CHAPTER TWO

The Psychology of Interests

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An extensive literature covers the assessment of vocational interests. These studies generally examine the construction, validation, and interpretation of psychometric scales that operationally define vocational interests. The empirical approach to defining interests, sometimes referred to as "dust-bowl empiricism," has succeeded in producing myriad inventories that counselors routinely use to assess the occupational preferences of clients who seek career counseling. Given the extensive empirical research on vocational interests and the proven usefulness of interest inventories, it seems surprising that vocational psychologists have only infrequently attended to definitions of and theories about vocational interests. Because of this relative inattention leading researchers have characterized the literature dealing with the psychology of vocational interests as self-contradictory, confusing, rambling, and formless (Crites, 1969; Darley & Hagenah, 1955; Dawis, 1991; Holland, 1976; Super, 1960). Allport's (1946) comment, written over 50 years ago, remains true today: "One of our greatest defects is our lack of a consistent or adequate theory of interest" (p. 341). Berlyne (1949) observed that although there were some general agreements, "the problem of the definition of interest, let alone that of the psychology of interest, cannot be said to have been solved" (p. 188). The definitions of interest that do appear seem disparate and generally fail to distinguish interest from other motivational constructs. Hypotheses and theories about the origins and development of vocational interests seem riddled with cliches that lack content and cannot be scientifically examined (Holland, 1966). In short, the accumulated literature on vocational interests is more empirical than conceptual, with little connection between linguistic explications and operational definitions.

The disjunction between the definitions provided by conceptual explanations and by empirical measures has slowed progress in theorizing about interest as a psychological construct. Beginning with landmark publications by Bordin (1943) and Carter (1940), even theories of vocational interests have relied on operational definitions of the construct. A half century later, Lent, Brown, and Hackett (1994) continued the tradition of dustbowl empiricism in using an operational rather than a conceptual definition of interest in their self-efficacy theory about the origins and development of career and academic interests. Similar to Strong (1943) and many psychometricians before them, Lent and his colleagues "define vocational interests as patterns of likes, dislikes, and indifferences regarding career-relevant activities and occupations" (p. 88). A conceptual definition of interest that coincides with Bandura's (1997) sociocognitive theory might more completely illuminate relationships between interests and self-efficacy perceptions. Furthermore, using conceptual definitions when constructing interest inventories and theories would link research on vocational interests to mainstream psychology, a link that is still missing 20 years after Holland (1976) criticized vocational psychology for being unable "to draw on the strength of personality and learning theory and vice versa" (p. 523).

Linking conceptual definitions to hypotheses about the origins and development of vocational interests could also enhance practice. For example, this link might improve inventory construction. It also could prompt innovation in career counseling designed to help clients explore their vocational interests. Currently counselors who address the role of vocational interests in their clients' career development seem to rely excessively on interest inventory interpretation as the paramount intervention. Highlighting the role of interests in personality integration, identify formation, and social adjustment might encourage counselors to examine more closely the subjective meaning of interests in a client's life story (Savickas, 1995).

This chapter reviews the literature that addresses conceptual definitions of interest and theories about the origin and development of interests. In so doing, it seeks to elucidate the meaning of interest as a psychological state and to describe theories of vocational interests as a personality trait. The chapter begins with a section that examines the etymology and technical definitions of the word *interest*. The next section deals with interest as a state, and the third section concentrates on interests as a trait. The fourth and final section addresses the determinants of interests by discussing theories about the origins and development of vocational interests as a personality disposition. A brief conclusion attempts to

describe succinctly interest, interests, and their determinants. Now let us begin with the etymology of the word *interest.*

DEFINITIONS OF INTEREST

In Latin, *inter est* is the third person, singular, present indicative of *inter sum* which literally means "to be between." In the English language the word *interest* signifies *between, attend,* and *difference* (Onions, 1966). The most basic meanings of *interest* denote intervening between two things. According to the *Oxford Latin Dictionary* (Glare, 1982) the variable that intervenes can be either *space* (i.e., to lie between) or *time* (i.e., to lapse between). Other meanings revolve around *attention:* "to be present as an onlooker"; "to attend as a participant"; and "to be a member of a group." The last set of definitions pertain to *difference:* "there is a difference" and "to be different"; "to make a difference"; and "to be of advantage." Integrating these etymological meanings into a general statement, one could conclude that interest occurs when, in the belief that it will be advantageous to the self, individuals attend to an environmental object and thereby narrow the distance between themselves and that object.

This general definition based on etymology resembles definitions that appear in specialty dictionaries. For example, *A Comprehensive Dictionary of Psychological and Psychoanalytic Terms* (English & English, 1958, p. 271) defines interest as "an attitude or feeling that an object or event makes a difference or is of concern to oneself; a striving to be fully aware of the character of an object." The *Dictionary of Behavioral Science* (Wolman, 1973, p. 199) defines interest as "an enduring attitude consisting of the feeling that a certain object or activity is significant and accompanied by selective attention to that object or activity." Both dictionaries state that interest is required for learning. Essentially these definitions make two claims about the state of being interested: First, interest involves an attitude or pleasurable feeling that evaluates something as beneficial to the self; and second, interest causes one to attend to that object.

In contrast to psychologists, who emphasize attention and feeling, sociologists emphasize potential benefits in their definitions of interest. For example, the *Encyclopaedia of the Social Sciences* (Seligman, 1937, vol. 4) defined interest as "what people actually seek." Similarly the *HarperCollins Dictionary of Sociology* (Jary & Jary, 1991, p. 245) defined interest as "the particular outcomes held to

benefit a particular individual or group." For Karl Marx, interest meant economic and political rights and privileges (Barber, 1957). Awareness of these interests is a central component in Marx's concept of "class consciousness," that is, consciousness of the common interests shared by members of a social class. In contrast, American sociologists, such as Small (1905, pp. 197–198), introduced the concept of interest into sociology mainly as a means by which to derive social phenomenon from individual psychological states. For example, MacIver (1937) built a comprehensive theory of society and social relationships on the foundation of interests. He proposed that the psychological construct of interest logically precedes social relationships, associations, and institutions. Defining interests as "objects of consciousness," MacIver designated them as "anything, material or immaterial, factual or conceptual, to which we devote our attention" (p. 12).

The sociologist's orientation toward interest is shared by practitioners of career counseling, who encourage clients to consider interests as a guide in life planning. For example, the definition offered in the glossary of guidance terms by the National Vocational Guidance Association (now the National Career Development Association) (Sears, 1982) concentrates on the use of interests: "Indications of what an individual wants to do and/or reflections of what he/she considers satisfying" (p. 140). Obviously this utilitarian definition ignores the psychological state of being interested and views an individual's interest as a link to society's occupations.

Conceptual definitions of interest, such as those that appear in technical dictionaries, provide a context for examining definitions constructed by vocational psychologists who have studied interest empirically. Certainly the central figure in this literature, and author of the most influential definition of interest, continues to be E. K. Strong. In 1955 Strong essentially accepted the definition of interest in Webster's dictionary: "a propensity to attend to and be stirred by a certain object." Strong extended this definition of interest to include four qualitative attributes. The first two qualities that Strong attributed to interest were persistent *attention* and a *feeling* of liking for an object. The third quality Strong called *direction* because liking steers a person toward an object and dislike steers a person away. Strong's fourth attribute of interest was *activity,* in that an interested person does something regarding the object.

In addition to characterizing interest with these four qualitative features, Strong identified two quantitative attributes of interests, which he called *intensity* and *duration.* According to Strong, "Intensity pertains to preference for one activity rather than another" (p. 138), while duration refers to the interval of time

in which overt behavior occurs. Strong (1955) concluded his explication of interest attributes with the following definition:

> Interests are then activities for which we have liking or disliking and which we go toward or away from, or concerning which we at least continue or discontinue the status quo; furthermore, they may or may not be preferred to other interests and they may continue over varying intervals of time. Or an interest may be defined as a liking/disliking state of mind accompanying the doing of an activity, or the thought of performing the activity. (p. 138)

A second influential definition, proposed by Super, addressed the origin and development of interests as a personality trait or disposition. In an encyclopedic book on *Appraising Vocational Fitness by Means of Psychological Tests,* Super (1949) attributed the origin of vocational interests to four sources: heredity, environment, ability, and personality.

> Interests are the product of interaction between inherited aptitudes and endocrine factors, on the one hand, and opportunity and social evaluation on the other. Some of the things a person does well bring him [or her] the satisfaction of mastery or the approval of his [or her] companions, and result in interests. Some of the things his [or her] associates do appeal to him [or her] and, through identification, he [or she] patterns his [or her] actions and his [or her] interests after them; if he [or she] fits the pattern reasonably well he [or she] remains in it, but if not, he [or she] must seek another identification and develop another self-concept and interest pattern. (Super, 1949, p. 406)

In this chapter I use Strong's definition of interest and Super's explanation of interests to examine systematically the meaning, origin, and development of vocational interests. The next major section of the chapter closely examines the qualitative attributes in Strong's definition of a specific interest, whereas the subsequent major section scrutinizes the quantitative attributes that characterize a general group of interests.

ELEMENTS OF INTEREST

The four qualitative attributes that Strong used to characterize interest implicitly summarize the contributions of four major systems of psychology that were prominent early in this century: associationism, structuralism, purposivism, and functionalism. The associationist system of psychology emphasized cognition, the structuralist system emphasized affection, the purposivist system emphasized conation, and the functionalist system emphasized action (Woodworth, 1964). The following four parts in this section of the chapter each examine one qualitative feature of interest by describing the views advanced by the system of psychology that emphasized that feature, beginning with associationism.

The Associationist View: Interest Focuses Attention

Fundamentally interest denotes awareness of and attention to some environmental person, object, or activity. In the first psychological theory about interest, Johann Friedrich Herbart (1891, p. 167) defined interest as an attitude of the mind—a noticing with attention. Without awareness and attention to something, there can be no interest. Accordingly, perceptual psychologists such as Combs and Snygg (1959, p. 168) asserted that interest helps to organize the perceptual field. High interest narrows the perceptual field, whereas indifference widens the field. Kitson (1925, p. 25) emphasized a narrow perceptual field when he defined interest as "being engaged, engrossed, or entirely taken up with some activity because of its recognized worth." McDougall (1929) believed that "interest determines attention . . . that attention can readily be drawn to it and, when so drawn, will usually be sustained and keen, or as we say, concentrated" (p. 274). Roe and Lunneborg (1990, p. 75) emphasized that the attention associated with interest must be automatic or effortless. This assertion harkens back to Herbart's (1891) contention that things that arouse nonvoluntary attention are interesting, whereas things that require attention through voluntary effort are uninteresting.

