Holland's RIASEC Hexagon:
A Paradigm for Life and Work Decisions

By

Emily Bullock-Yowell, PhD
University of Southern Mississippi

Robert C. Reardon, PhD
Florida State University

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ABOUT THE AUTHORS

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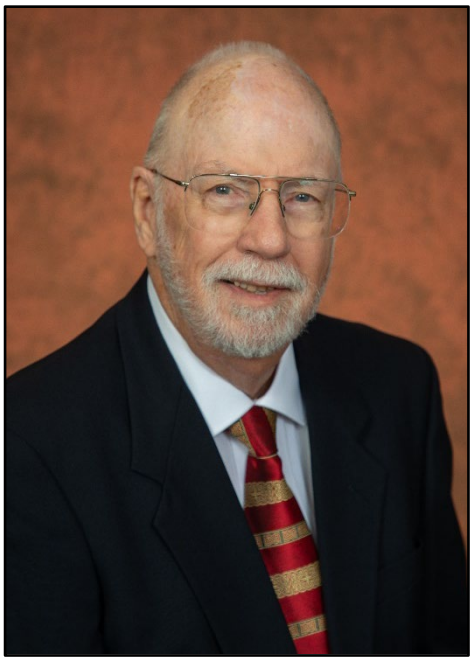
Emily Bullock-Yowell, PhD, is currently a Professor at the University of Southern Mississippi in the School of Psychology. She is a licensed psychologist in the state of Mississippi and a senior research associate with the Florida State University Tech Center. She teaches and supervises counseling psychology graduate students consistent with her program of research in vocational psychology and career development from an approach that addresses practice, theory, and research connections.



Robert Reardon, PhD, is currently Professor Emeritus with a courtesy appointment in the Florida State University (FSU) Career Center. He was Director of Instruction, Research, and Evaluation in the Career Center, Professor in the Department of Educational Psychology and Learning Systems, and Co-Director of the Center for the Study of Technology in Counseling and Career Development (Tech Center) at FSU. He held full-time counseling and teaching positions at FSU from 1966 until his retirement in 2007.

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PREFACE

The purpose of this book is to examine John Holland's theory of vocational personalities and work environments and extend it to other life decisions that involve effectively matching individuals with their life and work options. It is also intended to refresh the thinking of career counselors, advisors, managers, coaches, and others working in the area of life and career decision-making. We believe that many persons in education, psychology, and business are familiar with Holland's RIASEC theory, and this book explores it beyond the usual boundaries. Indeed, this book focuses on the RIASEC hexagon and theory alone as tools for improving career and life planning. In this way, we believe the theory and hexagon can be used in *primary prevention*, an intervention focused on the prevention of life/career decision difficulties for many people before they experience such problems. Primary prevention aims to decrease risk factors and increase protective factors in such decision-making.

We view this book as a combination of things. First, it can be a refresher for some professionals and students who learned about Holland's RIASEC theory as part of their training and career preparation. It may extend earlier learning about vocational interests to other areas like educational, leisure, and relationship choices. Second, it may help parents, teachers, advisors, retirees, clergy, and students assist others in making good choices about options that match their interests and goals. All of the individuals that assist others in the tasks of career and life planning (e.g., human resource professionals, career counselors) can use this book to better assist clients and employees. In a nutshell, this book is both a lite tutorial for vocational counselors and organizational consultants, and a self-help resource for anyone making career/life decisions.

Many of our decisions involve the pursuit of good matches for ourselves and our options, e.g., spouse/partner, job, college, friendships, organizations, teams, charities, political parties, and more. Holland's RIASEC paradigm provides a *language, vocabulary,* or *lexicon* that takes much of the guesswork out of this process, and it can be applied in many different match situations. We often use idioms to talk about "matches made in heaven," "meeting of the minds," "find one's match," "meet your match," "meet one's match," and this book helps us understand and enhance such matches using RIASEC theory.

Title and Authorship

We decided to use the word *paradigm* in the title of this book rather than theory, scheme, principle, or model for several reasons, but we will also use these terms interchangeably throughout the book. First, the word paradigm is different and raises some mystery or questions for a reader to explore further. Second, it is a term used more frequently in contemporary everyday life, i.e., climate change involves a new paradigm for understanding weather. Among the definitions of the word paradigm we found, "a standard, perspective, or set of ideas; a way of looking at something." Merriam-Webster's definition included "a model or pattern of something that may be copied; a theory or group of ideas about how something should be done, made, or thought about." Finally, we put Holland's hexagon figure with the RIASEC term on the cover because it is the focal point of his work and this book.

We have designated Emily Bullock-Yowell and Robert Reardon as "authors" of this book, but the second author functioned mostly as a contributor. The first author had a contract to publish this book in 2018 but the pandemic, the publisher reneging on the contract, and other life events conspired to leave the work unfinished. The second author had an abiding interest in the work and offered to help complete it. In the meantime, the two served as internal editors for the

book on Holland's autobiography published by NCDA (Rayman & Gottfredson, 2020). In 2023, Reardon contacted Florida State Open Publishing and that eventually led to this publication. Both Yowell and Reardon hold PhD degrees in counseling and career development and have provided counseling, teaching, and research in their respective universities for many years.

Overview of Book

This book provides information that allows individuals to design their lives, including resources to develop a better understanding of themselves and the organizations and occupations around them. Holland's RIASEC paradigm also provides guidance in improving organizations and work teams, as well as how to plan free time or encore careers in retirement. Human resource professionals and career counselors can use this book to better assist their employees and clients. As readers move through the book, we will go deeper into the paradigm itself and how it can be integrated into one's language and world views.

Chapters

Chapter 1 uses a case example to analyze how a single mother with three children reorganized her life and found work after a divorce. Her counselor used Holland's RIASEC theory to help her reorient herself in this new situation. Indeed, the counselor's work was based on the Corridor Approach to career assistance that Holland described in 1968, an example of primary prevention with career decision-making. The chapter also examines the reasons to use theory in decision-making and the role of work in our lives.

Chapter 2 explores the RIASEC paradigm and the life and work of John Holland as the founder of this theory. It describes Holland's creative work as a theorist who focused on practical applications of theory. The chapter also reviews basic components of RIASEC theory, including

the typology, and the practical applications of it regarding the interrelationships among the six types of the theory.

Chapter 3 "squeezes" Holland's RIASEC model in relation to other personality paradigms, and delves into a deeper analysis of the hexagon and the relation of the types to one another in terms of the theory's secondary constructs. Finally, it reviews resources and tools external to this book that will help individuals learn ways Holland's model can be used in life/career decisions.

