

Vocational Interests

12

The proof that the little prince existed is that he was charming, that he laughed, and that he was looking for a sheep. If anybody wants a sheep, that is a proof that he exists.

(Antoine de Saint-Exupéry, 1900–44)

It is the first of all problems for a man to find out what kind of work he is to do in this universe.

(Thomas Carlyle, 1795–1881)

Key Terms

circumscription and
compromise theory
person–environment fit

Prediger’s three-factor model
RIASEC model
trait complex theory

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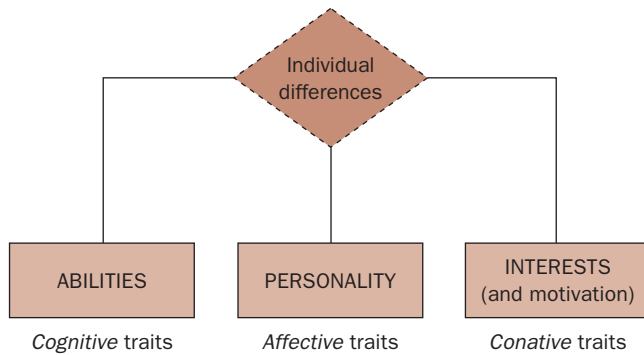


Figure 12.1 The three pillars of differential psychology.

12.1 INTRODUCTION

The final chapter of this book is concerned with vocational interests. Despite their longstanding history in psychology and despite being considered the third “pillar” of individual differences (together with motivation; see Figure 12.1), vocational interests have received less attention than other individual difference constructs, although in recent years there has been an upsurge in research on this topic.

Definitions of interests have generally conceptualized the construct in terms of *preferences*. Owen and Taljaard (1995, p. 428) defined interests as “a spontaneous preference for certain activities as well as a spontaneous declination for other activities.” Similarly, Greenhaus, Callanan, and Godshalk (2000) explained interests in terms of “likes” and “dislikes” attached to specific objects or activities. On the other hand, Carlson (2002) argued that interests could be understood as a form of desire, particularly

for what people wish to understand and do. Thus interests tell us what people enjoy and do not enjoy doing.

Clearly, definitions of interests overlap with both personality (see chapter 2) and motivation (see chapter 9). Indeed, interests may be regarded as constitutive of personality traits and motivation because they refer to individual differences in preferences, needs, and goals.

The importance of vocational interests, however, is that they explain variance in real-life outcomes where abilities and personality traits fail to do so. Thus individuals’ choices of career, which affect their educational and occupational future, may not be predicted by personality or intelligence, though they may be affected by them (Ackerman & Heggstad, 1997; Gottfredson, 2005). For example, research has shown that vocational interests are often significantly related to the personality traits of Extraversion and Openness to Experience. Accordingly, vocational interests may be conceptualized as a link between personality and career choices. Furthermore, and as will be clear from this chapter, vocational interests can be predicted by individual differences in gender and intelligence (Chamorro-Premuzic, Furnham, & Ackerman, 2006).

12.2 APPROACHES TO VOCATIONAL INTERESTS

Although there are several theories of vocational interests, only few have been examined through rigorous empirical studies, and even fewer integrated with the broader individual difference literature. In a review of the literature, Furnham (1992) conceptualized six major types of theoretical approaches to the study of vocational interests (see Table 12.1).

Table 12.1 Approaches to the study of vocational interests

Approach	Key focus
DEVELOPMENTAL	<ul style="list-style-type: none"> Examines <i>changes</i> in vocational interests throughout the lifespan and how these develop. Emphasizes the role of environmental factors, though individuals partly choose their career paths. A central role is given to the concept of “effort.”
PSYCHODYNAMIC	<ul style="list-style-type: none"> Assesses the impact of <i>intrapsychic</i> conflicts (between unconscious and conscious processes) on vocational decisions. Such decisions are often irrational or based on unconscious motives. Interactions with “significant others” and role models play a major role in determining career choices and aspirations.
MOTIVATIONAL (theories of needs)	<ul style="list-style-type: none"> Takes into account the needs of the individual and how they can be satisfied in the context of organizational settings (see chapter 9).
SOCIOLOGICAL	<ul style="list-style-type: none"> Highlights the importance of socioeconomic and political factors as determinants of vocational aspirations and possibilities. Stresses the importance of previous level of education and opportunities rather than personal attributes (e.g., personality and ability).
DECISION-MAKING	<ul style="list-style-type: none"> A relatively recent approach that examines the factors underpinning individuals’ decision-making schemes (e.g., perceptions, attributions, valuations) and how these affect choices.
EXISTENTIAL	<ul style="list-style-type: none"> Derives from the humanistic approach to psychology and personality, with a focus on the self-actualization or self-realization of the individual through the accomplishment of vocational goals (e.g., comparing expected vs. actual career choices).