In his influential theory of education called the doctrine of interests, Herbart (1891) defined interest as a reaction of knowledge that determines the object of attention. The knowledge, which reacts to environmental objects, already exists in the mind, which Herbart called an "apperceptive mass" of former experience organized in groups of related ideas. Herbart identified six of these groups: empirical, speculative, aesthetic, sympathetic, social, and religious. These six interests have been wrongly called "interests" by orthodox Herbartian psychologists, who viewed interest as a mental state and claimed that "the latent group of ideas bearing on any topic constitute an interest in the sense of a permanent disposition of the mind" (Herbermann, Pace, Pallen, Shahan, & Wynne, 1913, p. 75). The true essence of interest, according to Herbart, is the assimilation of a new idea by a predominant ideational group in the mind. When an individual notices an object, the perception evokes in the mind a particular group of ideas that rise above the threshold of consciousness to embrace the new idea. Interest develops, according to Herbart, "when already strong and vivid ideas are hospitable towards new ones since pleasant feeling arise from the association of old and new ideas. Noteworthy past associations motivate apperception of current ones" (Grinder, 1989, p. 8). Assimilation, or the process of apperception, works

best when the new idea is partially familiar; foreign or isolated perceptions are difficult to incorporate because the apperceptive mass contains no preexisting group of ideas to welcome the new perception. Herbart's conception of the actual state of being interested involves a basic meaning of interest as an interval of time: "Interest entails a consciousness accompanying attention which persists during the interval between first observation of the new percept and final attainment of the object" (Herbermann et al., 1913, p. 76).

Using the core constructs of interest and association, Herbart's theory stated that education starts with an appeal to students' present interests and then tries to broaden those interests by associating new and varied interests. Herbart's theory prompted educators and psychologists to reconsider their belief that interests were innate; gradually they began to view interest as learned. Herbart's enduring educational doctrine probably explains why dictionaries of psychological terms explicitly state that interest is essential to learning and why interest traditionally has been a central topic in the psychology of learning (Dewey, 1913; Thorndike, 1935a & b). In fact, Herbartian psychology propelled American educators to found in 1895 the National Herbart Society for the Scientific Study of Education (changed in 1902 to the National Society for the Scientific Study of Education).

In her classic book on *Emotion and Personality,* Magda Arnold (1960) also accentuated the relation of interest to curiosity by defining interest as an impulse to know that centers around an object. Arnold believed that "the first movement of the desire to know seems to be attention" (1960, p. 201). She emphasized that an interest is to want to know, not to have or possess. Interest seems to diminish with possession in that an unfinished task is more interesting than a finished one, and a new acquaintance is more interesting than an old friend. Theorists of aesthetics use this concept to assert that works of art, music, and literature best maintain interest when they balance the familiar and novel.

The Structuralist View: Interest Arouses Feeling

Strong's (1955) second qualitative feature of interest describes a feeling, in particular a simple sensation of pleasantness. Several theorists have chosen to emphasize this attribute of interest. For example, Gardner Murphy (1948) explained this conception succinctly when he defined interest as "the attitude with which one attends to anything; the feeling accompanying attention" (p. 989). In the same vein Super and Dunlap (1951) defined interest as the things to which an individual "responds with a feeling of pleasure" (p. 100).

Whether feeling accompanies, causes, or is identical to attention was hotly debated around the turn of the century (Arnold, 1906a; Hebermann et al., 1913). We have already learned that Herbart's associationist theory, although fundamentally identifying interest with the attention, also asserted that a pleasant feeling accompanies this attention (Herbermann et al., 1913, p. 76). Thus orthodox Herbartians viewed interest as a state of consciousness that included an attentive state and an affective feeling. Apparently one of the first writers to challenge this view was John Stuart Mill (1869) who, in arguing that interest is a pleasurable or painful feeling that fixes attention of the mind, depicted interest as a feeling antecedent to attention. Stumpf (1883) articulated the third view, that "attention is identical with interest, and interest is a feeling" (p. 68). The debate about the exact relation of attention and feeling within interest slowly dissipated, and a group of prominent psychologists advanced the ideas that interest is a feeling. The system of psychology most associated with the affective perspective on interest is structuralism.

Adherents to the structuralist system of psychology emphasized the idea that interest is consciousness of a pleasant feeling. Structuralists agreed with associationist psychologists in defining interest as a complex thought with an element of feeling. However, by focusing almost exclusively on the feeling component of interest, structuralists differed from associationists, who emphasized the cognitive aspect of interest. For example, Titchener (1898), a structuralist who defined psychology as the science of consciousness, viewed interest as the feeling that accompanies the state of attention.

Structuralists (now called existentialists) used introspection to study the experience of interest as the feeling accompanying attention. Unfortunately, they concluded that it was extremely difficult to study interest with their method of experimental introspection because their research participants seemed unable to describe their feelings accurately. When their participants tried to attend to the state of being interested, interest itself evaporated. Titchener (1899) described this difficulty, using the following example: "If we wish to get pleasure from a beautiful picture, we must attend to the picture: if, with our eyes on it, we try to attend to our feelings, the pleasantness of the experience is gone" (p. 108). Titchener and other structuralists, however, were able to use indirect methods to characterize interest with three attributes: quality (i.e., pleasant or unpleasant), intensity, and duration. Furthermore, Titchener (1899) differentiated interest from sensation by explaining that blue is in the sky, yet the pleasant feeling about

blue is in the individual: "Pleasantness is always within oneself . . . Sensations are the objective and the affections the subjective mental elements" (pp. 103–104).

This structuralist conclusion still merits consideration today because inventories and counselors typically designate an interest using the names of the stimulating objects and activities that engage attention, not the person's experience of or motivation for attending. For example, Fryer (1931, p. 15) wrote that "interests are the objects and activities that stimulate pleasant feeling in the individual." At the same time, Fryer warned counselors that this perspective on interest as an object of attention directs counselors' concentration away from the human drama and philosophy of life that prompt a person to be interested in certain stimulating objects and activities. Fryer implored researchers to examine interest as a subject of experience as well as an object of attention. Unfortunately, most researchers ignored Fryer's sage advice as they experimentally studied interest with inventories.

To this point we have seen that in the early work on interest, associationists and structuralists concentrated on attention and feeling. Later work on interest, conducted by purposivists and functionalists, concentrated on purposeful behavior. Functionalists emphasized behavioral aspects of interest, whereas purposivists emphasized conative or directional aspects.

The Purposivist View: Interest Steers a Direction

The third qualitative element in Strong's (1955) definition of interest involves steering a direction toward or away from an object. Recall that Strong referred to the simple sensation or feeling of interest as *pleasantness*. He preferred to use *liking* when referring to an individual's evaluation of an object. A response of liking connotes appetition or conation, the forte of the purposivist system of psychology.

Adherents to the purposivist system of psychology conceptualized purpose as a molar fact composed of desire and foresight. To exemplify what they meant by a molar fact, they compared purpose to water. Although composed of hydrogen and oxygen, water is a fact in itself. Similarly interest includes attention and feeling, yet, like water, interest is a fact in itself. Gordon Allport (1946) drew this same conclusion when he resolved that interests may be functionally irreducible. Purposivists defined the molar fact of interest, in motivational terms, as an inclination or wish.

Among the first purposivists was Stumpf (1883) who, as noted previously, argued that "attention is identical with interest, and interest is a feeling. That is

all there is to it" (p. 68). But later, in response to his critics, Stumpf revised his theory to state that attention and interest are both forms of will. Stumpf (1890) conceived of interest as "attention-exciting" and a feeling of desire that "can pass into a volition as soon as the object seems probable and attainable" (p. 283). George Frederick Stout (1896, p. 166), another prominent purposivist, also equated interest with conation in arguing that interest is a conative tendency.

Probably the first purposivist to formulate a comprehensive psychology of interest as a conative state of liking was Felix Arnold (1906b), who viewed interest as a striving toward an anticipated gratification. Because he viewed striving toward a future state of pleasure as the essence of interest, Arnold (1906b) contended that associationists and structuralists incorrectly identified interest with cognitive meaning or felt worth. Arnold preferred to view attention and pleasant feeling as concomitants of interest. He explained that attention is a process of control and adjustment over a situation. Attention narrows and illuminates the perceptual field, resulting in a state of increased clearness and distinctiveness of an object. Attention is thus concomitant with, yet different from, interest. Similarly Arnold (1906b) distinguished interest from pleasant feeling in asserting that interest is not exactly a feeling of pleasure, rather "interest is potential pleasure in that it may so end" (p. 292). Thus pleasure may be the starting point for interest, but it is not interest as such. If an object pleases yet carries no future reference, there is pleasure but not interest. According to Arnold, "Any situation involving interest is thus seen as to be connected with the future of the self concerned" (p. 295). Because of his belief that interest points a direction ahead into the future, Arnold criticized Herbartian associationists for viewing interest as a system of ideas rooted in the past. He disparaged Herbart's view of interest as a "mere tickling of the sensations for the purpose of rousing attention" (p. 315).

Arnold went to great lengths to distinguish interest from other forms of striving. He differentiated expectation from interest by arguing that expectation involves only a passive waiting for a future pleasure. In contrast, desire involves an active struggle to remove barriers to future pleasure. He called curiosity a "tentative interest" about how something might influence future pleasure. Interest itself, more fully than curiosity, understands how an object will influence future pleasure. Interest incites repeated striving, but with fuller knowledge the striving of curiosity ceases. In the end Arnold defined interest as a "felt bodily attitude, tending serially to realize a future situation" (p. 305). Such interest is typically accompanied by a cognitive representation of the situation to be realized and by feelings of anticipation.

William McDougall, a prominent advocate of purposive psychology, formulated another conative theory of interest, in part to advance the theorizing of Stout. McDougall (1908), objecting to Titchener's narrow view of psychology as the science of consciousness, was the first to proclaim psychology as the science of conduct or behavior. McDougall argued that behavior strives to an end and the individual understands this striving as purpose.