Chapter 4 focuses on RIASEC theory's utility in educational and work choices, and it integrates information on how to help others use the hexagon in games and other interventions. The information shared in this chapter is applicable for counselors, advisors, teachers, human resource professionals, business executives, business owners, parents, or anyone seeking to find their best environmental fit in life.

Chapter 5 focuses on how interests connect to factors in the environment that contribute to an individual's organizational fit and career/life satisfaction. It reviews how the RIASEC typology can impact organizational culture and how work performance by an individual can vary depending on the organizational environment and the dominance of varied types. The chapter then examines ways RIASEC information can be used with special tools, e.g., SDS, VPI, PCI, CASI, developed by Holland and others for individual counseling and organizational management.

Chapter 6 focuses on life roles outside of worker or student in terms of RIASEC theory, including spouse or partner, parent, volunteer, retiree, and citizen, i.e., roles that typically include leisure. The chapter discusses how a relationship with another person involves creating an environment with that person, and this includes family relationships, i.e., spouse/partner. In

addition, the chapter examines research involving RIASEC and parenting and the effect this can have on the interests of children. Finally, the chapter explores how an individual's RIASEC interests are involved in leisure choices that can enhance life satisfaction.

Chapter 7 includes a review and a discussion of 10 myths associated with RIASEC theory and provides facts and information that challenge those ideas. It continues with some reflections by several observers, including John Holland and Gary Gottfredson, on RIASEC theory and what we have learned about it since its founding over fifty years ago. It finishes with a summary of how Holland's RIASEC theory and the hexagon can be used freely and creatively to help individuals make career and life choices in a self-help way.

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CHAPTER 1

USING THE RIASEC PARADIGM IN LIFE DECISIONS

This chapter begins with Sheree's story about a life-changing event that led her to seek help from a counselor who used Holland's RIASEC theory and hexagon to help her recover and move ahead. Later, the chapter examines reasons for using theory or a paradigm like Holland's to make life decisions. Finally, it summarizes the importance of work in our lives.

Sheree's Story

Brad and Sheree's relationship was a story filled with stereotypes that represented their personal reality. They met at a fraternity party because Brad noticed her beautiful blonde hair from across the room. They married the summer after graduating from college. Sheree financially supported them using her marketing degree while Brad completed law school. When Brad received a lucrative, international job offer, Sheree stopped working outside the home and cared full time for their home and three children. Sheree spent her time in tasks such as designing logos for the school fundraiser and household budgeting while Brad was largely overseas on

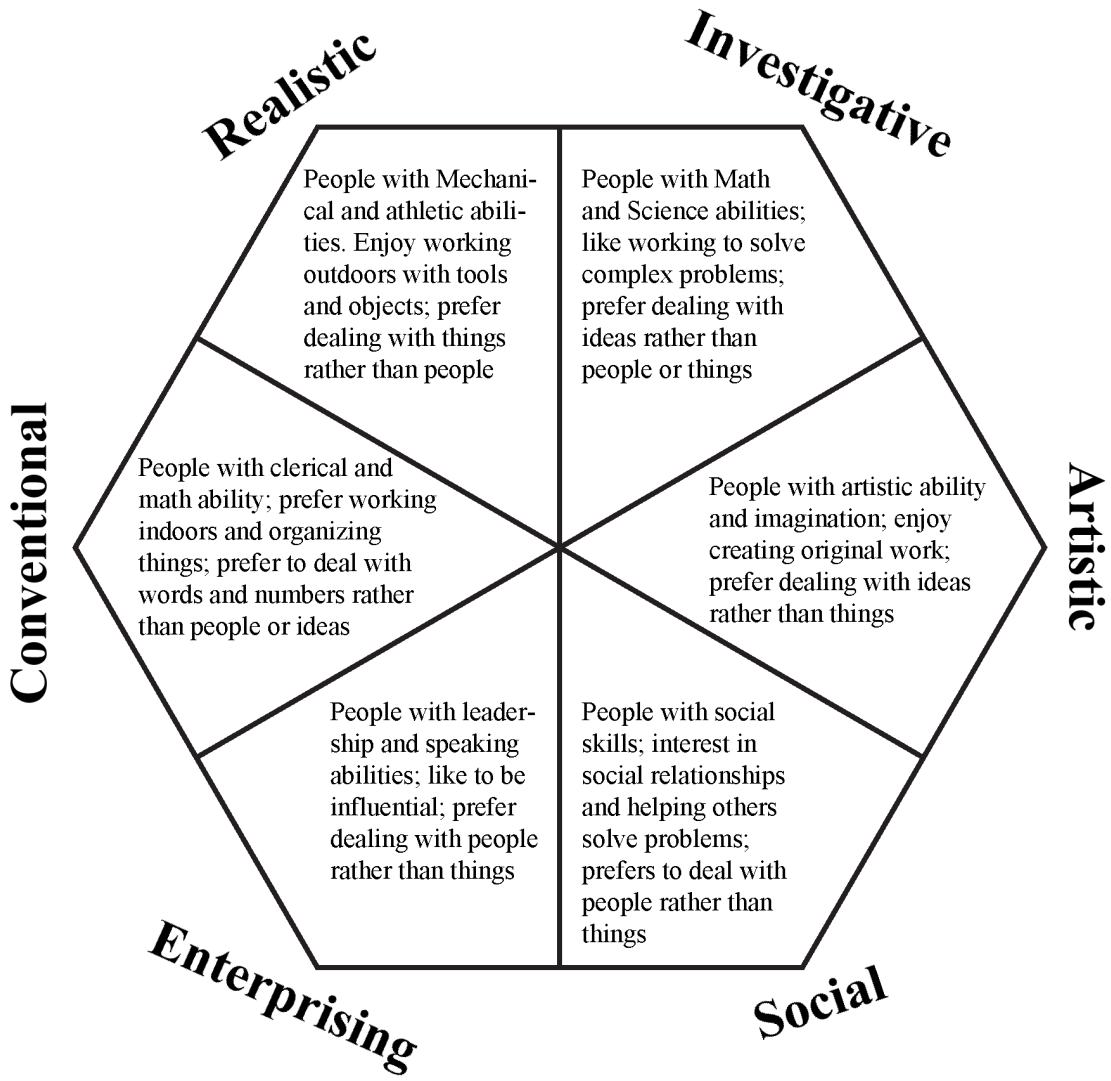
business. One day Brad decided to live overseas permanently and did not want his family to follow. Sheree found herself needing to return to work as a single mom after nearly 12 years without paid employment. This led her to meet with a career counselor, Elizabeth, who was working at a local agency that provided a variety of services on a sliding fee scale.

