and actor/actress. Artistic persons are often described as:

- complicated, imaginative, introspective, disorderly;
- impractical, intuitive, emotional, impulsive, nonconforming;
- expressive, independent, open, idealistic, and original.

**The Social Type**

People with a social personality prefer activities that entail manipulation of others to inform, train, develop, cure, or enlighten. They have an aversion to explicit, ordered, and systematic activities involving materials, tools, or machines. These tendencies lead to acquisition of human relations competencies such as interpersonal and educational skills and to a deficit in mechanical and scientific ability. Social types like jobs such as teacher, religious worker, counselor, clinical psychologist, psychiatric caseworker, and speech therapist. Social persons are often described as:

- convincing, idealistic, social, cooperative, kind;
- sympathetic, friendly, patient, tactful, generous;
- responsible, understanding, helpful, and warm.

**The Enterprising Type**

People with enterprising personalities prefer activities that entail manipulation of others to attain organizational or economic gain. They have an aversion to observational, symbolic, and systematic activities. These tendencies lead to acquisition of leadership, interpersonal, and persuasive competencies and to a deficit in scientific ability. Enterprising types like jobs such as entrepreneur, salesperson, manager, business executive, television producer, sports promoter, and buyer. Enterprising persons are often described as:

- acquisitive, domineering, optimistic, adventurous;
- energetic, pleasure-seeking, agreeable, extroverted;
- attention-getting, ambitious, impulsive, self-confident;
- sociable, and popular.

**The Conventional Type**

People with the conventional personality type prefer activities that entail explicit, ordered, and systematic manipulation of data, such as keeping records, filing and reproducing materials, organizing written and numerical data according to a prescribed plan, and operating computers to attain organizational or economic goals. Conventional types have an aversion to ambiguous, free, exploratory, or unsystematized activities. These tendencies lead to acquisition of clerical, computational, and business-system competencies and to a deficit in artistic competencies.
Conventional types like jobs such as bookkeeper, stenographer, financial analyst, banker, cost estimator, and insurance claims adjuster. Conventional persons are often described as:

- conforming, inhibited, persistent, conscientious, obedient;
- practical, careful, orderly, thrifty, efficient;
- and unimaginative.

Holland (1973) used the same six types to describe occupational environments (pp. 29–33). For example, the realistic environment requires the explicit, ordered, or systematic manipulation of objects, tools, machines, and animals and encourages people to view themselves as having mechanical ability. It rewards people for displaying conventional values and encourages them to see the world in simple, tangible, and traditional terms.

The investigative environment requires the symbolic, systematic, and creative investigation of physical, biological, and cultural phenomena. It encourages scientific competencies and achievements and the perception of the world in complex and unconventional ways. It rewards people for displaying scientific values.

The artistic environment requires participation in ambiguous, free, and unsystematized activities to create art forms and products. It encourages people to view themselves as having creative abilities and to see themselves as expressive, nonconforming, independent, and intuitive. It rewards people for the display of artistic values.

The social environment requires participation in activities that inform, train, develop, cure, or enlighten others. It requires people to see themselves as willing to help others, being understanding of others, and seeing the world in flexible ways. It rewards people for the display of social values.

The enterprising environment requires participation in activities that involve the manipulation of others to attain organizational and self-interest goals. It requires people to view themselves as aggressive, popular, self-confident, sociable, and possessing leadership and speaking ability. It encourages people to view the world in terms of power and status and in stereotyped and simple terms. It rewards people for displaying enterprising goals and values.

The conventional environment requires participation in activities that involve the explicit, ordered, or systematic manipulation of data, such as record keeping, filing materials, and organizing written and numerical data according to a prescribed plan. It requires people to view themselves as conforming, orderly, nonartistic, and having clerical competencies. It rewards people for perceiving the world in stereotyped and conventional ways.

**Congruence**

The key construct in Holland’s theory is that of congruence. Congruence describes the degree of fit between an individual’s personality type and current or prospective work environment. A person is in a congruent work environment when his or her personality type matches the occupational environment (a social type working as a counselor). Conversely, incongruence occurs when people are in environments that do not match their personality types (a social type working as a computer programmer). Individuals tend to be more satisfied and perform better in environments that are congruent with their personality types. Thus, congruence reflects the adage that birds of a feather flock together as well as that “different types require different environments” (Holland, 1973, p. 4) and “environments are characterized by the people who occupy
them" (Weinreich, 1984, pp. 63-64). To distinguish congruence from Hollands other constructs, students often find it helpful to view the i and e in congruence as indicative of the relationship between you and the environment.