McDougall (1929) denounced Herbart's (1891) theory of interest as an intellectualist doctrine. He objected to Herbart's claim that interest in any object depends on the possession of appropriate knowledge ("apperceptive mass") related to the object. McDougall preferred to link interest to striving rather than to knowing: "Interest is conative rather than cognitive; it depends upon the strength of the conative tendencies excited, rather than upon the extent and variety and systematic organization of the cognitive systems of the mind" (p. 277). McDougall elaborated this distinction as follows:

> Interest, being essentially conative, is a matter of enduring settings of our conative tendencies or impulses, and is therefore determined by our instincts or sentiments. Knowledge about an object is not in itself a condition of "interest"; though such knowledge favors the sustaining of attention; without such knowledge our attention to any object, determined by conative interests, soon wanes; because we quickly exhaust upon it our limited powers of discriminative perception. (p. 276)

Like Arnold (1906a) before him, McDougall acknowledged a relation of attention and feeling to interest. Rather than just calling cognition and emotion concomitants of interest, McDougall hypothesized a temporal order starting with cognitive awareness of an object. The sequence of interest, McDougall believed, starts with attention because "to have an `interest' in any object is then to be ready to pay attention to it. Interest is latent attention; and attention is interest in action" (p. 277). Thinking about the stimulating object then evokes some conative striving toward the object. In turn, this striving produces a pleasant feeling. In short, McDougall viewed interest as a knowing-striving-feeling cycle.

Vocational psychologists adopted the view of interest as conation in constructing interest inventories that operationally defined interest as a "response of liking" to an object or activity presented as an inventory item (Strong, 1943, p. 6; Super & Dunlap, 1951, p. 100). For example, Fryer (1930) proposed an "acceptance-rejection theory of interest." Fryer's theory stated that interest inventory items (typically objects, people, and activities) are stimuli that cause feelings of attraction or aversion, which are indicated by the direction and strength of the response to the item. Fryer defined interest as a response of acceptance that

guides movement toward an exciting stimulus, and aversion as a response of rejection that guides movement away from the exciting stimulus. He viewed acceptance and rejection, the determinants of direction, as qualitative aspects of interest. The quantitative element of interest, according to Fryer (1931, p. 352), involves the degree of acceptance or strength of response. He argued that, once initiated, interest provides its own quantitative energy or motivational drive in proportion to the strength of acceptance.

Strong (1943) also characterized his own view as an acceptance-rejection theory of interest. Strong explained his theory by stating that acceptance incorporates two dimensions: the simple sensation of pleasantness and the conative liking for an object. For Strong (1943) this acceptance or interest guides purposive behavior because the "essence of such behavior is rejecting the wrong and selecting the right" (p. 8). Other prominent interest researchers have underscored the directional element in interest. For example, Paterson and Darley (1936, p. 119) defined interest as "tendencies toward certain forms of activity or toward certain types of contact with people." For Allport (1961, p. 237) interest acts "as a silent agent for selecting and directing whatever is related to that interest." Todt and his colleagues (Todt, Drewes, & Heils, 1994; Todt & Schreiber, 1996) concurred in defining interests as "activating and steering motives (dispositions), which appear generalized as structures of orientation and which appear in a specified manner as preferences of activities" (p. 2).

Tyler (1964) chastised counselors who fail to understand that interest inventories measure the direction of interests, not their strength. She concluded that counselors' most common error in interest inventory interpretation is thinking that the scores indicate "how much" interest a client possesses, when in fact the scores only indicate "what kind" of interests a client possesses. Tyler (1964) urged counselors to remember that interest inventories measure "concepts like direction, pattern of choices, or program for life" (p. 187). She concluded that "At present we have no technique except behavior observation for assessing how strong a person's drive is in the direction in which he [or she] wishes to go" (p. 186).

Because liking is an important element in interest, it bears noting that liking by itself does not constitute an interest. Magda Arnold (1960, p. 200) explained that liking in itself is a sentiment (cf. McDougall, 1929)—that is, a single basic emotional reaction that endures and develops. As examples of sentiments Arnold cited love of home, family, or country. Individuals react emotionally and overtly when presented with these objects. When one experiences a sentiment, that sentiment

grows. For example, liking something about one's family makes one love the family more. Arnold contrasted sentiment and interest in stating that sentiment propels one to possess an object, whereas interest propels one to seek to know about it. In fact, possession seems to diminish interest in an object.

The Functionalist View: Interest Involves Activity

Although sharing the purposivists' concern with conation or behavioral tendencies, adherents to the functionalist system of psychology went even further in concentrating on action itself, particularly the function of behavior. Functionalists sought to transform American psychology into the science of how the mind functions—that is, adapts to the environment. While purposivists focused on "why," functionalists focused on "what for" and "how." For example, a prominent European functionalist, Claparede (1930) asked rhetorically, "What is the use of behavior?" and then answered that behavior functions to meet the individual's needs and interests (p. 79). Personologists, such as Allport (1961), also asserted that acting interested involves engagement in a "culturally elaborated activity" (p. 225) and involves "participation with the deepest level of motivation" (p. 107).

Dewey, one of the founders of American functionalist psychology, concentrated much of his early work on the topic of interest. At the 1896 annual meeting of the Herbart Society, Dewey attacked Titchener's science of consciousness. He objected to the introspectivist study of interest as a static, cross-section of momentary excitation. For Dewey (1913), "to be interested in any matter is to be actively concerned with it. Mere feeling regarding a subject may be static or inert, but interest is dynamic" (p. 16). Dewey bolstered his argument by complaining that structuralists studied (a) how to catch attention rather than how to hold attention and (b) how objects arouse energy rather than the "course that energy takes, the results that it effects" (p. 91). As an alternative to introspective analysis of elements of consciousness, Dewey (1896) proposed that the minimal unit of analysis for psychology should be the "reflex arc," meaning a stimulus *and* response and the function they serve. Titchener responded to Dewey's critique by arguing that structuralists studied "is" whereas functionalists studied "is for" (Grinder, 1989, p. 10).

Dewey's attack on structuralism was published as a supplement to the first yearbook of the Herbart Society, *Interest in Relation to Training of the Will* (1903). Eventually Dewey (1913) expanded the monograph into a book, *Interest and*

Effort in Education, which also addressed the controversy between Herbartian psychologists, who advocated using interest to motivate students, and William T. Harris and his followers, who advocated using effort to build students' character. Dewey rejected both claims in concluding that interest leads to effort. Dewey argued that interest signals a first step in ongoing experience, whereas effort brings about the conclusion. Later in the book Dewey criticized Herbartian psychologists for viewing interest as passively arising from the association of ideas. As a functionalist, Dewey (1913) viewed "interest as an activity that moves toward an end" (p. 92). Thus Dewey believed that individuals "take interest" (p. 16) in objects and activities not because they are intrinsically interesting but because they are instrumental in achieving a purpose. Accordingly, the best way to understand an individual's interest is to focus on the function it serves, not on the interest itself.

From analyses based on his reflex arc paradigm, Dewey (1913) concluded that interest signifies an "organic union" among the person, the materials, and the results of action (p. 17). This union means that the individual identifies self with a certain course of action (p. 43). Dewey (1913) wrote that interest marks "an identification in action, and hence in desire, effort, and thought, of self with objects; namely, with the objects in which the activity terminates (ends) and with the objects by which it is carried forward to its end (means)" (p. 90). In the same book Dewey wrote that the "genuine principle of interest is the condition of identification, that is, the identity through action of the growing self with some object or idea" (p. 7).

The emphasis on interest as functional activity was particularly strong at Columbia University, where Dewey taught. For example, at Teachers College, Columbia University, both Thorndike and Kitson championed the functionalist view of interest. Thorndike (1935b) noted that interest as an "active force works forward to evolve, then and there, behavior which the animal would not have displayed except for the presence of the acting want" (pp. 4–5). Kitson (1925) subscribed to Dewey's view of interest as action in resolving that being interested in something "is to endeavor to identify oneself with it" (p. 142). Kitson asserted that interest should be viewed neither as an entity within an individual nor as a thing to catalogue. He propounded the view that interest denotes activity and recommended avoiding use of the noun *interest,* preferring instead the verb form *to be interested.* Kitson (1925) linked the activity dimension of interest to cultivating new interests. To help clients adopt a new interest Kitson advised counselors to "give information and arouse activity" (p. 27). Information about an object can create attention, yet

arousing interest is to arouse activity toward the object. Strong (1943) seemed to agree with Kitson's enjoinment about interest as an activity: "Interest is an aspect of behavior, not an entity itself" (p. 8). Or as Strong (1955) explained, the interested person does something to or with an object. Nevertheless, Strong (1943) defended the use of nouns, the names of things, as interest inventory items because "an activity toward or with the object is assumed" (p. 7). And activity, or doing something regarding the object, was the fourth and final qualitative attribute in Strong's (1955) characterization of interest.

Whether or not Strong did so intentionally, his description of four qualitative attributes of the state of being interested succinctly summarized the contributions of four major systems of American psychology that were prominent in the first third of the century: associationism, structuralism, purposivism, and functionalism. In short, these systems of psychology taught us that interest focuses attention, arouses feeling, steers a direction, and involves activity.

INTEREST CAN BECOME INTERESTS

To this point we have scrutinized interest as a psychological construct by examining four qualitative attributes that characterize interest. As a psychological state, interest describes an individual's *position* in relation to a single, specific object or activity. In contrast, a homogeneous group of specific interests constitutes a *disposition,* that is, "a relatively stable and consistent attitude" (Wolman, 1973, p. 103). An interest disposition, or dispositional response tendency, denotes a trait that is "consistent, persistent, and stable . . . and determines to a great extent which stimuli will be perceived (selective perception) and what kind of response will be given selective action" (Wolman, 1973, p. 389). Interests, being plural, are characterized by quantitative attributes. The shift from a singular interest to plural interests involves a move from verb to noun, from state to trait, from percept to concept, and from awareness to self-awareness. Following this logic, interests are characterized by quantitative attributes such as frequency, persistence, habit strength, and intensity.