Sheree walked into Elizabeth's office wide-eyed depicting a thin veil of confidence. Elizabeth greeted Sheree kindly, with a "What brings you here today?" Sheree stated bluntly, "I need to work. Can you find me something?" Elizabeth and Sheree sat down, and Elizabeth began talking with Sheree about the things she typically talked to new clients about, like what was happening in their lives that brought them to career counseling, what activities both paid and unpaid they had been doing in the past. As Sheree began to share her story, her veil of confidence fell, and she was visibly shaken. Elizabeth let Sheree know she had found the right place to get help and they would work together to find work for Sheree.

After Sheree had shared more about her journey thus far, Elizabeth said it would be helpful to learn a bit more about Sheree's interests and skills. Elizabeth displayed a picture depicting six areas of interest around a hexagon that she called the RIASEC areas (See Figure 1.1).

This figure was based on Holland's (1997) personality typology. They began to discuss these interest categories and how Sheree's interests and experience fit into this way of viewing the world of work. At first, Sheree said she had worked so little in her life that she had no work-related interests or skills to talk about. Sheree thought these RIASEC areas did not apply to a "stay-at-home mom." Elizabeth assured her that she had been doing all kinds of things relevant to the world-of-work and they would collaborate to find how those things fit into the RIASEC categories and, ultimately, a paid job.

Figure 1.1. RIASEC Hexagon with Descriptions



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As Sheree became more comfortable with Elizabeth and more confident in her ability to help, she began to share the ways she had spent her time before Brad left. As Sheree talked, Elizabeth would point out how the tasks Sheree described fit into these RIASEC categories. Sheree talked about how she enjoyed contributing to the school's fundraisers and editing Brad's

work documents. She spoke to how crazy it was that she even loved balancing her checking account each month. She reflected on the fulfillment she received in caring for her children and making sure their needs were met.

After a long discussion, Elizabeth talked to Sheree about the ways her tasks as a homemaker fit into the world of paid work. She explained how it seemed Sheree most enjoyed using technology to help with the marketing and how skilled she was in keeping information and money organized. Elizabeth asked Sheree about her favorite aspect of helping with the school's marketing. Sheree explained it wasn't as much about creating logos and websites as it was solving the problems associated with how to do it within the preferences and constraints given. Elizabeth went on to explain how Sheree's approach to technology-based marketing fit into the *Investigative* category of the RIASEC model due to her problem-solving focus in the tasks. Sheree's organizational skills fit with the *Conventional* aspect of the RIASEC categories. She explained how these two interest areas were typical of people that preferred to work with things rather than people. Yet, the satisfaction Sheree derived from taking care of her children and benefiting the fundraisers also highlighted Sheree's *Social* interests or helping others. Over the course of their time together, Sheree and Elizabeth began to look for job opportunities where Sheree could help market organizations focused on helping others. Sheree began to gain confidence in what she had learned and accomplished during her time focused on home care duties.

After working with Elizabeth for several weeks on various job-hunting tasks, Sheree was able to find work with the Girl Scouts of America office initially doing office administration but eventually she transitioned to their online marketing department. The position allowed her to work a flexible schedule and continue to do some of the personal things important to her such as

picking her children up from school. Actually, her children were able to be involved in many of the events she promoted. While the salary never allowed for the lifestyle she and her children had during the years Brad was home, they were able to live in a modest home in a safe neighborhood with good public schools. Sheree shared with Elizabeth that she and the children were adjusting well.

Using the RIASEC Hexagon—Corridor Approach

While many things happened in and outside of career counseling to get Sheree to a place where she could support herself and her children, one guiding force was Holland's RIASEC paradigm. It helped her organize what she viewed as caring for her family into work-based interests and skills using the RIASEC categories on the hexagon. In this book, we explore how this theory can impact lives in new ways. Sheree certainly appreciated the power of these ideas in her life.

In his early work, Holland likened getting help in career and employment decisions to looking up something in the yellow pages of the phone book (Reardon, 2017). He did not think that individual career counseling was required, although he later modified this view in some situations.

Holland believed that RIASEC theory itself could help in career and life planning. At a career theory symposium in 1968, Holland described his Corridor Approach to a school's career services by verbally sketching out a long hallway with a desk at the far end from the door. The corridor walls had six large displays of information about six types of students and environments with details about the characteristics of the types, i.e., personality traits, interests, majors, occupations, club activities, leisure options, and more. If students found the information on the panels useful, they turned and walked back out the door. However, if that didn't happen, they

headed to the desk at the end of the hallway. There, a staff person said, “Can I help you?” If they could not be helpful, then an appointment was made for the student to see a counselor. We believe it illustrates the power of primary prevention focused on the prevention of life/career decision difficulties before individuals experience such problems (Albee & Ryan-Finn, 1993). Throughout this book, we will provide additional examples of this “Corridor Approach” for making career and life decisions.

Why Care about RIASEC Theory?

The typical person spends significant energy during their lifetime on ways to improve themselves, their work life or situation, or people important to them. These tasks often involve the search for the best method to achieve this change or insight. This book describes a theory or paradigm that can address how to focus personal energy in a productive direction. Typically, we do not realize or appreciate how theories and research developed in ivory towers are influencing what we do, what we know, and the way information is delivered to us. Holland’s theory of vocational personality and work environments is an example of a theory that affects our lives.

By understanding Holland’s theory, we can better harness its positive contribution as Sheree did. Holland’s theory and his RIASEC hexagon (details to come in Chapter 2) are everywhere around us, impacting the information we have about ourselves and our work in ways we typically do not recognize. Holland’s theory provides an excellent method for organizing the world of work and how we effectively navigate our movement through it. This book will illuminate the details of Holland’s theory to allow an individual to harness its concepts and to be more self-directed for navigating the world-of-work and other life options with increased self-understanding.

A worthwhile question is, “Why do we need Holland’s paradigm to help us with understanding ourselves and life?” Holland’s theory can be a guide when we are in complex situations. There is no reason why we should try and navigate a novel task by ourselves without building upon the knowledge others have gained in navigating the same or similar tasks. Good theories help us do this. Moreover, Holland’s theory is supported by years of research that validates the theory’s effectiveness for many people in a variety of situations (Kennelly et al., 2018). This includes 2,318 publications from 1953-2016 in 355 different publications worldwide. Rayman and Atanasoff (1999) spoke of how Holland’s theory is rare in its ability to explain career and work behavior across people and settings in a way that is consumable for everyone from the researcher to the practitioner to amateur persons. There are many other theories that attempt to express the complexity inherent in human behavior, but these theories can become too complex to actually apply in practice. Holland’s theory avoids this issue and meets the career needs of many, while also being one of the most studied theories of personality and work ever undertaken by scholars.