Holland uses a hexagonal model to represent the relationships within and between types (Figure 2.1). The highest level of congruence occurs when there is direct correspondence between workers' personality types and their work environments (investigative personality types in investigative work environments). The next highest level of congruence exists when workers are in environments adjacent to their type on the hexagon (a realistic personality type in an investigative work environment). The lowest level of congruence exists when workers are in environments opposite their personality types on the hexagon (a social type in a realistic work environment). The primary goal of career counseling is to help clients identify and connect with congruent work environments.

**Differentiation**

To describe workers and their environments, Holland (1973) focuses on the three types the worker or environment most closely resembles. However, some people and environments are
more clearly defined, or differentiated, than others. For example, a person may greatly resemble one Holland type and have little resemblance to others (a high level of differentiation); or a single type may dominate an environment. Other persons or environments may resemble multiple types equally and therefore be relatively undifferentiated or poorly defined. Holland (1973) referred to the degree of distinctness among types in someone's personality profile as "differentiation." Because people who are undifferentiated may have difficulty making career decisions, counselors often direct interventions toward helping them achieve greater differentiation among Holland types.

**Consistency**

The degree of relatedness within types is referred to as consistency. The hexagonal model shown in Figure 2.1 is useful in illustrating the similarities across types. For example, types located next to each other on the hexagon have more in common than types opposite each other. Higher degrees of consistency within personality types suggest more integration and harmony among traits, interests, values, and perceptions than do lower degrees of consistency. Holland assumes that consistent persons are more predictable in their behaviors and more likely to be higher career achievers than persons who are not consistent. However, it is not a goal of career counseling to make clients more consistent. Rather, the primary function of consistency in counseling is to foster awareness: clients with low consistency (a realistic-social personality type) must be aware that it may be difficult to find an occupational environment that allows them to express the diverse aspects of their personalities. In such cases, clients must identify avocational activities that allow them to express themselves outside of work. For example, a realistic-social personality type working as a social worker may choose to spend her leisure time in woodworking activities.

**Vocational Identity**

Vocational identity is defined as the "possession of a clear and stable picture of one's goals, interests, and talent" (Holland, 1985a, p. 5). Vocational identity is an important goal of many career development interventions and dependent on acquiring sufficient occupational and self-information.

**Applying Holland's Theory**

Congruence, differentiation, consistency, and vocational identity are the key theoretical constructs used to link Holland's theory to practice. "All things being equal, an individual with high identity who is congruent, consistent, and differentiated should be more predictable and better adjusted than one who is incongruent, inconsistent, and undifferentiated" (Spokane et al., 2002, p. 385). Assessment instruments developed by Holland and his associates are typically used to measure these constructs, and the results of these measures provide stimuli for career counseling content.

For example, the Self-Directed Search (SDS) (Holland, 1994) and the Vocational Preference Inventory (VPI) (Holland, 1985b) are used to translate clients' self-estimates of interests and competencies into Holland types. The SDS consists of an assessment booklet (used to identify a person's Holland type), an Occupations Finder (two versions are available, each listing 1,334 occupations classified according to either three-letter Holland codes or alphabetical order), and an interpretive guide titled You and Your Career. The latter provides people with information,
activities, and readings for using Holland’s theory in career decision making. The SDS, which is the most widely used interest inventory, is available in different versions based on reading level (SDS Form E), setting (SDS CP, Corporate Version), and language spoken by the respondent.

The SDS would provide a starting point for focusing Juanita’s career exploration and information gathering. First, Juanita could use the assessment booklet to identify her three-letter summary code. (Because researchers have found a high error rate in summary code calculations [Muller, 1997], counselors must take precautions to prevent this.) Then Juanita and her counselor could compare her summary code (ASI—artistic-social-investigative with low differentiation) to her abilities and interests.

It is especially important to discuss with the client his or her summary code when the code lacks consistency. A client with a code of RSA (realistic-social-artistic) may have trouble finding occupations that fit that combination (few jobs require workers to have equally strong mechanical, social, and artistic skills). Clients who do not understand this may experience pendulum shifting in their career choices. A man may opt for a realistic—R—occupation and be satisfied because it offers opportunities for engaging in R tasks and rewards R competencies. Over time, however, he may notice the absence of social—S—opportunities and become convinced that the R occupation should be replaced with one in the S environment. If he changes jobs, he may be satisfied with the new one—for a while—but over time he may feel that the new job is too S and not enough R, and the pendulum may shift back toward an R occupation.