The fact that Furnham's list of approaches did not include individual differences is unsurprising because vocational psychology has largely avoided integrating other individual difference constructs into its theories, thus resulting in a more or less isolated paradigm. To some, this is a sign of the theoretical richness and diversity of the field. To others, however, it is merely a testament to the area's conceptual fragmentation and, in turn, a reason for the relative lack of progress of vocational interests in comparison to personality or intelligence research. Admittedly, however, interests are as crucial to differential psychology as are personality and abilities, and any revision of the field that excluded interests would be truncated by definition. Thus a (very rough) description of the topic of differential psychology could be seen to conflate the following:

1. **Interests and motivation:** *what* a person will do.
2. **Abilities:** what a person *can* do.
3. **Personality:** *how* a person will do it.

Although the above classification is oversimplistic, and the structure and contents of this book have shown that there are more than three or four constructs underpinning the study of individual differences, most if not all topics can be "accommodated" within the context of interests, abilities, and personality traits. Hence the importance of examining the conceptual and empirical links between these three areas of differential psychology.

In a special issue of the *Journal of Vocational Behavior* (the major publication in the area), Russell (2001) and Tinsley (2001) called for less isolation in vocational research, while Walsh (2001) concluded that one of the most important challenges for vocational psychologists is the incorporation of findings from other areas of differential psychology in order to pay more attention to individual differences (see also Kline, 1975).

12.3 LINKING THEORY AND PRACTICE

A key issue in vocational psychology is the link between theory and practice, and this makes vocational interests a more applied concept than personality and even intelligence. This means that, although personality traits, abilities, and interests may all influence individuals' lives, people pay explicit attention to their interests when making decisions in regard to their careers. Educational and occupational psychologists often apply theories of vocational interests to advise individuals on their career choices. Indeed, interests have been examined in a wide range of theoretical and applied contexts, including personnel selection, educational psychology, and motivation (see Table 12.2).

Lent (2001) proposed the following three goals for vocational theories:

- To explain individuals' career choices (causes and development) and how these affect entry, adjustment, progress, satisfaction, and change in both educational and occupational settings.
- To construct preventive and palliative vocational strategies that may help individuals identify the best choices and pursue them (put them into action).

Table 12.2 Areas related to the study of interests (and key references in chronological order)

<i>Context (relation to)</i>	<i>Representative references / studies</i>
Occupational success	Clark (1961)
Educational counseling	Walsh & Opisow (1983)
Job satisfaction	Assouline & Meir (1987)
Personnel selection	Hogan & Blake (1996)
Career development	Oleski & Subich (1996)
Vocational choice	Holland (1997)
Personality and intelligence	Ackerman & Heggestad (1997)
Job stress	Edwards & Rothbard (1999)

- To include a wide range of clients, from primary and secondary school to university students, unemployed, workers, retirees, and even organizations (e.g., schools, businesses, institutions).

In an ideal world, clients would include not only Ivy League or Oxbridge students but also blue-collar workers (Fouad, 2001). Yet, it is clear that economic factors constrain freedom of vocational choices. Accordingly, individual differences in vocational interests may exist across socioeconomic classes but be expressed differently within the same salary range. Furthermore, socioeconomic factors, such as unemployment, will clearly limit individuals' choice of job and overshadow the importance of interests in determining their choices. One of the most consistent findings in cross-sectional and longitudinal data is that vocational interests and job expectations tend to adjust to socioeconomic circumstances from primary school to university (e.g., Borgen & Young, 1982; Tremaine, Schau, & Busch, 1982; Taylor, 1985).

12.4 STABILITY OF INTERESTS: EVIDENCE FOR DISPOSITIONAL NATURE

One of the reasons for the importance of interests in differential psychology is their *stability* across the lifespan. In fact, reviewers have long noted that "extreme fluctuations in interest areas of young persons over a period of time would defeat any predictions based on them" (Herzberg, Bouton, & Steiner, 1954, p. 90). Moreover, appropriate psychometric tools for the assessment of interests (particularly in the context of career counseling and vocational guidance) would require evidence or test-retest reliability (little or no variation between an individual's score on the same inventory every time she completes it), which can only be ensured if inventories assess dispositional factors. Research has increasingly tested the possibility of within-individual variations in interests, hoping to find none.