Our belief is that people want help or at least a smooth path to determining their work and life choices. Holland’s theory addresses this desire of the everyday person. Later in his career, Holland (1997) noted that people all maintain their own “Personal Career Theory (PCT).” The PCTs can be unique, complex, and useful for many. For some, they are weak and lead to career problems.

The Role of Work in our Lives

Erikson (1963) said that Freud once indicated that the basic tasks of life are “"Lieben und arbeiten' (to love and to work)” (p. 265). If this is true, then two of an individual’s biggest decisions in life are about choices for long-term personal relationships and what work to pursue.

Freud went on to indicate that we do not tend to make either of those decisions logically. It is thought provoking to realize that two of an individual's biggest life choices may be determined on a hunch or perhaps just through the path of least resistance. Holland's RIASEC theory may provide a method for dealing with the "love and work" choices that are explored in this book.

At this point, we want to define two important terms used in this book, *work* and *career*. We need to do this because they differ somewhat from the common usage of these terms. Reardon et al. (2022, p. 6) defined *work* as "activity that produces something of value for self or others." This definition is very important because it includes paid and unpaid work. Work, then, encompasses a large portion of our lives. A person could spend about 86,000 hours over a lifetime engaged in paid work *(*working for 43 years, 8 hours a day, 5 days a week, 50 weeks a year) and even more in unpaid work. Ideally, an individual would find that work meets their needs and wants, is enjoyable much of the time, and provides them with a desired lifestyle.

Career was defined as "time extended working out of a purposeful life pattern through work undertaken by the person" (Reardon et al., 2022, p. 5). This definition suggests that a career is personal and unique to an individual, is carried out over a period of time, involves tradeoffs and compromises between interests and environmental realities, is purposeful, and includes varied life roles. This book adheres to these two definitions in the review and discussion of Holland's RIASEC paradigm and related applications.

Individuals tend to depend on work to guide their lives and their identity. Consider that when you meet someone the first think you are likely to ask is, "What do you do?" Work and career form our personal identity as well as our impression of others. Consider the far-reaching implications of how we view ourselves and how others view us. Our inward and outward identities largely determine the life we lead and who wants to be associated with us. These

identities and the things our work supports ultimately help determine how we live, e.g., the neighborhood, who we marry, how many children we want or can afford, the types of vacations we take, the friends with which we associate, and so on.

Summary

This chapter began with Sheree's story, a divorcee with a life-changing event as a single mother that led her to seek help from a career counselor. The counselor used Holland's RIASEC theory and hexagon to help Sheree recover and move ahead with her life and work. The counselor's work was based on a metaphor, the Corridor Approach to career assistance, that Holland described early in his work. Later, the chapter examined reasons for using theory or a paradigm like Holland's to make life decisions, and it concluded with a summary of the importance of work in our lives.

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CHAPTER 2

THE MAN BEHIND THE RIASEC HEXAGON

There are many ideas about how to improve our careers and, for that matter, our lives. These ideas come from magazine articles or online sites requesting us to take a quiz to find the best career path, well-meaning family that feel they know what would really make us happy, and professionals we pay hoping they have the best solution to our problems. Ideas also originate from ivory towers that vacillate between honoring age-old truths and innovative ideas for self-improvement. One source that has consistently influenced the career advice received from all of the varied sources is John L. Holland's RIASEC theory of vocational personalities and work environments (P/E) (Holland, 1997). For this reason, we want to share more about Holland's life and work so individuals can evaluate the suggestions they receive regarding the navigation of their career and life.

Did you know that all possible *careers, jobs, work roles, organizations, training opportunities, bosses, hobbies, interests, values, skills, college majors, retirement plans, high school classes, social clubs*, and *friend groups* could be organized into six categories? Wouldn't

life be easier if we understood how all these aspects of our lives and choices could be organized into six categories? It is likely that in many ways you have intuitively perceived or been formally introduced to these six categories, but it is unlikely it was explained and applied for you.

This book provides that introduction. *Whether you are looking to improve yourself, your position in life, your relationships, your organization, or the lives and work of others, your understanding of Holland's RIASEC theory can assist you in meeting your goal*. The theory's simplicity and surprising depth have helped many people manage their choices, careers, organizations, research, client desires, and worker needs.

John Holland: The Theorist and Person

The development of a theory may be likened to the development of a large corporation, so it is important to know about the founder to fully understand the theory or business. John Lewis Holland was born in 1919 in Omaha, Nebraska. His father, an immigrant from London, was an advertising agent, and his mother was an elementary school teacher. John Holland was one of four children. He attended the University of Omaha as a music major (note to reader—remember this) initially but eventually graduated with a psychology degree. He and his wife, Elsie, had three children. John Holland's first job after graduating college in 1942 was with the army in psychological and social services. This seemed to fuel his interest in becoming a psychologist, so he was admitted to the University of Minnesota and graduated with a PhD in counseling psychology in 1952 (American Psychological Association, 1995; Holland, 1974; Reardon & Lenz, 2015; Weinrach, 1980).

Later, Weinrach (1996) published the results of Holland's Self-Directed Search (SDS), a RIASEC-based interest inventory. John Holland's personal three-letter SDS Code was determined to be *A/E I* (i.e., a tie between Artistic and Enterprising with a less Investigative

interest). (Review Figure 1.1 to refresh your understanding of the RIASEC types) Holland interpreted his own type to be *AEI/R/S* based on the small practical differences in his interest across all RIASEC types but *C* or Conventional. Holland's expressed occupational preferences show his strongest was for *S* or Social jobs. As you will learn in reading more about Holland's theory and RIASEC in this book, John Holland had undifferentiated interests and a high RIASEC profile elevation. You can also see how his prominent Artistic type was highlighted through his ability to innovate to the end of his life and his comfort with challenging the status quo in almost any setting he entered (Reardon & Lenz, 2015).

Some have said John Holland did not fit very well at the University of Minnesota because the psychology department was steeped in data and empiricism, and Holland's attention to practical matters was not always appreciated by his mentors. (We note that Holland was given an honorary doctorate by the University of Minnesota later in his career.) Spokane and Schultheiss (1996) described how Holland may have been more influenced by the approach to research Minnesota espoused given his relentless pursuit later of empirically validating his practical or theoretically derived ideas.

Holland's early career focused on understanding students in the college environment. He challenged the notion that more elite institutions produced better students. Holland's position was supported in subsequent research findings that elite institutions often drew better students to begin with, which was the key to their superior outputs. Holland focused on this work and other career development research at the National Merit Scholarship Corporation and American College Testing (ACT). The latter part of his career was spent conducting research at Johns Hopkins University, where progress on RIASEC-based assessments was made (Gottfredson, 1999).