Making low-consistency clients aware of the possibility of pendulum shifting is important because, if a congruent occupational environment is not available, avocational activities may compensate for the lack. In these instances, counselors may use the Leisure Activities Finder (Holmberg, Rosen, & Holland, 1990) to help clients identify opportunities to express dimensions of their personalities they may not be able to express through work. For example, a person with an RSA code may choose to work with things (R) at work, perhaps as a cook, but devote leisure time to the social (S) sphere, perhaps as youth group leader for a church. As we said before, it is important for practitioners to understand that consistency is not a goal of career counseling. Rather, consistency is a construct that helps clients understand who they are so they can make effective career decisions.

Clients with codes that lack differentiation (determined by subtracting the lowest score from the highest score among the six types, or by examining the numerical difference among the letters in the client’s three-part code) often experience a lack of focus in their career direction. Lack of differentiation may occur because (a) clients lack exposure to activities across Holland environments, (b) they have trouble making decisions, (c) they have multipotentiality, or (d) they are depressed.

Clients lacking in exposure to Holland environments (e.g., young people with little or no work experience, homemakers returning to work after an extended absence) may need help increasing self-understanding as it relates to their interests, abilities, and values. With such clients, counselors may use values inventories, values card sorts, and skills checklists to foster understanding of these career decision-making variables. Persons returning to the labor market after a lengthy hiatus may find it useful to engage in an accomplishments exercise in which they list activities—accomplishments—about which they feel especially proud. As the client describes each activity, the counselor encourages him or her to list the skills embedded in the successful performance of the activity. After doing this for several activities, counselor and client will have generated a list of skills that they can categorize according to Holland type and can use to identify the type that embodies the client’s dominant characteristics. Clients with limited work experience
may also need to take steps to increase their self-understanding and differentiation, such as information interviewing, volunteering, and job shadowing.

Indecisive clients can be taught decision-making skills and encouraged to retake the SDS and/or to discuss which Holland types they think they most closely resemble. Instead of retaking the SDS, such clients may engage in a Holland card sort procedure during which they rank activities in order of preference (and the counselor observes how easy or difficult it is for them). The rankings are then reviewed to determine which Holland types they suggest. After learning decision-making skills, engaging in self-assessment activities, and reviewing occupational information, some clients may remain undecided. Clients may be fearful of choosing for many reasons, including failing, disappointing significant others, or even succeeding. In these instances, counselor and client need to engage in a counseling or therapy-like process to help the client understand his or her fears.

Elevated and undifferentiated SDS scores may indicate that a client has multiple interests and competencies, but not decision-making problems. This was true of Holland himself, who had elevated and undifferentiated scores across almost all his types (Weinrich, 1996). Counselors may find it useful to focus on values instead of interests and abilities when working with such clients. Finally, counselors also must determine whether clients with low scores for all Holland types are having difficulty with depression or low self-esteem. Given Juanita's youth and difficulties in school, her counselor would do well to explore all possible explanations of the low differentiation in her summary code.

With a general understanding of the Holland typology and a specific understanding of their own Holland summary codes, clients can peruse the Occupations Finder to find options that resemble their summary code. Each client focuses on occupations resembling all combinations of his or her summary code, then identifies occupations within these categories that interest them (Juanita would focus on occupations in the ASI, SIA, AIS, SAI, IAS, and ISA categories).

Next, counselors encourage clients to take action (information interviewing, researching occupational requirements, job shadowing) to learn about occupations that interest them. Clients then discuss what they've learned with their counselors and narrow their list of options. Counselors encourage clients to take additional steps (volunteering, taking courses related to a particular occupation, job searching) toward implementing tentative choices. Counselor and client also review how each option provides opportunities for expressing the types comprising the client's summary code. The goals of this process are to clarify the client's vocational identity and help the client make a congruent career decision.

In addition to the SDS, counselors can use the VPI to help clients identify their Holland type and connect their summary codes to congruent occupational environments. The VPI (Holland, 1985b) contains 160 occupational titles, the six Holland type scales, and five supplemental scales (self-control, masculinity/femininity, status, infrequency, and acquiescence). To assess vocational identity, counselors can use My Vocational Situation (MVS) (Holland, Gotfredson, & Power, 1980), a manual that measures vocational identity and perceived career development barriers. The MVS's Vocational Identity (VI) scale measures the respondent's awareness of and ability to specify his or her interests, personality characteristics, strengths, and goals with reference to career choices. The MVS's Occupational Information (OI) scale measures the respondent's need for occupational information.