Interests Recur

Obviously the word *interests* denotes more than a single interest. Consider as an example five states of being interested that Mary Ann experienced last Sunday: She liked changing spark plugs in her car, enjoyed repairing the lawn mower,

renewed her subscription to *Road and Track* magazine because she enjoys reading it, thought that a poem she read was inspiring, and had fun fishing at the pond. An observer such as a parent or career counselor might categorize Mary Ann's specific "likes" as follows: mechanics (3), reading (2), and nature (1). The observer might conclude that Mary Ann frequently initiated mechanical interests or that her mechanical interests recur.

Interests Endure

The counselor might do more than just count the frequency of Mary Ann's five interests. She might determine the interval of time Mary Ann spent at each of the five activities. Not only do interests recur, they endure in the sense that individuals tend to extend or continue activities that absorb their attention. This continuation of interests conveys the meaning of duration, one of Strong's (1955) two quantitative elements of interests. Strong's use of the word *duration* coincides well with *interval*, which is a root meaning of the Latin *inter sum*. Allport (1961) addressed duration when he referred to interests as "tension maintained" (p. 223) and defined interest as "a lasting tensional condition" (p. 237). Walter VanDyke Bingham (1937) also emphasized duration when he characterized the behavioral manifestation of interests as persistence at an activity. Bingham asserted that interest prolongs an activity because it yields satisfaction. He emphasized that interests relate to initiation of and persistence in an activity, not successful performance of that activity.

Interests Show Habit Strength

The strength of interests can be measured by the frequency and duration of the habitual response. Habit strength of interests can also be operationally defined by the degree of stimulation required to activate them, as in tachistoscope studies of interests (see Bellido, 1922; Crites, this volume). However, absolute strength, as a quantitative aspect of general interests, has typically been ignored in favor of relative strength of interests. Strong (1955) considered the relative strength of interests, which he called intensity, as the second quantitative attribute of interests.

Interests Compete with Each Other

The intensity of interests is typically addressed in terms of competing interests—that is, ipsatively rather than normatively. A general interest coexists with many other general interests as part of an individual's personality pattern. As a group, general interests can be viewed as "possibility-processing structures" through

which prospects may be screened (Tyler, 1978). Thus individuals use their hierarchy of interests to process and choose which of many possible selves to actualize. In so doing, individuals reveal the relative strength or intensity of their interests in "preference for one activity rather than another" (Strong, 1955, p. 138). For example, a sports enthusiast might choose to watch a televised tennis match rather than a football game.

Counselors typically assess the intensity of a general interest (i.e., an interest disposition) in comparison to other similar traits, not as an isolated trait. The rank of a general interest in a hierarchy of general interests indicates its intensity or relative strength. Intensity or relative strength, not habit strength, is shown by interest inventory profiles. Recall that Tyler (1964, p. 186) chastised counselors for mistaking interest inventories as measures of interest strength. In our language herein, this basic mistake involves interpreting profile level as a measure of habit strength. Profile level should be ignored and attention concentrated on profile shape, which does show intensity. Recently Prediger (1998) has empirically shown that, for homogeneous scales, profile level does not indicate strength of interests. Predictions made from profile shape (relative strength of interest) alone are not improved by adding data about profile level (see Gottfredson & Jones, 1993). Prediger hypothesized that profile level reflects the response style of "yea saying versus nea saying," not the strength of interests.

Interests Are Scale Scores

Recall that Strong (1943) operationally defined an interest as a response of liking to an inventory item. Accordingly, interest inventory items each measure a specific interest. Summing these responses produces scores for homogeneous scales, scores that represent general interests as a disposition or trait. Inventories refer to these general interests by distinctive yet similar names. For example, Mary Ann's interests might result in high scores on the Outdoor and Mechanical scales in the *Kuder* (Kuder & Zytowski, 1991), the Realistic scale in the *Self-Directed Search* (Holland, Powell, & Fristsche, 1994), and the Nature, Agriculture, and Mechanical Activities scales in the *Strong Interest Inventory* (Harmon, Hansen, Borgen, & Hammer, 1994).

The empirical scales in interest inventories such as the *Strong* and the *Kuder,* composed of heterogeneous items, depict neither specific interest nor general interests. Instead, these scores indicate similarity or degree of fit between an individual's interest pattern and the interest patterns empirically identified for selected occupational groups such as engineers and psychologists. For example, a score on the Lawyer

scale of the *Strong Interest Inventory* indicates how well a client's pattern of choices resembles the choice pattern that characterizes lawyers. Tyler emphasized that an individual's occupational scores on the *Strong* reflect his or her pattern of dislikes or rejections as well as likes. Tyler (1964) considered this to be crucial because these options show "the process by which patterned interests are shaped" (p. 187). Tyler disliked homogeneous interest scales because, in summing like responses while ignoring indifferent and dislike responses, basic interest scales do not reveal an individual's unique life pattern. For Tyler, dislikes are as important as likes in understanding a person, because rejections are important factors in shaping individuality. Tyler preferred interest inventories such as the *Strong* and the *Kuder* because they use "Like," "Dislike," and "Indifferent" responses in their scoring keys. According to Tyler, scores on these empirical scales provide a "representation of the ways in which the individual has dealt with possibilities in the past as they arose. This is a concept difficult to incorporate into trait psychology that has dominated the study of individual differences" (p. 146).

Despite Tyler's criticism, there are important advantages to homogeneous content scales scored only for like responses. Campbell, Borgen, Eastes, Johansson, and Peterson (1968, p. 1) asked rhetorically, "What does it mean to have interests similar to lawyers?" General interest scales address this question because they reflect clusters of related interests and clearly specify the pattern of work activities that an individual likes. Day and Rounds (1997) argued persuasively that because homogeneous scales actually measure interests as dispositional traits, these scales should play a central role in career counseling. Rationally constructed, homogeneous interest scales should be interpreted to heighten a client's self-awareness of general interests; empirical scales can be interpreted to identify occupations that fit a client's interest pattern.

Interests Symbolize the Self

To illustrate how interests become incorporated into self-concepts, let us return briefly to Mary Ann and her mechanical interests. Clearly the two most obvious quantitative elements of Mary Ann's interests are frequency and duration. The number of specific interest(s) that form her "mechanical interests" and the amount of time that she engages in them, taken together, constitute a pattern of response to environmental stimuli. Once Mary Ann recognizes, either by herself or with the aid of an interest inventory interpretation by a counselor, her pattern

of responding positively to and persisting at activities involving mechanics, she must choose whether or not to label herself as having "mechanical interests." Choice plays a role in forming general interests because self-conscious pattern recognition requires effort and application. Through self-conscious, recursive thinking Mary Ann actually must choose or refuse to construct a mental representation of herself as having mechanical interests. She may readily add this to her existing self-concepts or resist identifying with stereotypical masculine interests (see Gottfredson, 1996). If Mary Ann adds this self-concept, then her self-representation of a general response tendency incorporates her pattern of mechanical interests into her psychosocial and vocational identity.

The symbolic representation of an interest disposition through language plays a significant role in (a) identifying the pattern, (b) creating self-knowledge, (c) stabilizing the disposition, and (d) possibly deepening and broadening the disposition. Andras Angyal (1941), who like Allport viewed interest as a tension maintained, called interests "symbolic elaborations" of tensional states. He explained that an interest disposition, or interests, is a representative grasp of things: "Interests show the role the object plays in our personality process" (Angyal, 1941, p. 126). Darley and Hagenah (1955, p. 191) implied that interests involve a linguistic encoding that reflect an individual's values and needs "in the vocabulary of the world of work." Gardner Murphy (1948) added to this view when he speculated that the continuity or permanence of interests relates to their verbal symbolization, which provides inner linguistic cues for behavior.

In this section of the chapter we have concluded that general interests recur and endure as well as differ in habit strength and in relative strength or intensity. Also counselors operationally define general interests with scale scores, and individuals may linguistically encode general interests as part of their self-concept systems and psychosocial identities. In the next section we examine conceptions about how these interest dispositions originate and develop.

THEORIES OF VOCATIONAL INTERESTS

The prior two sections of this chapter concentrated on specific interest as a psychological state and general interests as a personality disposition or trait. In this section we consider theories that explain the origin and development of vocational interests as a personality disposition. Recall, from earlier in this chapter, that Super (1949) attributed the origins of vocational interests to four sources:

heredity, learning, ability, and personality. We will examine each of these components in turn, starting with heredity.

Interests Reflect Genetic Influences

Although no author stipulates that genes alone produce interests, many researchers acknowledge that genetic inheritance influences interest development, if in no other way than by placing limits on innate potential. For a review of this literature, and a classic study in itself, consult Betsworth, Bourchard, Cooper, Grotevant, Hansen, Scarr, and Weinberg (1994). From that literature review, and their own empirical study, they concluded that 30% to 50% of variation in vocational interests could be attributed to genetic factors. Linda Gottfredson's chapter in this book offers a comprehensive summary and analysis of current knowledge concerning genetic influences on vocational interests. Accordingly, the topic will not be further elaborated herein.

Interests Are Learned

Super's proposition about learning interests refers to instrumental learning or, as he preferred to call it, experiential learning, rather than Herbart's associative learning. For our purposes herein, experiential learning refers to the principle that people become interested in objects or activities or events for which they have been reinforced. Kitson, Super's mentor, had argued that individuals acquire occupational interests primarily through experience. Kitson (1925) believed that an individual may cultivate many alternative occupational interests, contingent on being "subjected at the proper time to the appropriate stimulations" (p. 21). Strong (1943) agreed with this view and added that an interest emerges following the reward or recognition of abilities when they are successfully used.

Maslow (1954) traced interest development to need gratification, or "intrinsic requiredness, and the effects of gratification" (p. 117). Roe (1956) advanced this position in her theory about the origin of interests. Patterns of effortless and automatic attention are first determined by how an individual receives satisfaction and frustration. According to Roe, "The modes and degrees of need satisfaction determine which needs will become the strongest motivators. . . . The eventual pattern of psychic energies, in terms of attention-directedness [especially toward or away from people], is the major determinant of interests" (Roe & Lunneborg, 1990, p. 75). Thus parental reinforcement shapes an individual's need pattern as well as conditions preferred interpersonal means for need gratification. The resulting

needs and interpersonal deportment then unfold into interests for occupations that promise to satisfy those needs and reward that conduct.