Formally retiring in 1980, Holland continued to advance his theory and research until his death in 2008 at age 89 (Reardon & Lenz, 2015). After 1980, there were more accounts of Holland visiting and communicating with those who were applying and advancing his theory. In 2004, he wrote an unpublished manuscript, *My Life with a Theory*, detailing his experience developing the theory that influenced so many. This unusual autobiography, which included family photos, correspondence, a summary of RIASEC theory, and a score of artifacts, was edited and compiled by two friends, Jack Rayman and Gary Gottfredson, and published by the National Career Development Association in 2020 (Rayman & Gottfredson, 2020).

We can add that Holland's autobiography is important today because the most complete book about his work, *Making vocational choices: A theory of vocational personalities and work environments* (Holland,1997), is no longer in print by the publisher. Chapter 1 in the autobiography is taken from the 1997 book with permission of the publisher and is a complete statement of RIASEC theory. Chapter 2, also permitted by the publisher, focuses on the environmental aspects of the theory.

Gary Gottfredson (1999) noted Holland's strength in collaborating with others and his consistent willingness to consult with colleagues and students around the world. In fact, Holland consulted with us (Bullock-Yowell & Reardon) about forming the ideas and analyzing initial data for research involving RIASEC interests. I (Bullock-Yowell) was fascinated to learn directly from the creator of RIASEC theory, and my interaction with John Holland showed me how he believed that my research ideas were ones that he shared and could be pursued. It was eye opening, and much of the reason for writing this book is to share with others how much RIASEC theory and its applications were shaped by Holland in interactions with others.

When we experience criticism or setbacks in our career, we may feel alone. Holland's career path provides an example of how failure can go hand-and-hand with success, which can be instructive for all of us. While Holland experienced much success through international acclaim, financial compensation, and research productivity, he also experienced disappointment and criticism in his career. In an interview with Weinrach (1980), Holland described his firing from ACT as a painful experience. Based on his account of the dismissal, his Artistic-based tendency to challenge others may have been the cause. Of course, he eventually conceptualized that job loss as a mismatch of his personality with the environment, citing ACT as being more Enterprising than he was. Holland also used career disappointments and criticism from others as fuel for continuing and innovating (Gottfredson, 1999). Holland spoke to the motivation he derived through early jobs as a career counselor. He found current interest assessments lacking and began the creation of his first assessment tool, the Vocational Preference Inventory, as a reaction to what he found disappointing in other tools (American Psychological Association, 1995). As is common among those that find success and popularity in any field, Holland experienced a good deal of criticism. Gottfredson states he took much of that criticism seriously and used the information to improve his work.

A major contribution by Holland, likely driven by his willingness to challenge the status quo, was that career services could be more self- or user-driven. Psychological services and counseling can be very time intensive. Psychological assessments, including many interest inventories, typically require two or more meetings with a counselor or psychologist to complete, interpret, and act on the recommendations in the assessment. Holland saw another route he believed could help more people and perhaps more effectively. He created an inventory that could be self-administered, self-scored, and self-interpreted when necessary. The outgrowth of

that perspective most notably resulted in his interest inventory, the Self-Directed Search (Holland & Messer, 2015) now in its fifth edition and revised after Holland's death.

At his formal retirement in 1980, Holland was cited as being in the top one-tenth of one percent of publishing psychologists (Gottfredson, 1999). A comprehensive review of work produced on his theory and associated applications shows over 2,200 publications were produced on the topics from 1953 to 2015 (Foutch et al., 2014; Kennelly et al., 2016). Holland's colleagues have cited his major contributions over the years as falling into four main themes: intellectual contributions, practical devices, challenges of prevailing views, and influence on others (Gottfredson, 1980, 1999).

At the time of Holland's death in 2008, there was an outpouring of tributes to him as colleagues processed his influence on their lives and careers. The most recent demonstration of this was the *Festschrift* (Reardon, 2022), a 76-page book available for free and online with nine chapters contributed by 10 authors, i.e., students, practitioners and scholars, who shared their reflections and reactions to Holland's autobiography as edited by J. Rayman & G. Gottfredson (2020). Additional biographical information about Holland is available on the publisher's website at https://self-directed-search.com/about-john-holland/. The theory detailed in this book has been influential to many and was long guided by a single person, John Lewis Holland.

The Theory's Basic Components

Now that we understand more about the founder and the context in which this theory was born, let us get back to the theory itself. There are four basic assumptions of Holland's theory (Holland, 1997).

1. People can be categorized as one of six personality types.

2. Environments in which we work and play can be categorized into six areas that parallel the personality types.
3. People look for environments that allow them to be and express themselves.
4. Behavior is affected by how well the persons fit in their environments.

As noted earlier in discussing the hexagon, the six types include Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Each type is described in the table below along with occupation examples representing a variety of educational and prestige levels (Holland, 1997; Reardon & Lenz, 2015). While you may only relate to a small segment of the occupations within an interest area, Holland's theory sought to explain the interests of people from all walks of life as well as the corresponding environments in which people live. The descriptions in Tables 2.1 and 2.2 provide a brief overview of RIASEC theory and typical characteristics of both persons and environments.

It is essential to recognize that Holland viewed these RIASEC personality types as models by which we compare actual people and there is no assumption that any one individual possesses all aspects of any one type. In fact, most assessments using the RIASEC types provide test-takers with a combination of their top two or three types. These assessments often yield Holland or RIASEC Codes that are communicated by combining the first letter of each type that best typifies that person. For example, an individual with an SEA Holland Code would communicate that this person has the highest personality fit or interests in the Social area, second highest in the Enterprising area, and the third highest in the Artistic area.

Table 2.1. A Brief Description of the Holland Personality Type

	Personality Type					
Attribute	**Realistic**	**Investigative**	**Artistic**	**Social**	**Enterprising**	**Conventional**
Preferences for activities and occupations	Manipulation of machines, tools and things	Exploration, understanding and prediction or control of natural and social phenomena	Literary, musical, or artistic activities	Helping, teaching, treating, counseling, or serving others through personal interaction	Persuading, manipulating, or directing others	Establishing or maintaining orderly routines, application of standards
Values	Material rewards for tangible accomplishments	Development or acquisition of knowledge	Creative expression of ideas, emotions or sentiments	Fostering the welfare of others, social service	Material accomplishment and social status	Material or financial accomplishment and power in social, business, or political arenas
Sees self as	Practical, conservative, and having manual and mechanical skills—lacking social skills	Analytical, intelligent, skeptical and having academic talent—lacking interpersonal skills	Open to experience, innovative, intellectual—lacking clerical or office skills	Empathic, patient, and having interpersonal skills—lacking mechanical ability	Having sales and persuasive ability—lacking scientific ability	Having technical skills in business or production—lacking artistic competencies
Others see as	Normal, frank	Asocial, intellectual	Unconventional, disorderly, creative	Nurturing agreeable, extroverted	Energetic, gregarious	Careful, conforming
Avoids	Interaction with people	Persuasion or sales activities	Routines and conformity to established rules	Mechanical and technical activity	Scientific, intellectual, or abstruse topics	Ambiguous or unstructured undertakings