Early reviews relied primarily on qualitative accounts (Campbell, 1971; Strong, 1943; Swanson, 1999), which, albeit

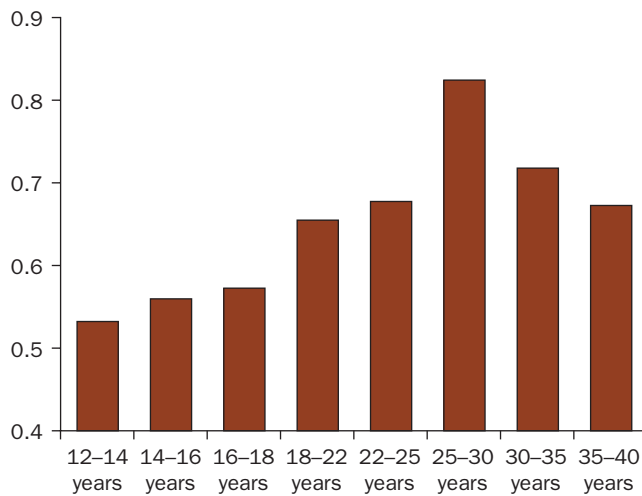


Figure 12.2 Stability of interests across the lifespan.
 Source: Based loosely on Low et al. (2005).

informative, are more exposed to inaccurate and subjective interpretations. However, a recent meta-analysis by Low, Yoon, Roberts, and Rounds (2005) provided quantitative evidence for the stability of interests across the lifespan. This study examined longitudinal data from age 12 to age 40 and found compelling evidence for the *invariance* of interests across time. Figure 12.2 shows the correlations or reliability indicators for interests within each age gap. For instance, between the ages of 12 and 14, interests remained slightly unstable as 2-year gap scores correlated in the region of .53 (see left bar). However, the chart shows that the stability of interests increased with time, peaking at the age of 25–30 years, and dropping thereafter though only slightly under the .70 barrier. What these data show is that “interests stability remained unchanged during much of adolescence and increased dramatically during the college years (age 18–21.9), where it remained for the next 2 decades” (Low et al., 2005). Indeed, the authors noted that the stability of interests is greater than that of personality traits. There can be no more compelling evidence, then, for the dispositional nature of vocational interests.

12.5 GENDER DIFFERENCES IN VOCATIONAL INTERESTS

Gender differences in vocational interests are important because of their potential to explain the distribution of sex differences in the workforce, specifically, why women or men may be over- or underrepresented in certain job types. In fact, this question has also been asked in regard to educational settings, as male–female ratios vary enormously from one faculty to another. Typically, female students represent the majority within arts and humanities, and in several social sciences including psychology. On the other hand, male students outnumber their female counterparts in hard sciences (e.g., maths, physics, engineering). For instance, Kirkcaldy (1988) reported women to have significantly lower interest levels than men for technical and scientific jobs, whereas

the opposite was true for design and socioeducational jobs. In addition, women preferred less structured, more creative, less task-oriented, and more permissive types of jobs, a description that fits well with artistically or emotionally involving jobs (Furnham, 2005).

Although this suggests that vocational interests may be the cause of gender differences in educational and occupational choices, a more complicated question is, what exactly explains or determines gender differences in vocational interests? This question is complicated because correlational designs rarely reveal the causal paths underlying the relationship between two or more variables. For example, one cannot be sure whether gender differences in vocational interests are influenced by cultural, personality, or ability factors (e.g., whether women prefer certain jobs because they suit their abilities, their personalities, or simply conform with social expectations) (see Gottfredson, 2005, and section 12.10). Furthermore, there is also the issue of whether gender differences are a consequence of sex or biological differences between men and women or simply the product of cultural factors.

It is obvious that expectations or beliefs about the job affect individual’s level of interests. This idea has been emphasized by schemata theories. For instance, Levy, Kaler, and Schall (1988) assessed participants’ perceptions of 14 jobs and identified two main factors, namely achievement vs. helping and low vs. high educational level, that represented people’s schemas. In that sense gender (or sex) difference in vocational interests may confound a mix of self-perceived and other-perceived attributes, including personality and ability factors. Thus women or men may choose some jobs rather than others because:

- They are genuinely better at them.
- They believe they are better at them.
- Others (e.g., individuals, parents, society) believe they are better at them.
- They simply enjoy them.
- They have few other alternatives.
- They believe they have few other alternatives.