Murphy (1948) explained interests as a symbolic statement summarizing a complex of canalizations and conditioning toward certain objects and activities. By canalization he meant that biological needs become more specific in response to having been satisfied in particular ways. Experience channels general motives into specific motives, especially values. For Murphy, interests reflect connections between inner values and the outer conditioning stimuli of everyday life. Interests, according to Murphy, "are conditioned stimuli pursued because of their relations to goal objects which are valued" (p. 283). Furthermore, interests are dominant conditionings (especially symbolic) because they are overlearned. In comparing interests to values, Murphy suggested that canalization makes values quite stable and difficult to extinguish. In contrast, conditioned interests are quickly extinguished when their relation to a mode of need satisfaction changes. The canalized value, however, remains and seeks another conditioned interest.

Lofquist and Dawis (1969, 1991) also invoked values and conditioning in their instrumental learning theory of interests. Essentially they asserted that interests derive from the interaction of abilities and reinforcement values, two major independent dimensions of personality. Reinforcement value denotes a person's generalized requirements for reinforcers and preference for stimulus conditions that in the past have been reinforcing. Lofquist and Dawis attributed the origin of interests to the combination of learned preferences for activities that individuals have in the past capably executed *and* the reinforcement value in current stimulus conditions. The role of abilities is given even greater prominence in self-efficacy theories of interests.

Interests Result from Self-Perceptions of Abilities

Many of the applied psychologists who first studied ability as a determinant of academic and occupational success also studied interests, often using the same experimental designs. Given the central role of ability testing in applied psychology, it is little wonder that ability was one of the first variables examined in the search for the determinants of interests. For example, Thorndike (1915, p. 394) viewed interests as "an extraordinarily accurate symptom of relative abilities." Like other early theorists, Thorndike believed that individuals become interested in things they do well and for which they have innate ability or aptitude. Apparently Thorndike (1915) conducted the first empirical investigation

of the ability-interest relationship. He reported that during the late elementary school period

> The resemblance between interest and ability may safely be placed at about .9 of perfect resemblance. Interests are shown to be symptomatic, to a very great extent, of present and future capacity or ability . . . Interest and ability are bound very closely together. The bond is so close that either may be used as a symptom for the other almost as well as itself. (p. 395)

Critics attacked Thorndike's study because he used subjective ranking methods to estimate abilities. Subsequent studies used objective measures of abilities and typically reported correlations around .25, not .9. For example, Strong (1943) reported that 80% of the correlations between various abilities and scales on the *Strong Vocational Interest Blank* ranged between plus/minus .30, with 97% ranging between plus/minus .40. Darley and Hagenah (1955) elucidated the low correlations between abilities and interests by explaining that people with the same amount of ability differ in their interests and people with the same interests differ in their ability (pp. 58–59).

Today most psychologists agree that ability and interests are independent variables with a small to moderate relationship (Dawis, 1991). The empirical literature suggests that abilities relate to success, whereas interests relate to initiation of, persistence at, and satisfaction with an activity. Despite the empirical evidence, a few scholars have continued to maintain that abilities and interests correlate highly. For example, Allport (1937) wrote, "Psychometric studies have shown that the relation between interest and ability is always positive, often markedly so. A person likes to do what he [or she] can do well" (p. 201). In 1961 Allport again wrote that "ability often turns into interest. It is an established fact that ordinarily people like to do what they can do well (the correlation between abilities and interests is high)" (p. 235). Although Allport's folk wisdom is appealing, Strong's (1943, p. 17) motorboat analogy is more accurate: The motor of abilities determines the boat's speed, whereas the rudder of interests determines the boat's direction.

Currently much attention has focused on subjective estimates of abilities in relation to interests (Prediger, this volume), the approach initiated by Thorndike in 1915. Two pivotal articles in this literature appeared in 1981. After reviewing the literature on the relation of interests to abilities, Barak (1981) concluded that actual abilities do not relate to interests, yet self-estimates or perceptions of abilities do relate to interests. Based on this conclusion, Barak (1981) proposed a cognitive theory that uses four stages to conceptualize the development of interests:

"(a) differential activities and experiences, (b) differential success and satisfaction, (c) mediating cognitions, and (d) differential interests" (p. 10). The important mediators are expected success, anticipated satisfaction, and perceived abilities.

Also in 1981 Hackett and Betz applied Bandura's (1977) self-efficacy theory to the career domain. They proposed that self-efficacy, or skill self-confidence, mediates the processes of career choice and adjustment. In due course Lent, Brown, and Hackett (1994) followed the lead of Barak (1981) and Hackett and Betz (1981) in using the self-efficacy construct to comprehend educational and vocational interests. In their sociocognitive theory of career and academic interest, choice, and performance Lent and his colleagues asserted that people "form enduring interests in activities in which they view themselves to be efficacious and in which they anticipate positive outcomes" (p. 89). This assertion summons to mind Stumpf's (1890, p. 283) proposition that interest turns to volition (or agency, as it is called in self-efficacy theory) when an objective seems probable and attainable. Lent and his colleagues go on to explain that the antecedent perceptions of self-efficacy and outcome likelihood arise from an adolescent's long history of modeling by important figures, vicarious learning, and experiential involvement in diverse activities with different degrees of activity success and differential reinforcement from significant others. Thus, similar to Barak (1981), Lent and his colleagues hypothesized that perceived abilities, expected success, and anticipated satisfaction play a mediating role in the origin of interests.

Interests Arise from Identifications

Although heredity, learning, ability, and personality are probably of equal importance as determinants of interest, theorists have concentrated more research and reflection on the role of personality as a determinant of vocational interests. The literature on personality and interests highlights the constructs of identification, self-concept, and adjustment. First let us consider how the process of identification may shape vocational interests.

As noted in the prior section, self-efficacy theories of interests prominently feature vicarious learning from observing role models. Personality theorists who have considered interest development also conclude that individuals develop interests through identification with role models. During childhood and adolescence individuals select and then observe several role models. At first they imagine themselves acting like their models, merging the self and model in fantasy. Later imagination turns into imitation as individuals strive in reality to behave

like their models. This striving leads to role playing of activities and interests, some of which eventually will be selectively integrated into a self-concept.

Kitson (1925) believed that vocational interests involved "identifying of one's self with a vocation" (p. 155). Carter (1940) asserted that individuals identify with groups whom they respect as a means of gaining satisfaction and status. One subjective factor in this adjustment is "satisfaction from the identification of himself [or herself] with some respected group. This identification leads to interest in restricted activities and experiences: to the extent that this is true, the person learns about the vocation and the vocational group" (p. 185). If the person has the ability required to perform these interests, then the interests persist. Super (1963), expressly building upon Carter's contributions, asserted that identification with parents leads to role playing, both imaginative and participative, in which the person tries an interest on for size to determine if it fits his or her own self-concept.

Interests Accommodate Social Roles

Super (1963) focused his own theorizing on how well interests implement a psychological self-concept, especially personal needs and values. Two other theorists have focused their work on how well interests implement a social self-concept, especially pertaining to social role and prestige. From this perspective, interests accommodate social roles, meaning that individuals develop interests that bring them into harmony with society or adapt them to circumstances. Leona Tyler (1951) viewed interests as roles that an individual has accepted. For her, awareness of, and acceptance of, a social role generates likes and dislikes. In a classic article Tyler (1955) supported this assertion in reporting that fourth-grade students generally disliked activities usually associated with the other gender, indicating the influence of social sex roles on interest development.

Linda Gottfredson also concentrated on the role of social adjustment in interest development. Gottfredson's (1996) sociological theory views occupational aspirations as attempts to implement a social self-concept by placing oneself in the broader social order. Accordingly, her theory emphasizes more public variables, such as gender and social class, rather than more private variables, such as needs and values. Gottfredson theorized that individuals use dimensions such as masculinity-femininity, occupational prestige, and fields of work to chart both social space and their own self-concepts. Individuals organize their images of occupations into cognitive maps using these dimensions and then aspire to occupations that correspond to their self-concepts along these same dimensions. In charting a social space within which to locate one's self, individuals rely more on

sex-role concerns and perceptions of prestige than they do on interests. Only given an acceptable zone of alternatives relative to gender and prestige do interests emerge as a determinant of occupational aspirations. When compromises must be made, individuals first sacrifice vocational interests, then if forced they sacrifice their place in society, and only as a last resort do they sacrifice their presentation of masculinity or femininity. From this perspective, sex role and prestige shape interest development by circumscribing the range of socially appropriate likes and dislikes.

Interests Are Solutions

Gottfredson's idea that interests reflect an attempt to locate oneself in the social order can be traced back to the work of Carter (1940) and Bordin (1943). These two psychologists advanced the now popular theory that interests, as expressions of personality, represent attempts to adjust oneself to society. Both Holland's idea that interest types reflect adjustive orientations and Super's (1963) idea that occupational choice implements a self-concept manifest this tradition.

Carter and Bordin were concerned, as many counselors are today, that vocational counseling overemphasizes the assessment of clients' interests instead of dialogue about the meaning and implementation of those interests. Carter blamed this situation, in part, on the overreliance on objective interest inventories while ignoring case-history data that provide "subjective or intuitive insights" (Carter, 1940, p. 185) about a client. In an attempt to have clinical insights complement statistical scores Carter advised counselors to view interests as expressions of personality and self-concept.

Carter (1940, p. 185) argued that "in the development of vocational attitudes the young man or woman is attempting a practical adjustment to environmental conditions." They seek to "find experiences which offer some basis for the integration of personality" (Carter, 1940, p. 186). Interests contribute to this integration by developing individuality, identifying the self, organizing activities, maintaining persistence in selected activities, patterning daily life, focusing drives that can be used to make long-range plans, and easing decision making. Thus interests are "solutions to their problems of adjustment" (p. 187). Accordingly, interpretations of interest inventories should attend to personality integration and social adjustment.

Similar to Carter, Bordin (1943) worried that counselors used interest inventory results to predict occupational choice. Bordin also wanted counselors to refocus their attention away from diagnosis and prediction, to concentrate on

helping clients implement their motives. As a clinician Bordin recommended using inventory scores to develop insight into a client's motivation: "Deeper insight into the dynamics of interest types should come from the leveling of our research guns at the question of the development of the individual's concept of himself [or herself] as reflected in his [or her] goal-directed strivings and the effects of the barriers he [or she] encounters" (Bordin, 1943, p. 61). Bordin (1943) asserted that vocational interests, as goal-directed strivings, express a self-concept in terms of occupational stereotypes: "In answering a Strong Vocational Interest test an individual is expressing his [or her] acceptance of a particular view or concept of himself [or herself] in terms of occupational stereotypes" (Bordin, 1943, p. 53). Bordin (1943) also proposed the idea that interest inventories are personality inventories because both inventories require individuals to give a picture of themselves.