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Table 2.2. A Brief Description of the Holland Environmental Typology

	Environmental Type					
Attribute	**Realistic**	**Investigative**	**Artistic**	**Social**	**Enterprising**	**Conventional**
Requires	Manual and mechanical competencies, interaction with machines, tools, and objects	Analytical, technical, scientific, and verbal competencies	Innovation or creative ability, emotionally expressive interaction with others	Interpersonal competencies, skill in mentoring, treating, healing, or teaching others	Skills in persuasion and manipulation of others	Clerical skills, skills in meeting precise standards for performance
Demands and rewards the display of	Conforming behavior, practical accomplishment	Skepticism and persistence in problem solving, documentation of new knowledge, understanding or solution of problems	Imagination in literary, artistic or musical accomplishment	Empathy, humanitarianism sociability, friendliness	Initiative in the pursuit of financial or material accomplishment; dominance; self-confidence	Organizational ability, conformity, dependability
Values or personal styles allowed expression	Practical, productive and concrete values; robust, risky, adventurous styles	Acquisition of knowledge through scholarship or investigation	Unconventional ideas or manners, aesthetic values	Concern for the welfare of others	Acquisitive or power-oriented styles, responsibility	Conventional outlook and concern for orderliness and routines
Occupations or other environments involve	Concrete, practical activity; use of machines, tools, materials	Analytical or intellectual activity aimed at trouble-shooting or creation and use of knowledge	Creative work in music, writing, performance, sculpture, or unstructured intellectual endeavors	Working with others in a helpful or facilitating way	Selling, leading, manipulating others to attain personal or organizational goals	Working with things, numbers, or machines to meet predictable organizational demands or specified standards
Sample occupations	Carpenter, truck operator	Psychologist, microbiologist	Musician, interior designer	Counselor, clergy member	Lawyer, retail store manager	Production editor, bookkeeper

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Additionally, most jobs (occupations or environments) involve a blend of two or three RIASEC areas. For example, teaching is generally a Social job as teachers work with students in a helping capacity. There are many different types of teachers and most of those different types can be explained in RIASEC terms. The typical high school math teacher would likely enjoy Social and Investigative tasks as teaching math involves helping others as well as solving problems and working with information. A typical high school drama teacher would enjoy the Social aspects of the job as well as the Artistic aspects that allows for engagement in creative activities. Using a combination of RIASEC types to explain a person's interest areas allows for a more complete representation of the complexity of personality as well as the complexity that can exist in environments (Reardon & Lenz, 2015). As noted above, John Holland considered himself to be a combination of several types resulting in his own complex Holland code of AEI/R/S (Weinrach, 1980).

The Hexagon and Relationships Among RIASEC Types

As we noted in Chapter 1, the hexagon is the graphic depiction of Holland's RIASEC types. The hexagon also serves the purpose of graphically representing several concepts within the theory and associated research. The Figure 1.1 depicts the hexagon along with short descriptions of the RIASEC types and other factors relevant to the theory. This figure can be an effective way to quickly describe the RIASEC types and Holland's theory to others. Subsequent chapters in this book will define all aspects of Figure 1.1.

The theory states that the arrangement of the RIASEC types on the hexagon depicts the relationship among the types. For example, the Investigative and Artistic types are considered to be more alike than the Artistic and Conventional types. Research has shown us the relationship among the RIASEC types may not be quite as it is depicted on the hexagon (Tracey & Rounds,

1993). For example, some types may be more similar than the distance on the hexagon indicates. There are also differences in the relationship among the types across cultures. Yet, there seem to be more similarities in the structure of the hexagon across groups than differences (Bullock et al., 2010; Rounds & Tracey, 1996). For example, Day et al. (1998) found Holland's model adequately represented men and women that identified as African Americans, Mexican Americans, Asian Americans, Native Americans, and Caucasians. More is said about the usefulness of the theory and hexagon across diverse cultures and identities in Chapter 7.

Given how the RIASEC areas are structured on the hexagon from a distance standpoint, there is practical usefulness to the hexagon. For example, when discussing RIASEC types with someone, we find it useful to ask if their interests "crossed the hexagon" as a way of determining if their interest areas are fairly different from one another. For example, one might be highly interested in both the Social and Realistic areas. Practically, it can be difficult sometimes to find paid work that incorporates every possible combination of interests. Most jobs that involve helping others (i.e., Social jobs) occur indoors. If one has equal levels of interest in the Social and Realistic areas, one may have a hard time satisfying both of those interests in one job since Realistic interests often mean people enjoy being outdoors and seeing the product of their work.

Alternatively, an individual may find that their work environment is pressuring them to combine two very different RIASEC areas such as Investigative and Enterprising. For example, an electrical engineer, a job typically preferred by those with Investigative and Realistic interests may have a boss that is pushing them to lead a group of engineers and marketing executives to find a less expensive way to address a problem. As an Investigative/Realistic type, the engineer wants to find the best way to solve the problem, but their Enterprising boss wants to find the way that makes the most money for the organization. Such differences between RIASEC types can

lead to problems in the workplace that the hexagon may help explain. We explore this matter further in later chapters.

Chapter 3 includes a review of the Secondary Constructs in this RIASEC typological theory that provide more detailed information about how to "squeeze" the RIASEC paradigm to further understand the relationships among the six types and apply this information to individuals and organizational relationships.

Summary

Chapter 2 explored the RIASEC paradigm and the life and work of John Holland as the founder of this theory. It described Holland's creative work as a theorist who focused on practical applications of theory. The chapter also reviews basic components of RIASEC theory and the practical applications of it regarding the interrelationships among the six types of the theory. As you proceed through the book examining matches involving a person's life, work, and relationships, it will be helpful to reference the information in this chapter.

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CHAPTER 3

SQUEEZING THE THEORY: PERSONALITY AND SECONDARY CONSTRUCTS

This chapter begins with recognition of the iconic nature of Holland's RIASEC theory. It then shifts to an exploration of RIASEC types in relation to other personality paradigms that "squeeze" the theory. It concludes with an examination of how the theory's secondary constructs are useful and provide a more complete understanding of the RIASEC typology in practice.