And these are only *some* potential explanations for the gender divide in vocational interests, the educational system, and occupational settings. As if we needed yet another problem, the issue of gender differences (in respect to any individual difference variable) is hugely politicized. Thus some believe that gender differences in the workforce are a function of individual difference in ability (level and type), whilst others seem inclined to think that they result from sociopolitical factors or constraints. Somewhere along those lines (perhaps at the center) we can locate gender differences in vocational interests, which are affected by both personality dispositions (including abilities) and external factors.

12.6 PERSON–ENVIRONMENT FIT

One of the most prominent frameworks for investigating vocational interests is the so-called **person–environment (P–E) fit**

person–environment fit vocational theory which suggests that the congruence or match between a person's individual attributes (e.g., personality traits, abilities, expectations) and those of the environment (e.g., school, business) determines the level of job satisfaction and performance

theory, which posits that individuals' level of job satisfaction and performance is largely a function of *congruence* between their personal attributes (e.g., personality traits, abilities, expectations) and those of the environment (e.g., school, business). Indeed, interests have provided the ideal route to the

study of congruence or match of individuals to appropriate and specific environments (Hogan & Blake, 1996). Thus, "the greater the match between the individual's needs and the environmental attributes, the greater will be the potential for the individual's satisfaction and performance" (Furnham, 2005, p. 116).

Numerous studies have reported evidence in support of the P–E fit model. For example, Furnham (1987) found that extraverted individuals preferred and worked better in open-plan offices, no doubt because of their interests in social interaction, whilst the opposite pattern was found for introverts. Thus "people tend to search for environments that will let them exercise their skills and abilities and express their personality. For instance, social types look for social environments" (Furnham, 2005, p. 122). As seen throughout chapter 7, this idea is consistent with the finding that individuals' personality and ability influence the choice of their environment: individual differences (in personal or dispositional factors) thus affect the array of experiences an individual may be confronted with, and individuals build *niches* according to their abilities, preferences, and interests.

12.7 HOLLAND'S RIASEC TYPOLOGY

The most famous theory of vocational interests is that of J. L. Holland (1973), which posits that there are six types of interests for classifying both individuals and environments: *realistic*, *investigative*, *artistic*, *social*, *enterprising*, and *conventional* (hence the acronym **RIASEC**). Holland's types are generally illustrated by a hexagon, such as in Figure 12.3.

RIASEC model Holland's typology of six interest types classifying people and environments as realistic, investigative, artistic, social, enterprising, or conventional, which accounts for individual differences in interests in terms of the level of congruence or fit between the person's characteristics and those of the environment

The beauty of Holland's theory is that it accounts for personality and environmental differences in interests at the same time and using the

same factors. Accordingly, the central aspect underlying interests is not the environment or the individual's personality disposition but the level of congruence between the two. In short, then, there are three components or levels of analysis characterizing Holland's theory, namely:

1. *Person*: characteristics of the individual: dispositions, preferences, and interests grouped according to a typology of vocations.

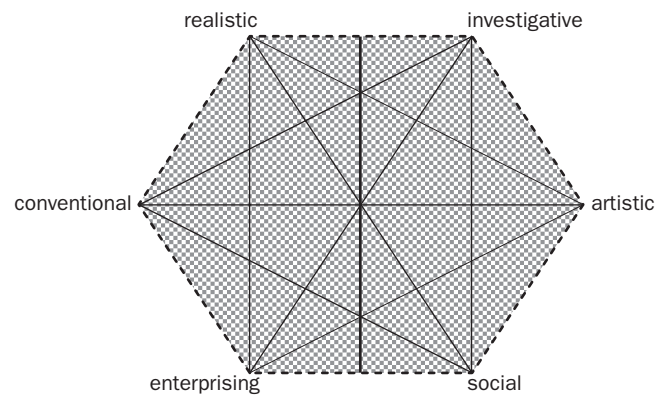


Figure 12.3 Holland's RIASEC model of interests.

Source: Adapted from Cronbach (1990).

2. *Environment*: characteristics of the environment: grouped according to the same typology of vocations.
3. *Fit*: level of congruence between the characteristics of the person and the environment.