These classic articles by Carter (1940) and Bordin (1943) advanced the practice of interpreting score patterns on interest inventories for their personality implications. Exemplars of this clinical approach to interest inventory interpretation, still germane today, were published for the *Strong* by Darley (1941) and by Goldberg and Gechman (1976), and for the *Kuder* by Gobetz (1964). Holland (1966), who agreed that interest inventories are personality inventories, advanced the clinical interpretation of interest inventories to its logical conclusion by constructing a personality inventory composed entirely of occupational titles—the *Vocational Preference Inventory* (Holland, 1985).

Interests Express Personality

Viewing interests as personality variables raises the question of how interests fit into the constellation of personality variables that include needs, values, and traits. Unfortunately, as Darley (1943, p. 113) remarked, the complexity of interests, personality, adjustment, and attitudes makes it difficult to distinguish interests from other motivational constructs. A common resolution to this problem is simply to assume that interests develop from personality and then concentrate on how people express their interests in work and leisure roles. As an example of this strategy consider Darley's (1941) assertion that interests are outgrowths of personality development. Later Darley and Hagenah (1955) wrote that "occupational interests reflect, in the vocabulary of the world of work, the value systems, the needs, and the motivations of individuals" (p. 191). To justify not distinguishing among motivational constructs such as needs, values, and interests, some theorists have argued that these diverse motivational constructs are measured by a common

pool of inventory items and behavioral events (e.g., Holland, 1976). The strongest empirical evidence supporting this assertion appeared in Thorndike, Weiss, and Dawis (1968), who, based on a canonical analysis of scales in the *Strong Vocational Interest Blank* and *Minnesota Importance Questionnaire* concluded that interests and needs belong to the same class of variables.

Holland (1976) proposed one solution to this problem of discriminating between interests and other motivational constructs when he urged researchers to regard as similar phenomena the concepts of "preferences for, choices of and characteristics of people in or seeking the same or similar occupations" (p. 521). Holland integrated knowledge about vocational interests, career choice, and occupational membership using six dimensions (i.e., RIASEC types). For example, Investigative types possess scientific interests, engage in scientific activities, and prefer scientific occupations. Holland (1976) presented extensive research to document that "the history of a person's vocational interests, choices, and work experiences have continuity and lawfulness rather than disjunctiveness and randomness" (p. 522). Holland's pivotal argument is that all three concepts (i.e., interests, preferences, and experiences) manifest or express a relatively stable, common personal disposition. Holland (1966) thus defined vocational interests as "the expression of personality in work, hobbies, recreational activities, and preferences" (p. 3). He cogently observed that psychologists have constructed personality theories around sexuality (e.g., Freud) or inferiority (e.g., Adler), so they should be able to center a personality theory around vocational life. And this Holland (1997) does masterfully.

Despite the attractiveness of Holland's approach, it is still important to attempt conceptual distinctions, if for no other reason than to explain what interests are not. Thus some researchers do discriminate among needs, values, and interests as separate and distinct domains (e.g., Katz, 1969, 1993; Super, 1973). Unfortunately, those who make such discriminations cannot yet agree about which behaviors distinguish among motivation variables. For example, after decades of research and reflection scholars still disagree about the relation of interests to needs and values. What follows is a brief survey of diverse conceptions about how interests relate to other motivational variables, particularly needs and values.

Needs. Several personality and vocational theorists assert, without much explication, that interests result from needs, lacks, or deficits. For example, Kitson (1925) maintained that "vocational choice offers opportunity for escape from

inferiorities. . . . It is a matter of common observation that a lack of some sort acts as a spur to effort" (p. 153). Maslow (1954) asserted that interests arise from need gratification, or the "intrinsic requiredness, and the effects of gratification" (p. 117). Combs and Snygg (1959) believed that "we are interested in what serves to satisfy a need" (p. 111). Allport (1961, p. 225) defined interests as culturally learned ways of satisfying a drive, a contention similar to Murphy's view of interests as learned canalizations and conditionings. To illustrate his point Allport explained that the need for food becomes an interest in particular types of food. An interest in chocolate includes the need for food, yet it is not the need. Of course, an interest does not have to relate to a biological need; therefore, arguing that interests may arise from needs does not significantly advance our understanding of the origin and development of interests.

Bordin's (1990) psychoanalytic theory proposed that interests represent pathological fixations transformed into socially acceptable subliminations (or needs). Along with Segal and Nachman, Bordin devised a framework for mapping occupation based on id-psychology, especially libidinal and other basic motives, such as manipulation, sensuality, anality, genitality, exploration, exhibition, and rhythmic movement. Their characterization of occupations emphasized impulse gratification and anxiety reduction. From this perspective an interest in plumbing may subliminate an anal fixation, whereas an interest in dentistry may subliminate sadistic impulses. Subsequently Bordin revised his theory to reflect ego-psychology, thinking that it may be more useful to map occupations using lifestyles and character styles rather than psychic dimension and body zones. He replaced the id-based motives with ego-based character traits (and needs) such as curiosity, precision, power, and expressiveness. Bordin concluded that this ego-system complemented the systems that Darley and Hagenah (1955) and Holland (1966) devised to interpret score patterns on interest inventories from a clinical perspective. Bordin's revised theory accorded with the view of several prominent theorists who had defined the ego as a system of interests (Allport, 1946; Mowrer, 1946; Rice, 1946).

Values. Berdie, Layton, Swanson, and Hagenah (1963, p. 50) compared interests to values. Values, although closely related to interests, more directly reflect what individuals consider important, and come close to reflecting a philosophy of life. There is widespread agreement about the function of values (Dawis, 1991)—individuals use values as criteria by which to evaluate the relative importance of environmental objects and activities. Berdie and his colleagues concluded that values

influence the style of enacting a chosen occupation, not the choice of an occupation. They illustrated this conclusion by comparing two individuals who were both interested in engineering. One may be attracted to engineering because it allows artistic expression, whereas the other may be attracted to engineering because it pays well. As the two pursue careers in engineering, one may choose positions that foster creativity, while the other may chose positions that maximize economic return. A choice to pursue creativity rather than wealth represents a behavioral manifestation of values in that it shows the relative importance of two goals.

The dimension of importance has been used to distinguish values from interests. For example, Carter (1944, p. 9) observed that "some things may be regarded as interesting but not important, and vice versa." Accordingly, Dawis (1991) resolved that values refer to evaluations of importance/unimportance and are scaled with items that represents *ends,* such as goals or standards, whereas interests refer to evaluations of liking/disliking and are scaled with items that represent *means* such as activities or instrumentalities. This view of interests as means to an end corresponds well with the etymology of the word *interest.*

Interests. Personality psychologists generally view vocational interests from the vantage point provided by the root meaning of the Latin *inter est:* "it is between." Dewey (1913, p. 17) and Kitson (1925, p. 20) were among the first to view interest as a sign of "organic union" between the person and environment. Personologists, especially those who adhere to a Gestalt psychology or Lewin's field theory, view interests as circuits between an individual and the environment, with interests themselves being different ways of interacting with the environment.

Andras Angyal (1941), a psychiatrist and personologist who advocated Gestalt psychology, explained that life occurs in the "biosphere" between the person and the environment, not within the person. Thus he argued that counselors should focus on "biospheric occurrences in their integral reality" (p. 101) rather than organismic processes or environmental influences. In a conception reminiscent of Dewey's (1896) "reflex arc," Angyal asserted that each biospheric occurrence includes three components: the subject, a goal, and the dynamic relationship between the subject and object. Angyal (1941) used the word *tension* to denote the relationship between the two poles of subject and object. If the individual symbolically elaborates this biospheric tensional state, then the resulting "psychological experience of biospheric tension could be called interests" (p. 126).

Gardner Murphy (1948), a personologist who advocated the biosocial-field perspective on personality, also asserted that interests develop through the

dynamic relation between individuals and environment. Murphy contended that "there is organization within the organism and organization within the environment, but [it] is the cross organization of the two that is investigated in personality research" (p. 8). From this perspective, an individual possesses a pattern of needs, the environment displays a pattern of reinforcers, and interests cross-organize the two patterns. This cross organization, or connection between inner wants and outer reinforcers, is learned.

Consistent with the views of personologists such as Angyal and Murphy, Darley and Hagenah (1955, p. 191) claimed that "interests are, in effect, the end-product of individual development and the bridge by which a particular individual pattern of development crosses over to its major social role in our culture." Their metaphor of a bridge aptly portrays interests as a biosocial tensional state, a state both culturally elaborated and linguistically encoded.

The metaphor of interests as a biosocial bridge connecting subject to object evokes the idea that interests constitute a path toward a goal. Several theorists have thus conceptualized interests as means for achieving goals. For example, John Dewey (1913) connected interests to goals when he wrote that the goal is the main interest; the series of acts that are a means of getting to the goal are the temporary interests. Strong (1955) also linked interests to goals by stating, "Progress toward a goal brings satisfaction and the useful activity is liked . . . . Changes in our goals must lead to some reversals in our interests" (p. 139). Strong (1955) also believed that goals precede interests. Once goals are set, abilities determine the range of available means and "interests will point out which means are most appropriate in terms of liked/disliked activities" (p. 145). A few writers have addressed explicitly how the motives of need, value, and interest coalesce within a personality, that is, the matrix of motives.

Motivational Matrix. Katz (1963, 1969, 1993) has devoted sustained attention to arranging the motivational mix. Katz (1993) defined *needs* as "basic motivating forces (often unconscious), the inner psychological and physiological drives for which satisfaction is sought" (p. 105). These unconscious motives are best recognized in their outer expressions and cultural manifestation as values. According to Katz, "They are teleologically described in terms of the satisfying goal or desired state or reward that is sought" (p. 106). Similar to Lent, Brown, and Hackett (1994), Katz viewed values as "feelings and judgments about the satisfactions and rewards that may be expected as outcomes or results of a decision"

(p. 106), while he saw interests as "differentiated means by which the valued goal may be reached." For example, altruistic values can be expressed through different ways of helping people. Katz claimed that interests are "concerned with satisfactions inherent primarily in the process rather than in the outcome of an activity" (p. 106). This definition stresses that interests are intrinsically appealing. Based on this definition, Katz sagaciously observed that the importance that one places on doing interesting work is itself a value. One must value intrinsically pleasing activity to make interests a criterion in the choice of an occupation.