We use the word "squeeze" in this chapter for a reason (Reardon, 2022). The second author of this book (Reardon) and a colleague were conducting a workshop in Florida on using the Self-Directed Search (SDS), the interest inventory developed by Holland. On this particular day, the presenters had a special guest attending. As the day went on, some members of the group figured out that we had a "celebrity" in the audience, which added some excitement to the regular SDS workshop. At the end of the day, the participants were anxious to see what kind of grade John Holland was going to give the presenters regarding the program. I (Reardon) recall him saying we merited an "A" but that we "squeezed the theory a little bit." This chapter, then,

squeezes the theory a little bit, and it is important to remember that the ideas presented in this chapter are useful, all things being equal, including that individuals are in good mental and physical health and living in a safe place.

Recognition

Holland's theory may be the most popular career development theory in the world (e.g., Rayman & Atanasoff, 1999). Margaret Nauta (2010) reflected on more than 50 years of work in psychology and noted that "This theory's contributions to counseling psychology are undeniable, as Holland's paradigm and the hexagon figure now pervades career counseling research and practice" (p. 11). Gary Gottfredson, one of Holland's most regular collaborators, said, "His theory of vocational personalities and work environments revolutionized the delivery of vocational assistance worldwide" (1999, p. 15). Reardon (2017) said of RIASEC theory, "It has also been incorporated into so many other tools and programs that the theory and hexagon have become icons in our field" (p. 31). Because of the theory's ready applicability and popularity, it has been researched extensively with recent counts indicating over 2,200 publications relevant to the theory from 1953 to 2015 (Kennelly et al., 2018). Moreover, scholars, practitioners, business consultants, government officials, test developers, and others around the world have followed and used Holland's work. This chapter will explore many of the applications, relationships, and instances of how Holland's theory has been discussed and applied.

Holland's Theory and Personality

One of the most informative, yet humorous, essays on the characteristics of types is found in a satirical article by John Hollifield (1971) in the *Personnel and Guidance Journal*. The article, "An Extension of Holland's Theory to Its Unnatural Conclusion," describes a RIASEC scenario about the end of the world. Holland's War, according to Hollifield, grew out of deep

conflict among the RIASEC types and their inability to coexist in the United States (As an aside, we note that research by Carney et al. (2008) among others indicates that committed political and social Conservatives and committed Liberals may have personality traits associated with RIASEC types.). A national advertising board composed of proper proportions of the types was also part of Hollifield's scenario.

In reading the article, one can better grasp an offbeat understanding of how the types interact and the roles they play in society. How do you think the scenario plays itself out? Which type do you think remained at the end? Was it the resourceful Realistics? The creative Artistics? The helpful Socials? The dutiful Conventionals? The idealistic Investigatives? Or the competitive Enterprisings? How well do you know the types? In Hollifield's version, the E types survived the longest, but they eventually did one another in because each one wanted to be the final leader. Interestingly, Holland (1997) cited research suggesting that, other things being equal, achievement will be associated with the interest profile ESAICR, an idea that merits further contemplation.

Holland sometimes referred to his theory and the RIASEC components as a theory of personality and personality descriptors. He was curious about the overlap RIASEC had with other common personality theories. Yet, he acknowledged RIASEC's distinctness from a full conceptualization of personality. Holland referred to *interests* as an expression of personality and interest inventories as a *type* of personality inventory (Holland, 1973). One observer chided Holland to come clean and refer to RIASEC as a personality theory, but he declined that invitation. Given his focus on career interventions and his reservations about counselors making claims about personality as the result of a person taking an interest inventory, he preferred to focus on interests rather than personality.

Holland was certainly not the first to find the links between personality and interest intriguing, as it had been under discussion and research for over 70 years (Hogan & Blake, 1999). Scholars had long referred to interests as an expression of basic personality, which has been said in relation to Holland's conceptualization of interests as well as other ideas about how interests are structured (Hogan & Sherman, 2020). Today, RIASEC and Holland's theory are most commonly perceived and used as a theory specific to work interests rather than general personality (Hogan & Blake, 1999). Yet, the links to personality are strong and important to explore as one's personality has implications for their vocational interests and the occupations they pursue.

Hogan and Blake (1999) indicated that personality inventories reflect how a person is seen by others (aka, their reputation), while interest inventories reflect their internal identities. Hogan and Blake (1996) succinctly explained this relationship by saying, "Personality measures ask about typical responses in various situations, but interest measures ask about preferred activities, roles, and types of people. In doing so, they allow people to describe their preferred roles that constitute their ideal self-images. Thus, interest inventories get much closer to the actual content of a person's self-concept and more directly reflect the image that they would like to be credited with" (p. 95).

The Big Five

One popular personality categorization is commonly referred to as the Big Five or the Five Factor Model (Digman, 1990). The Big Five are composed of personality components Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. The Big Five have been largely popularized and operationalized through assessments developed by Costa and

McCrae (1992). It is important to know the kinds of behaviors, traits, and tendencies associated with people that are typical of these Big Five personality factors (McCrae & John, 1992).

Openness is associated with being imaginative, insightful, curious, and having a wide range of interests.

Conscientious is typified by those that are organized, dependable, inflexible, and competent.

Extroversion can be defined as those that are talkative, outgoing, attention-seeking, warm, dominant, and assertive.

Agreeableness typically involves being friendly, trusting, generous, tender-minded and conflict averse.

Neuroticism is often referred to as the opposite of emotional stability and is associated with being moody, self-critical, tense, touchy, and anxious.

Attention has been given to the overlap and integration of the RIASEC and Big Five theories. Holland conducted some research with two colleagues at Johns Hopkins University, Costa and McCrae, exploring overlaps in the RIASEC and the Big Five (Costa et al., 1984). Mount and colleagues (2005) refer to this area of research as the overlap between the Big Five and the Big Six with the Big Six being a reference to RIASEC. Costa et al. (1984) discussed the distinct yet overlapping nature of vocational interests and personality. The authors acknowledged that Holland's theory is a personality-based conceptualization of vocational interests and that personality is likely a broader construct than what is represented in RIASEC. Several overlaps between RIASEC and the Big Five were found in this initial research highlighting the relationship yet distinctness of these theories.

Subsequent research has continued to find that Holland's RIASEC theory and the Big Five are related in important ways. Across studies, the most robust and common correlation found is probably among Extroversion and Enterprising. Openness to Experience is also fairly strongly related to the Artistic type. Additionally, research commonly shows that Agreeableness and Extroversion are related to the Social type, and Openness to Experience to the Investigative type (Barrick et al., 2003; Larson et al., 2002). Research has found other important associations such as Artistic types scoring high in Neuroticism (Armstrong et al., 2008), but these findings have been less consistent.