Realistic people are interested in "activities that entail . . . manipulation of objects, tools, machines, and animals" and fit occupations such as mechanic, carpenter, fisherman, and engineer. *Investigative* individuals tend to be interested in "investigation of physical, biological, and cultural phenomena in order to understand and control such phenomena." Examples of investigative professions are scientists, notably chemist, biologist, and physicist. *Artistic* people are interested in "verbal or human materials to create art forms or products" and are best tailored for artistic professions such as music, fine arts, and acting. *Social* individuals are interested in "activities that entail the manipulation of others to inform, train, develop, cure, or enlighten" and fit political, educational, or social jobs (e.g., minister, teacher, social worker). *Enterprising* types are interested in "the manipulation of others to attain organizational goals or economic gain." Accordingly, they are financially driven and business-minded and fit corporate jobs (e.g., lawyer, banker, salesperson). Finally, *conventional* types are interested in "keeping records, filling materials, organizing written and numerical data according to a prescribed plan, operating business machines and data processing machines." Examples of conventional jobs are file clerk, secretary, and accountant (Holland, 1992, pp. 19–23). See Table 12.3 for a more detailed description.

Graphical proximity between different types or points of the hexagon is a function of conceptual and empirical similarity. In the words of Holland (1973, 1985, p. 5), the RIASEC types are "inversely proportional to the theoretical relationships between them." For example, the investigative type is similar to artistic and realistic, but different from enterprising, social, and conventional types. Indeed, studies reported precise correlations between different types of interests (see Table 12.4).

Thus people with realistic interests may be happily adapted to investigative settings, people with artistic interests may adjust well to social contexts, and so forth. In some cases, though, correlations are not in tune with theoretical predictions. Further, studies often report different correlations for the same pair of types.

Table 12.3 Holland's vocational personality types

	R REALISTIC	I INVESTIGATIVE	A ARTISTIC	S SOCIAL	E ENTERPRISING	C CONVENTIONAL
<i>Traits</i>	Hardheaded Unassuming Practical Dogmatic Un-insightful	Analytical Intellectual Curious Scholarly Broad interests	Open Non-conforming Imaginative Intuitive Sensitive Creative	Agreeable Friendly Understanding Sociable Persuasive Extraverted	Extraverted Dominant Adventurous Enthusiastic Power-seeking Energetic	Conforming Conservative Unimaginative Inhibited Practical-minded Methodical
<i>Life goals</i>	Invent apparatus or equipment Become outstanding athlete	Invent valuable products Theoretical contribution to science	Artistic fame Write books Compose music Produce paintings	Help others Make sacrifices for others Teachers Therapist	Community leader Finance and commerce expert Dress well Be liked	Expert in finance and commerce Produce a lot of work
<i>Values</i>	Freedom Intellect Ambition Self-control Docility	Intellectual Logical Ambitious Wise	Equality Imaginative Courageous World of beauty	Equality Self-respect Helpful Forgiving	Freedom Ambitious (-) forgiving (-) helpful	(-) imaginative (-) forgiving
<i>Models</i>	Thomas Edison Admiral Byrd	Marie Curie Charles Darwin	T. S. Eliot Pablo Picasso	Jane Addams Albert Schweitzer	Henry Ford Andrew Carnegie	Bernard Baruch John Rockefeller
<i>Aptitudes</i>	Technical	Scientific	Artistic	Social and educational Interpersonal	Sales Leadership Business Clerical Interpersonal	Clerical ability Executive
<i>Self-ratings</i>	Mechanical ability	Math ability Research ability	Artistic ability			
<i>Suitable for</i>	Mechanical engineering	Science and research	Arts	Human relations	Leadership	Business

Source: Adapted from Holland (1997).

12.8 PREDIGER'S THREE-FACTOR MODEL

Prediger's three-factor model a reconceptualization of Holland's **RIASEC model** in terms of bipolar dimensions (ideas–data and people–things) rather than independent and unidimensional categories to describe people and environments

response bias. Thus Prediger's model differs from Holland's not

Prediger (1976; Prediger & Vansickle, 1992a, b) argued that Holland's RIASEC model could be reduced to a **three-factor model** incorporating two bipolar dimensions for work tasks, namely, *ideas–data* and *people–things*, and one general factor of

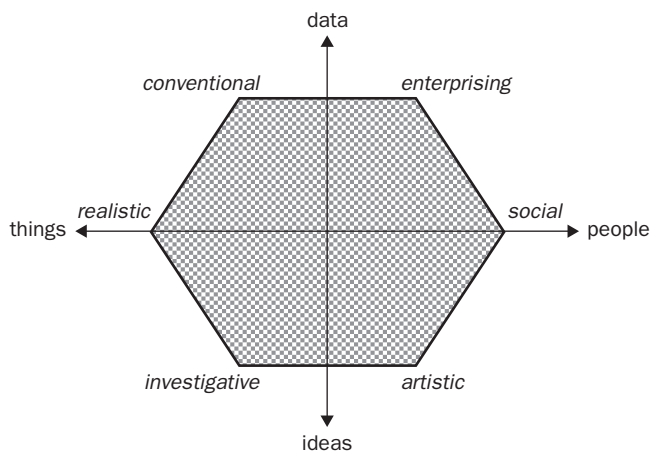
only in the number of factors but also in the type of variables conceptualized. Whereas Holland's theory is a circumplex model – each point defines the variable completely – Prediger's structure conceptualizes more than one level per variable.