Super (1973) also reflected on the arrangement of needs, interests, and values, eventually concluding that they reside at different levels in a hierarchy of motivation. The deepest level of personality consists of needs. Super (1973), following the personological tradition, viewed a need as a state of deprivation, in contrast to Lofquist and Dawis (1969, 1991), who viewed a need as a preference for certain kinds of reinforcers or rewards. Super (1973) defined a need as "a lack of something which, if present, would contribute to the well-being of the individual and which is accompanied by a drive to do something about it" (p. 189). Personality traits and values arise from these needs. According to Super, "Traits are ways of acting to meet a need in a given situation. . . . Values are objectives that one seeks to attain to satisfy a need" (pp. 189–190). Super (1973) called values generic objectives and interests specific objectives by proclaiming, "Interests are the specific activities and objects through which values can be attained and needs met" (p. 190). Thus Super proposed a hierarchical structure of motivational constructs ranging from the deepest level of needs (which may be unconscious), through traits and values, to the surface level of conscious interests.

Savickas (1995, 1997) regarded motivation as a state that energizes and directs a person's movement to a goal. Needs, values, and interests are three modes of character expression. They point in the direction that individuals think they can move to become more complete. Needs first of all arise from a felt sense of incompleteness. They indicate qualities that people lack yet think they require to feel secure and become more whole. Values, the second mode of character expression, teleologically denote the objects or gratifications in the world that people seek to satisfy a need. Values are general goals that confirm who we are and what we wish to become; they are also rankings of usefulness and commitments to a way of life. The third mode, interests, symbolizes the relationship between an individual and the community. Interests state a preferred *how*, a proposed path that links needs to values. Stated another way, needs impel movement, values guide movement, and

interests fashion movement. In the ordinary language of everyday life a need states *why,* a value states *what,* and an interest states *how.* Together needs, values, and interest characterize an individual's motives—that is, the why, what, and how of her or his movement in the world. How people satisfy their needs and strive toward their values through behavior—that is, interests—depends on society's opportunity structure and situational affordances. Consequently, interests are less stable and more difficult to assess than needs and values.

In this section we have concluded that the determinants that govern the origin and development of interest dispositions include genetic influence, experiential learning, ability self-perception, role-model identification, social-role accommodation, personality expression, and self-concept implementation. Compared to other motives, interests are closest to the surface of personality and they mediate person– environment interactions. Although quite stable in themselves, interests are less stable than needs and values.

CONCLUSIONS

It has become abundantly clear that *interest* signifies multiple meanings. Psychologists seem to find what they are looking for when they investigate the state of being interested. For example, to cognitive psychologists interest means attention, to existentialists interest means feeling, to purposivists interest means striving, to functionalists interest means action, and to psychometricians interest means verbal preferences. Given the empirical evidence produced by psychologists who examine interest from diverse vantage points and with multiple perspectives, it seems prudent to conclude that they are all partially correct. Thus at this point in time and based on the literature reviewed herein, I draw the following conclusions about interest as a state and interests as a trait.

The most cogent conceptualizations of interest portray the construct as a molar fact. For example, Dewey's (1913, p. 17) "organic union" in a reflex arc and Angyal's (1941, p. 101) "biospheric tension" both portray the fact of interest as a vital relationship among subject, object, and behavior. Although functionally irreducible to component parts, interest can be qualitatively characterized by its most prominent features. These attributes do indeed include cognitive meaning, felt worth, conative striving, and a course of action. Yet interest as a fact in itself is not identical to any of these attributes. What then is interest?

Interest denotes a complex, adaptive effort to use one's environment to satisfy needs and fulfill values. Interest can be described as a state of consciousness

characterized by (a) a readiness to respond to particular environmental stimuli (including objects, activities, people, and experiences) or to thoughts about these stimuli. When activated, this attitude or outlook prompts (b) awareness of a stimulus leading to (c) selective attention that narrows the perceptual field to more clearly illuminate the attention-exciting stimulus. This attention is accompanied by (d) an affective state of pleasant feeling and (e) an evaluation of liking that may prompt (f) an impulse to do something regarding the stimulus (such as learn more about it) in (g) anticipation of future gratification or satisfaction. This anticipation passes into (h) volition that steers goal-directed striving toward the stimulus and maintains (i) a course of action that fulfills some personal desire, need, or value. If the individual identifies self with the activity, then the individual may incorporate it as a new interest into the existing self-concept system. The symbolic representation of an interest is usually signified by the stimulus that evokes attention and action (e.g., "I like books").

As a psychological state, interest describes an individual's *position* in relation to a single, specific stimulus. In contrast, a homogeneous group of specific interests constitutes a general *disposition*. Interests, being plural, are characterized by quantitative attributes. The shift from a singular interest to plural interests involves a move from verb to noun, from state to trait, from percept to concept, and from awareness to self-awareness.

As a trait, interests denote a homogeneous group of specific interest(s) that form a consistent, persistent, and stable dispositional response tendency, which increases one's readiness to attend to and act upon a particular group of environmental stimuli. This orientation shows habit (or absolute) strength in how much stimulation it requires to activate. Habit strength can be assessed by behavioral analyses and interest autobiographies that reveal the ease and frequency with which an interest is initiated as well as the duration for which it extends and the length of time for which it persists. A disposition shows relative strength in activity preferences—that is, competition with other interests for behavioral expression. Relative strength of interests can be measured with interest inventories. Self-awareness about an interest disposition may lead to linguistically encoding, in the vocabulary of the work world, the disposition in a new self-concept that elaborates the existing system of self-concepts and vocational identity. This self-conscious symbolic representation, in turn, fosters stability and continuity of the disposition and related personality traits.

Determinants that govern the origin and development of interests include genetic influence, experiential learning, ability self-perception, role-model identification,

social role accommodation, personality expression, and self-concept implementation. Compared to needs and values, interests are closest to the surface of personality and are the least stable.

In sum, interests expedite person–environment interactions by uniting subject, object, and behavior into a vital relationship. This relation between person and environment is manifest in actions that satisfy needs, fulfill values, foster self-development, enhance contextual adaptation, and substantiate identity. Given all that they are and do, interests seem quite interesting.

REFERENCES

Allport, G. W. (1937). *Personality: A psychological interpretation.* New York: Henry Holt.

Allport, G. W. (1946). Effect: A secondary principle of learning. *Psychological Review, 53,* 335–347.

Allport, G. W. (1961). *Pattern and growth in personality.* Austin, TX: Holt, Rinehart and Winston.

Angyal, A. (1941). *Foundations for a science of personality.* New York: The Commonwealth Fund.

Arnold, F. (1906a). The psychology of interest (I). *Psychological Review, 13,* 221–238.

Arnold, F. (1906b). The psychology of interest (II). *Psychological Review, 13,* 291–315.

Arnold, M. (1960). *Emotion and personality: Volume 1, Psychological aspects.* New York: Columbia University Press.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191–215.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Barak, A. (1981). Vocational interests: A cognitive view. *Journal of Vocational Behavior, 19,* 1–14.

Barber, B. (1957). *Social stratification.* Orlando: Harcourt Brace.

Bellido, J. M. (1922). *El fenomen psico-galvani en psicotecnica.* Paper presented at the Second International Conference of Psychotechnics Applied to Vocational Guidance and Scientific Management, Institut d'Orientacio Professional, Barcelona, Spain.

Berdie, R. F., Layton, W. L., Swanson, E. O., & Hagenah, T. (1963). *Testing in guidance and counseling.* New York: McGraw-Hill.

Berlyne, D. E. (1949). "Interest" as psychological concept. *British Journal of Psychology, 40,* 184–195.

Betsworth, D. G., Bourchard, T. J., Jr., Cooper, C. R., Grotevant, H. D., Hansen, J. C., Scarr, S., & Weinberg, R. A. (1994). Genetic and environmental influences on vocational interests assessed using biological and adoptive families and twins reared apart and together. *Journal of Vocational Behavior, 44,* 263–278.

Bingham, W. V. (1937). *Aptitudes and aptitude testing.* New York: Harper & Row.

Bordin, E. S. (1943). A theory of vocational interests as dynamic phenomena. *Educational and Psychological Measurement, 3,* 49–65.

Bordin, E. S. (1990). Psychodynamic model of career choice and satisfaction. In D. Brown, L. Brooks, & Associates. *Career choice and development* (2nd ed., pp. 102–144). San Francisco: Jossey-Bass.

Campbell, D. P., Borgen, F. H., Eastes, S. H., Johansson, C. B., & Peterson, R. A. (1968). A set of basic interest scales for the *Strong Vocational Interest Blank* for Men. *Applied Psychology Monographs, 52* (6, Whole No. 2), 1–54.

Carter, H. D. (1940). The development of vocational attitudes. *Journal of Consulting Psychology, 4,* 185–191.

Carter, H. D. (1944). Vocational interests and job orientation: A ten-year review. *Applied Psychology Monographs, 24* (Whole No. 2).

Claparede, E. (1930). Autobiography. In C. Murchinson (Ed.), *A history of psychology in autobiography* (Vol. 1, pp. 63-97). Worcester, MA: Clark University Press.

Combs, A. W., & Snygg, D. (1959). *Individual behavior: A perceptual approach to behavior* (Rev. ed.). New York: Harper & Row.

Crites, J. O. (1969). Interests. In R. L. Ebel (Ed.), *Encyclopedia of educational research* (4th ed., pp. 678-686). Old Tappan, NJ: Macmillan.

Darley, J. G. (1941). *Clinical aspects and interpretations of the Strong Vocational Interest Blank.* New York: The Psychological Corporation.

Darley, J. G. (1943). *Testing and counseling in the high-school guidance program.* Chicago: Science Research Associates.

Darley, J. G., & Hagenah, T. (1955). *Vocational interest measurement: Theory and practice.* Minneapolis: University of Minnesota Press.