Gotfredson and Holland (1996) also created the Position Classification Inventory (PCI) for classifying work environments according to Holland typology. Prior to the PCI, which uses individual worker judgments to classify his or her work environment, researchers and counselors used an actual census of workers to classify work environments according to the Holland types. Because variability exists across same-type occupations in different work environments, the PCI
may be useful in helping clients understand their degree of congruence in a specific job. Miller and Bass (2003) found the PCI useful in classifying work environments in a paper manufacturing plant. Other inventories also use the Holland typology in reporting assessment results. Among them are the Strong Interest Inventory (SII) (Hartson et al., 1994), the Career Assessment Inventory (CAI) (Johansson, 1986), and the Armed Services Vocational Aptitude Battery (ASVAB) (U.S. Department of Defense, 1993).

Evaluating Holland's Theory

Holland's theory has inspired extensive research and has arguably been subjected to more empirical tests than any other career theory (Spokane & Cruza-Guet, 2005). Gottfredson and Richards (1999) note that a major advantage of Holland's theory is that it provides a parallel way to describe people and environments. In 1996, Holland summarized research findings supporting the use of his typology to explain career certainty, change, and satisfaction. These findings focus on (a) relations between congruence and career outcomes, (b) methods for calculating constructs such as congruence, and (c) the application of Holland's theory to diverse populations.

Spokane et al. (2002) summarized the congruence-related research, noting that although results are somewhat mixed, there is a "modest relationship between person-environment fit and job satisfaction" (p. 400). Spokane, Fouad, and Swanson (2001) argued that most of the congruence-related research, especially in the early years, was correlational and therefore does not reflect the complexity inherent in person-environment interactions. Longitudinal, cross-sectional, and experimental studies are needed to more accurately represent person-environment interactions and measure the validity of the congruence construct.

Although there are data to support the importance of congruence to vocational satisfaction, research supporting the relationship between consistency and differentiation in vocational satisfaction has been weak. Research methodologies have not been sufficiently sophisticated to examine the complex processes related to consistency, differentiation, and relevant occupational outcomes (satisfaction, stability). To address this issue, Tracey, Wille, Durr, and Fruyt (2014) examined Holland's consistency and differentiation constructs by including the entire Holland profile (typically only the top two are used to determine consistency) and information on relative differences in all six scale scores, thus providing a more thorough definition of consistency and differentiation. They examined the relationship between these constructs and career certainty, career satisfaction, and occupational stability. Tracey et al. found support for the viability of consistency and differentiation as they relate to the outcomes used in the study (certainty, satisfaction, and stability). The methods used in this study suggest a potentially fruitful avenue for pursuing subsequent research related to consistency and differentiation.

Other studies provide intriguing data on the validity of Holland's theory. Miller (2002) investigated the degree of change in a male client's three-letter Holland code over 10 years (the client initially took the SDS at age 16). The man's code remained stable across a decade, supporting Holland's contention that SDS personality types remain stable over time. Lent, Brown, Nota, and Sorese (2003) examined the relationship of interest congruence to the occupational choices of 796 Italian high school students and found that interests were significant predictors of occupational choices for all Holland types.

Oleski and Subich (1996) studied 42 nontraditional students (mean age 34.4) in the process of changing careers. They found support for Holland's (1985a) assumption that people change careers to achieve greater congruence.
Lent and Lopez (1996) investigated the relationship between congruence indices and job satisfaction among adult workers. Although they found partial overlap among methods for calculating congruence, they noted the need for more research to understand the relations among indices of congruence, methods for coding work environments, and antecedents to congruence.

Tracey (2008) found that for college students enrolled in a career development class, the RIASEC model was linked to better career decision-making outcomes (students considering congruent career options have more career certainty and decision-making self-efficacy than those who do not adhere to the congruence principle). In a study comparing people who remain in the same career to those who change, Donahue (2006) found person-environment congruence to be related to career stability. Perdue, Reardon, and Peterson (2007) also found person-environment congruence to be associated with job satisfaction in a sample of 198 employees working for a multinational communications corporation.

Behrens and Nauta (2014) examined the effects of using Holland’s Self-Directed Search as a stand-alone intervention with college students. One group (n = 39) received the SDS as a stand-alone treatment, and another (n = 41) received no treatment. Four weeks after taking the SDS, students were considering more career alternatives but experienced no significant change in career exploration, career decision-making self-efficacy, career indecision, or seeking of career counseling services. Behrens and Nauta concluded that using the SDS as a stand-alone treatment is not effective for increasing career exploration in college students.