Although this may sound complicated, the idea underlying Prediger's reclassification of the RIASEC is straightforward. One simply needs to fit a cross over Holland's hexagon to map the two dimensions of people vs. things and data vs. ideas (see Figure 12.4). At the midpoint between the enterprising–social–artistic triad, Prediger's "people" encompasses interests and tasks characterized by high interpersonal contact, whereas at the opposite vertices, that is, the midpoint between the conventional–realistic–investigative triad, Prediger conceptualized "things," which refers to interests and jobs characterized by low interpersonal

Table 12.4 Intercorrelations between all RIASEC types

	<i>I</i>	<i>A</i>	<i>S</i>	<i>E</i>	<i>C</i>
<i>R</i>	.41 .50 .46	.15 .13 .16	.13 .21 .21	.26 .02 .16	.81 .24 .36
<i>I</i>		.42 .42 .34	.28 .33 .30	.47 .33 .16	.24 .02 .16
<i>A</i>			.45 .42 .42	.49 .53 .35	.15 .19 .11
<i>S</i>				.68 .61 .54	.39 .42 .38
<i>E</i>					.49 .59 .68

All coefficients are Pearson's correlations: uppermost = Furnham & Schaeffer (1984); middle = Furnham & Walsh (1991); lowest = Holland (1973).
 R = Realistic, I = Investigative, A = Artistic, S = Social, E = Enterprising, C = Conventional.

**Figure 12.4** Prediger on Holland.

contact and typically impersonal in nature. Likewise, “data” represents both conventional and enterprising types and is defined by concreteness and practicality, whilst “ideas” represents both investigative and artistic and is best described in terms of thinking, creativity, and knowledge.

Prediger's dimensions have received wide empirical support (Prediger, 1982). The distinction between people and things has met substantial support in the vocational literature. In fact, pioneers in differential psychology, such as Thorndike, pointed out almost a century ago that:

the greatest difference between men and women [is] the relative strength of the interest in things and their mechanisms (stronger in men) and the interest in persons and their feelings (stronger in women). (Thorndike, 1911, p. 31)

Nonetheless, a large meta-analytic study by Rounds and Tracey (1993) provided little support for the compatibility between both models. After reviewing more than three decades of findings and synthesizing data from almost 80 RIASEC studies (published between 1965 and 1989), Rounds and Tracey concluded that the circumplex structure of the RIASEC is a unique and irreducible feature.

12.9 HOLLAND AND THE BIG FIVE

Studies have also examined the relationship of Holland's types with established personality traits, such as the Big Five. The two Big Five traits that seem most closely related to the RIASEC types are Extraversion and Openness to Experience. However, Holland's types seem more related to gender (masculinity–femininity) than to Big Five personality traits (Lippa, 1998).

Conceptually, one would expect the Big Five personality traits to “capture” variance in Holland's vocational types because both frameworks encompass dispositional differences in interests. Furthermore, as both RIASEC and Big Five taxonomies are assessed through self-report inventories, there are also methodological or psychometric reasons to expect an overlap between both systems.

Gottfredson, Jones, and Holland (1993) examined correlations between the RIASEC and Big Five and found that Openness related to artistic and investigative interests, whereas Extraversion related to social and enterprising interests. The authors also found associations between Conscientiousness and conventional interests, whilst Neuroticism was modestly but negatively correlated with all RIASEC types. However, the authors concluded that the degree of overlap was too small to substitute one measure with the other. In particular, Agreeableness, Conscientiousness, and Neuroticism seem largely unrepresented by RIASEC factors (though these personality traits are known to affect educational and occupational outcomes).

12.10 CIRCUMSCRIPTION AND COMPROMISE: GOTTFREDSON'S THEORY

In one of the most comprehensive and elaborate accounts of vocational interests, Gottfredson (2005) argued that vocational choices are determined by **circumscription and compromise** between an individual's self-concept and available choices.