Dawis, R. V. (1991). Vocational interests, values, and preferences. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. II, pp. 833–871). Palo Alto, CA: Consulting Psychologists Press.

Day, S. X, & Rounds, J. (1997). "A little more than kin, and less than kind": Basic interest in vocational research and career counseling. *Career Development Quarterly, 45,* 207–220.

Dewey, J. (1896). The reflex arc concept in psychology. *Psychological Review, 3,* 357–370.

Dewey, J. (1903). *Interest in relation to training of the will.* Yearbook of the National Herbart Society (1895) 2nd Supplement. Bloomington, IL: Public School Publishing. (Original work published 1896)

Dewey, J. (1913). *Interest and effort in education.* Boston: Houghton Mifflin.

English, H. B., & English, A. C. (1958). *A comprehensive dictionary of psychological and psychoanalytic terms.* London: Longmans, Green, and Co.

Fryer, D. (1930). The objective and subjective measurement of interests—an acceptance-rejection theory. *Journal of Applied Psychology, 14,* 549–556.

Fryer, D. (1931). *The measurement of interests.* New York: Henry Holt.

Glare, P.G.W. (1982). *Oxford Latin dictionary.* Oxford, England: Clarendon Press.

Gobetz, W. (1964). Suggested personality implications of the Kuder Preference Record (Vocational) scores. *Personnel and Guidance Journal, 43,* 159–166.

Goldberg, R., & Gechman, A. (1976). Psychodynamic inferences from the *Strong Vocational Interest Blank. Journal of Personality Assessment, 40,* 285–301.

Gottfredson, G. D., & Jones, E. M. (1993). Psychological meaning of profile elevation in the *Vocational Preference Inventory. Journal of Career Assessment, 1,* 35–49.

Gottfredson, L. S. (1996). Gottfredson's theory of circumscription and compromise. In D. Brown, L. Brooks, & Associates. *Career choice and development* (3rd ed., pp. 179–232). San Francisco: Jossey-Bass.

Grinder, R. E. (1989). Educational psychology: The master science. In M. C. Wittrock & F. Farley (Eds.), *The future of educational psychology* (pp. 3–18). Hillsdale, NJ: Erlbaum.

Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior, 18,* 326–339.

Harmon, L. W., Hansen, J. C., Borgen, F. H., & Hammer, A. L. (1994). *Strong Interest Inventory: Applications and technical guide.* Stanford, CA: Stanford University Press.

Herbart, J. F. (1891). *A text-book in psychology: An attempt to found the science of psychology on experience, metaphysics, and mathematics.* New York: D. Appleton. (Original work published 1816)

Herbermann, C. G., Pace, E. A., Pallen, C. B., Shahan, T. J., & Wynne, J. J. (Eds.). (1913). The psychology of interests. *The Catholic encyclopedia* (Vol. 8, pp. 75–76). New York: Gilmary Society.

Holland, J. L. (1966). *The psychology of vocational choice: A theory of personality type and model environments.* Waltham, MA: Blaisdell.

Holland, J. L. (1976). Vocational preferences. In M. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 521–570). Skokie, IL: Rand McNally.

Holland, J. L. (1985). *Vocational Preference Inventory manual—1985 edition.* Odessa, FL: Psychological Assessment Resources.

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.

Holland, J. L., Powell, A. B., & Fristsche, B. A. (1994). *The Self-Directed Search professional user's guide.* Odessa, FL: Psychological Assessment Resources.

Jary, D., & Jary, J. (1991). *HarperCollins dictionary of sociology.* New York: HarperCollins.

Katz, M. R. (1963). *Decisions and values: A rationale for secondary school guidance.* New York: College Entrance Examination Board.

Katz, M. R. (1969). Interests and values. *Journal of Counseling Psychology, 16,* 460–462.

Katz, M. R. (1993). *Computer-assisted career decision making.* Hillsdale, NJ: Erlbaum.

Kitson, H. D. (1925). *The psychology of vocational adjustment.* Philadelphia: Lippincott.

Kuder, F., & Zytowski, D. G. (1991). *Kuder Occupational Interest Survey: General manual.* Monterey, CA: CTB/McGraw-Hill.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior, 45,* 79–122.

Lofquist, L. H., & Dawis, R. V. (1969). *Adjustment to work: A psychological view of man's problems in a work-oriented society.* Englewood Cliffs, NJ: Appleton-Century-Crofts.

Lofquist, L. H., & Dawis, R. V. (1991). *Essentials of person-environment correspondence counseling.* Minneapolis: University of Minnesota Press.

MacIver, R. M. (1937). *Society: A textbook of sociology.* New York: Farrar & Rinehart.

McDougall, W. (1908). *Introduction to social psychology.* London: Methuen.

McDougall, W. (1929). *Outline of psychology.* New York: Scribner.

Maslow, A. H. (1954). *Motivation and personality.* New York: Harper & Row.

Mill, J. S. (1869). *Addendum to James Mill's Analysis of the phenomena of the human mind.* London: Longmans, Green, Reader, and Dyer.

Mowrer, O. H. (1946). The law of effect and ego-psychology. *Psychological Review, 53,* 321–334.

Murphy, G. (1948). *Personality: A biosocial approach to origins and structure.* New York: Harper & Row.

Onions, C. T. (1966). *Oxford dictionary of English etymology.* Oxford, England: Clarendon Press.

Paterson, D. G., & Darley, J. G. (1936). *Men, women and jobs: A study in human engineering.* Minneapolis: University of Minnesota Press.

Prediger, D. J. (1998). Is interest profile level relevant to career counseling? *Journal of Counseling Psychology, 45,* 204–211.

Rice, P. B. (1946). The ego and the law of effect. *Psychological Review, 53,* 307–320.

Roe, A. (1956). *The psychology of occupations.* New York: Wiley.

Roe, A., & Lunneborg, P. W. (1990). Personality development and career choice. In D. Brown, L. Brooks, & Associates. *Career choice and development* (2nd ed., pp. 68–101). San Francisco: Jossey-Bass.

Savickas, M. L. (1995). Examining the personal meaning of inventoried interests during career counseling. *Journal of Career Assessment, 3,* 188–201.

Savickas, M. L. (1997). The spirit in career counseling: Fostering self-completion through work. In D. P. Bloch & L. J. Richmond (Eds.), *Connections between spirit and work in career development: New approaches and practical perspectives* (pp. 3–25). Palo Alto, CA: Davies-Black.

Sears, S. (1982). A definition of career guidance terms: A National Vocational Guidance Association perspective. *Vocational Guidance Quarterly, 31,* 137–143.

Seligman, E.R.A. (Ed.). (1937). *Encyclopaedia of the Social Sciences* (Vols. 1–7). Old Tappan, NJ: Macmillan.

Small, A. W. (1905). *General sociology.* Chicago: University of Chicago Press.

Stout, G. F. (1896). *Analytic psychology.* Old Tappan, NJ: Macmillan.

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

Strong, E. K., Jr. (1955). *Vocational interests 18 years after college.* Minneapolis: University of Minnesota Press.

Stumpf, C. (1883). *Tonpsychologie: Volume I.* Leipzig, Germany: S. Hirzel-Verlag.

Stumpf, C. (1890). *Tonpsychologie: Volume II.* Leipzig, Germany: S. Hirzel-Verlag.

Super, D. E. (1949). *Appraising vocational fitness by means of psychological tests.* New York: Harper & Row.

Super, D. E. (1960). Interests. In C. W. Harris (Ed.), *Encyclopedia of educational research* (3rd ed.). Old Tappan, NJ: Macmillan.

Super, D. E. (1963). Self-concepts in vocational development. In D. E. Super, R. Starishevsky, N. Matlin, & J. P. Jordaan (Eds.), *Career development: Self-concept theory* (pp. 1–16). New York: College Entrance Examination Board.

Super, D. E. (1973). *The Work Values Inventory.* In D. Zytowski (Ed.), *Contemporary approaches to interest measurement* (pp. 189–205). Minneapolis: University of Minnesota Press.

Super, D. E., & Dunlap, J. W. (1951). Interest in work and play. In D. H. Fryer & E. R. Henry (Eds.), *Handbook of applied psychology* (pp. 100–108). Austin, TX: Holt, Rinehart & Winston.

Thorndike, E. L. (1915). The permanence of interests and their relation to abilities. In M. Bloomfield (Ed.), *Readings in vocational guidance* (pp. 386–395). Boston: Ginn and Company.

Thorndike, E. L. (1935a). *Adult interests.* Old Tappan, NJ: Macmillan.

Thorndike, E. L. (1935b). *The psychology of wants, interests, and attitudes.* Englewood Cliffs, NJ: Appleton-Century-Crofts.

Thorndike, R. M., Weiss, D. J., & Dawis, R. V. (1968). Canonical correlations of vocational interests and vocational needs. *Journal of Counseling Psychology, 15,* 101–106.

Titchener, E. B. (1898). The postulates of a structural psychology. *Philosophical Review, 7,* 449–465.

Titchener, E. B. (1899). *An outline of psychology.* Old Tappan, NJ: Macmillan.

Todt, E., Drewes, R., & Heils, S. (1994). The development of interests during adolescence: Social context, individual differences, and individual significance. In R. Silberheisen & E. Todt (Eds.), *Adolescence in context: The interplay of family, school, peers, and work in adjustment* (pp. 82–95). New York: Springer-Verlag.

Todt, E., & Schreiber, S. (1996, June). *Development of interests.* Paper presented at Seeon Conference on interest and gender, Germany.

Tyler, L. E. (1951). The relationship of interests to abilities and regulation among first-grade children. *Educational and Psychological Measurement, 11,* 255–264.

Tyler, L. E. (1955). The development of "vocational interests": I. The organization of likes and dislikes in ten-year-old children. *Journal of Genetic Psychology, 86* 33–44.

Tyler, L. E. (1964). Work and individual differences. In H. Borow (Ed.), *Man in a world at work* (pp. 174–195). Boston: Houghton Mifflin.

Tyler, L. E. (1978). *Individuality: Human possibilities and personal choice in the psychological development of men and women.* San Francisco: Jossey-Bass.

Wolman, B. B. (1973). *Dictionary of behavioral science.* New York: Van Nostrand Reinhold.

Woodworth, R. S. (1964). *Contemporary schools of psychology* (3rd ed.). New York: Ronald Press.