Achieving congruence is partially dependent on the availability of occupations that enable a worker to express his or her personality. Downes and Kroeck (1996) hypothesized that there is a discrepancy between normative occupational interests and the number of existing positions in the United States. Using normative interest data from the SDS and data extracted from the Monthly Labor Review, Downes and Kroeck found a lack of interest in conventional- and enterprising-type jobs compared to the number of available positions. They found the opposite with regard to the remaining Holland categories. For instance, there was excess interest among high school students for social-, artistic-, and investigative-type jobs compared to the number of available positions. Investigative- and realistic-type jobs represented high-interest areas for the adults in the study. Based on their findings, Downes and Kroeck called for a concerted effort to reshape the interests and skills of U.S. workers to meet the labor needs of corporations and educational institutions.

Ryan, Tracey, and Rounds (1996) and Rounds and Tracey (1996) studied the generalizability of Holland’s (1985a) model of vocational interests across ethnicity, gender, and SES. Ryan et al. found similar interest structures in the White and African-American high school students in their study. Ryan and her colleagues also found no differences in the structure of interests between low- and high-SES groups. A similar result was obtained when comparing low- and high-SES White groups. However, the low-SES African-American group was better fit by Holland’s model than was the high-SES African-American group. Both male and female students fit Holland’s model. Ryan and her colleagues concluded that Holland’s model is generalizable across ethnicity, gender, and socioeconomic status as defined in their study. Oliver and Waehler (2005) found support for Holland’s typology and its arrangement in circular RIASEC order in a sample of Native Hawaiians.

Mihalik (1996) examined whether clients’ types predicted reactions to counselor intentions. Using a sample of undergraduate college students, Mihalik found that clients’ vocational interests as measured by the SDS (Holland, 1987) were predictive of client reactions to counselor interventions. For example, participants with high enterprising-type scores responded positively to feeling challenged by their counselor, whereas participants with high social-type scores responded positively to feeling supported by their counselor.
Sverko, Bahaovic, and Medugorac (2014) conducted a validation study of the PDI-H and PDI-HS. The PDII is a new measure of RIASEC interest types with photographs of people engaged in typical job tasks, job titles, and short job descriptions. They found that the PDII, available online at careerassessment.eu, is a reliable measure of RIASEC types across the samples of middle school, high school, and university students they studied.

This brief compilation proves that Holland's theory has generated more research than any other career choice model, with much of the research supporting the theory (Holland, 1996; Spokane, 1985; Spokane et al., 2002). Holland's theory provides a clear link to practice: "The combination of empirical support and practical application accounts for the theory's popularity among the public as well as among professionals" (Spokane, 1996, p. 62). This being said, we believe that more research into the validity of Holland’s method across cultural contexts is needed.

**JOHN KRUMBOLTZ’S LEARNING THEORY OF CAREER COUNSELING**

John Krumboltz (b. 1928) and his colleagues (especially Lynda Mitchell and G. Brian Jones) developed a learning theory of career counseling comprising two distinct parts. The first focuses on explaining the origins of career choice and is labeled the social learning theory of career decision making (SLTCDM) (Mitchell & Krumboltz, 1996). The second focuses on career counseling and is labeled the learning theory of career counseling (LTCC) (Krumboltz & Henderson, 2002; Mitchell & Krumboltz, 1996). Because the SLTCDM identifies factors influencing the career decisions people make (and is, therefore, subsumed under the LTCC part of the theory), and because the LTCC explains what career counselors can do to help clients make effective career decisions, Mitchell and Krumboltz labeled the entire theory the LTCC.

LTCC is based on the application of Bandura's (1977, 1986) social learning theory to career decision making. Bandura's theory emphasizes the influence of reinforcement theory, cognitive information processing, and classical behaviorism on human behavior. Social learning theory "assumes that people's personalities and behavioral repertoires can be explained most usefully on the basis of their unique learning experiences while still acknowledging the role played by innate and developmental processes" (Mitchell & Krumboltz, 1996, p. 234). Social learning theory also assumes that "humans are intelligent, problem-solving individuals who strive at all times to understand the reinforcement that surrounds them and who in turn control their environments to suit their own purposes and needs" (Mitchell & Krumboltz, 1984, p. 236). Bandura (1986) described the interaction of environment, self-referent thought, and behavior as the "triadic reciprocal interaction system" (p. 6).

Krumboltz and colleagues drew on these theoretical assumptions in developing LTCC. As noted, SLTCDM describes the factors influencing people's career decisions and LTCC describes what counselors can do to help them make effective career choices.

**Social Learning Theory of Career Decision Making**

The SLTCDM identifies four factors that influence how people make career decisions:

1. **Genetic endowment and special abilities.** Genetic endowments are inherited qualities such as sex, race, and physical appearance. Special abilities such as intelligence, athletic ability,