Thus interests are multi-determined and develop dynamically as a result of abilities and personalities (which have a substantial general component), specific skills and expectations (which are more determined by the environment), and socioeconomic constraints (see Figure 12.5).

circumscription and compromise theory Gottfredson's vocational theory argues that career choices are determined by a complex interaction between individuals' self-perceptions and beliefs about jobs and their abilities, traits, and available opportunities (socioeconomic constraints)

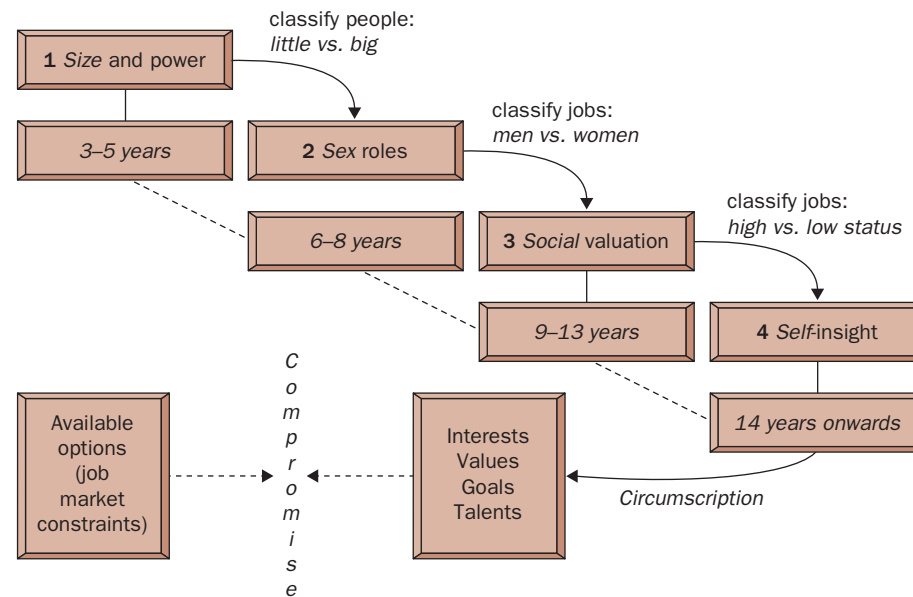


Figure 12.5 Gottfredson's theory of circumscription and compromise.

Gottfredson's theory also enables one to make specific predictions about vocational choices, notably that:

- Individuals will compromise jobs (and even fields) rather than move outside their circumscribed social status space.
- Individuals will compromise social status rather than move outside their circumscribed sexual space.

Thus, Gottfredson (2005) conceptualizes a hierarchical and multi-determined vocational theory, where self-perceptions and perceptions about jobs interact with abilities, traits, and real-life opportunities (see also Holland, 1992). Perhaps more importantly, the theory allows for an integration of genetic and developmental aspects of individual difference factors, as well as integrating abilities, personality dispositions, interests, skills, socioeconomic factors, and self-concept.

12.11 TRAIT COMPLEXES AND INTERESTS

It is no coincidence that the final section of this chapter and book (before this chapter's summary) is devoted to the concept of **trait complexes**, as this idea represents the most promising research direction not only for vocational interests but also for individual differences in general.

trait complex theory theory that attempts to integrate different constructs in differential psychology, such as personality, intelligence, and interests, in order to better understand and predict learning outcomes such as academic performance and knowledge acquisition

In simple terms, trait complexes emphasize the importance of combining and integrating individual difference or trait factors to maximize our understanding and prediction of learning outcomes, such as academic performance and knowledge

acquisition. The importance of trait complexes resides not only in the principle of *aggregation* (which enables us to include more than one type of trait or individual difference variable) but also, and especially, the *synergy* that may result from combining different traits. For example, individuals will learn better if they are brighter (have a higher IQ), work hard (high Conscientiousness score), and are intellectually curious (high Openness score). However, individuals who are high on all three traits may make better use of their intelligence (directing it towards relevant or interesting targets), work more efficiently, and be more effective in satisfying their intellectual curiosity.

Although this idea was put forward by Snow (1963) many years ago, it is only recently that differential psychologists have begun to focus on the integration of different constructs. Thus, established areas such as personality, intelligence, and interests were largely explored in isolation and mostly by different groups of researchers. This fragmentation of differential psychology – which, although not eliminated, has at least been reduced – was summarized by Cronbach (1957) in the metaphor of the “Holy Roman Empire whose citizens identify mainly with their own principality” (p. 671).

Much of the revival of interest in trait complexes is due to Ackerman's recovery of Snow's work (Ackerman, 1996, 1999; Ackerman & Beier, 2003; Ackerman & Heggstad, 1997). In line with Snow's (1992, 1995) proposition, Ackerman and Heggstad's (1997) psychometric meta-analyses (see also Ackerman, 1999; Ackerman & Beier, 2003; Goff & Ackerman, 1992) identified four main trait complexes, namely *social*, *clerical/conventional*, *science/mathematical*, and *intellectual/cultural* (see Figure 12.6).

The intellectual/cultural trait complex is dominated by crystallized abilities, creativity, Openness to Experience, and artistic interests. This trait complex overlaps slightly with the scientific/mathematical trait complex, which is characterized by realistic interests, mathematical reasoning, and visual perception ability. At the crossroads between intellectual/cultural and scientific/

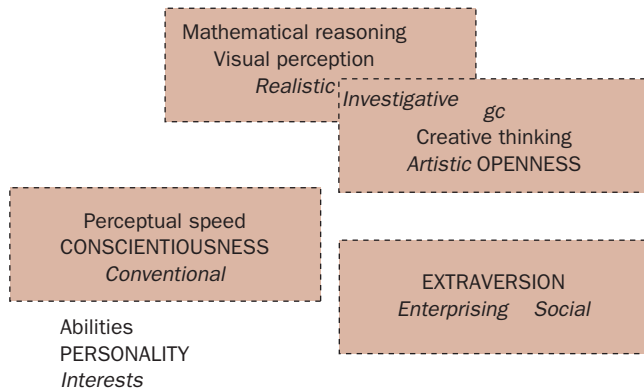


Figure 12.6 Trait complexes.

Source: Based on Ackerman & Heggstad (1997).

mathematical trait complexes we find investigative interests. Social trait complex represents a combination of Extraversion and both enterprising and social interests. Although it is not coupled with any traditional cognitive ability, it represents individual differences in interpersonal skills. The clerical/conventional trait complex includes Conscientiousness and a high perceptual speed, as well as preference for traditional/conventional interests (in that sense it is pretty much the opposite of the intellectual/cultural trait complex).

Trait complex theory has important conceptual and applied implications. Conceptually, it provides a framework for the integration of individual differences. Personality, motivation, mood, abilities, creativity, and interests are, after all, characteristics of the same individual and what helps us distinguish between one individual and another. Just as we would not describe individuals' physical appearance only in terms of their height or weight or color of eyes, our psychological descriptions should include more than one aspect of individual differences. Furthermore, it is important that we learn to combine information about different traits just as we combine information about different physical attributes. Whereas knowing that someone's weight is 95 kg would not be enough to get an accurate picture of that person's body shape, knowing his height as well just might.

Ackerman and Beier (2003) highlighted three advantages of the trait complex approach in regard to vocational interests, namely:

1. It abandons the "typological" representation of vocational interests (e.g., Holland's hexagon of six unidimensional interests).
2. It capitalizes on the links between different individual difference constructs (notably synergetic links).
3. It integrates career choices within the wider context of intellectual development.

12.12 SUMMARY AND CONCLUSIONS

This chapter covered the construct of vocational interests, which is an important element in the study of individual differences

because it complements the two other major constructs of differential psychology, namely, personality traits and intelligence. As seen:

1. Vocational interests have received insufficient attention in differential psychology, and it is only in recent years that researchers (notably Ackerman and Gottfredson) have emphasized the importance of integrating this concept with other individual differences. Yet, interests have a longstanding tradition in psychology and are of practical importance as career and vocational counselors tend to pay as much or even more attention to individuals' interests than to their personality and abilities.
2. The most important individual difference approach to the study of vocational interests has been that of John Holland. Although his theory has often been referred to as a "personality model," it refers explicitly to interests and departs from typical personality taxonomies to assess not only the person but also the environment. Furthermore, Holland's model conceptualizes the interaction or "fit" between the person's and environment's characteristics to assess the degree of congruence between interests and what educational or occupational settings can offer. Although Holland's classification presents six independent interest types, such that people and environments can be described using one category, other theorists, such as Prediger, have postulated a dimensional model more akin to personality trait taxonomies (e.g., Eysenck, Big Five, Cattell).
3. Thanks to the systematic and robust theoretical and empirical enterprises of Ackerman and Gottfredson, the field of vocational interests looks more promising than ever before. In fact, in recent years, interests have been the focus of the most advanced conceptual frameworks for the integration of different individual difference factors.

Perhaps, in a decade, textbooks will no longer dedicate separate chapters to different individual difference constructs but explain the causes, development, and consequences of their combined effects on behavior, in the hope of providing a less fragmented picture of individuality.

KEY READINGS

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