Some of these common but less consistent findings have been attributed to possible underlying facets within the RIASEC types where certain aspects of one RIASEC type may correlate with certain personality traits (Wille et al., 2015). For example, individuals in the Realistic fields are often considered to be less neurotic but also less agreeable than others. Yet, Wille and colleagues found that this seems to only hold true for Realistic individuals with a particular focus on the mechanical/construction-oriented aspect of Realistic interests. This finding contributes to the idea that there may be some important nuances within the RIASEC areas that even the secondary constructs would not necessarily reveal.

Others have also explored how more specific facets of personality may better relate to the RIASEC areas. For example, both the Social and Enterprising aspects of Holland's theory are empirically related to Extroversion. Research suggests that Warmth, a facet of Extroversion, may be what causes the *S* or Social interest area to have a relationship with Extroversion. Enterprising may be most highly related to the Gregariousness and Assertiveness features of Extroversion (Larson & Borgen, 2002). This indicates very different reasons why Extroversion is related to Social and Enterprising interests. Pursuing interests in the Social or Enterprising areas may

require some extroversion, but perhaps different kinds or aspects of extroversion will lead to success in these areas.

Another interesting example comes to us from research by Sullivan and Hansen (2004) who looked deeper into the correlation between the Investigative type and Openness to Experiences. Their findings indicated that Investigative interests are mostly related to being open to *ideas* rather than experiences in general. In fact, they found that those with Investigative interests are likely to be closed off to feelings. It can be misleading to indicate that someone with Investigative interests are generally "open" people as they seem to be open mostly to exploring new ideas.

Mount et al. (2005) showed the importance of considering personality and interests when making decisions about individuals' lives and organizations. Mount and colleagues demonstrated the complex and interwoven relationship among interests and personality. Their work highlights how personality helps define one's motivations in environments. For example, the sociability and working with things or ideas concepts are highlighted in their findings that show Realistic and Investigative types prefer to work alone creating things or solving problems. The Social and Enterprising types prefer to be with people. Yet, the motivational source for Social and Enterprising types for being with people seems to be different and explained through their personality patterns. The Enterprising types likely prefer to be in those environments with people to achieve their goals, attain status, and be dominant. However, these issues of goal and status attainment do not seem to be relevant to the Social types. Social types' motivation seems to truly be about just being with people. These examples from research highlight the importance of gaining insight into the nuances of interests *and* personality to find the optimal fit with environments like work, school, and social groups.

Understanding the RIASEC-Personality Intersection

Why do these research findings and correlations between interests and personality matter? Ackerman and Heggestad (1997) suggested that interests are why we are motivated to do something, but personality plays a role in how successful we are in what we do. The work of Hoff et al. (2020) highlighted that interests and personality likely develop progressively at about the same rate throughout life. As personality changes, interests tend to change in expected directions and vice versa. Some interest and personality traits may work in harmony, leading to an interesting and successful career pursuit. Other combinations of interests and personality may conflict, leading to an unsatisfying and frustrating career path unless the conflict is better understood. An example might be the relationship between Enterprising interest (i.e., working with people by persuading and managing) and Extroversion. Let's say one is interested in selling a particular product or persuading people with their political views. Are they extroverted enough to succeed in meeting those goals? If they get worn out by talking to people all day, they may not get very far selling the product or pushing a political platform to people. Perhaps someone with Enterprising interests and introverted tendencies needs to sell their products online rather than in a brick-and-mortar store front. The politically-minded introvert probably needs a behind-the-scenes role, rather than a candidate or campaigner position, to pursue their agenda.

Maybe the aspiring salesperson's conflict is even deeper in their personality. Conceivably, their dissatisfaction with selling their product is due to the nature of their Extroversion. Perhaps they are strong in the Warmth aspect of Extroversion and low in the Assertiveness facet. They could be extroverted but in the wrong way to be a salesperson. The high-warmth, low-assertiveness salesperson may feel guilty about pressuring someone with limited income to buy a product. Perhaps this person needs to find a career path in which they get to interact with people

but in more of a helping way than a persuading way (aka, Social vs. Enterprising environment). In other words, understanding broad personality in conjunction with interests can be beneficial (Sullivan & Hansen, 2004), relieve a great deal of frustration, and enhance one's success (Hogan & Holland, 2003).

These linkages between interests and personality not only help us understand ourselves and clarify our personal goals, but help us understand those we work with, hire, or assist in their career development. This reminds us of the situation with Josh, a human resource executive who moved from an HR office in a medical sales company to an HR office with an international pulp-mill company. Josh quickly found that his interactions with the pulp-mill employees were quite different than his work with the medical sales professionals. Actually, Josh dealt with the HR needs of the executives and engineers in the pulp-mill, those that made as much money and had more education than the medical salespeople he worked with before. The difference was interests and personality. The engineers at the pulp-mill were mostly Investigative and Realistic types and Introversion is associated with R and I types; moreover, depending on the person, these types may have a conservative and traditional view of the world. The successful medical sales employees were all strong Enterprising types and extroverted.

This big difference in interests and personality among these groups required Josh to change the way he interacted with employees. The engineers did not want to spend time socializing with Josh before they got to business. Josh found he needed to be much more reserved and efficient in his interactions with the engineers. Josh also found the engineers to be unwilling to discuss any personal conflicts with co-workers or consider how those conflicts might contribute to problems at work. (Remember Sullivan and Hansen's (2004) findings about how Investigative types do not want to deal with feelings!) This is a great example of not just

personality-interest interactions but also the power of work environments. Josh had a similar set of expectations and tasks in his new job at the pulp-mill company but it was actually a very different job due to the people in that environment.

Is it possible that it is *more* important to understand our interests than our general personality? Some recent research points to the advantage of considering interests in addition to or perhaps instead of personality. When studying over 3,000 German individuals over a 10-year time span, Stoll and colleagues (2016) found that interest factors predicted some important things about work (i.e., employment, income) and relationships (i.e., getting married, having children) over what Big Five personality factors could predict.

Armstrong et al. (2008) proposed the RIASEC interest structure as a way of organizing a wide range of personal or individual factors (e.g., personality, skills, intelligence). We can summarize their work by reporting that their findings generally supported the idea that much of the information critical to understanding ourselves and the world-of-work can be organized through the RIASEC paradigm. Their findings supported the information depicted in the RIASEC hexagon (Figure 1.1), including a greater tendency to conform associated with Conventional and less conformity among the Artistic area (Hogan & Blake, 1996). Their work highlighted the sociability inherent in the Social and Enterprising areas, as well as the complexity and intense skill needs associated with the Investigative areas.

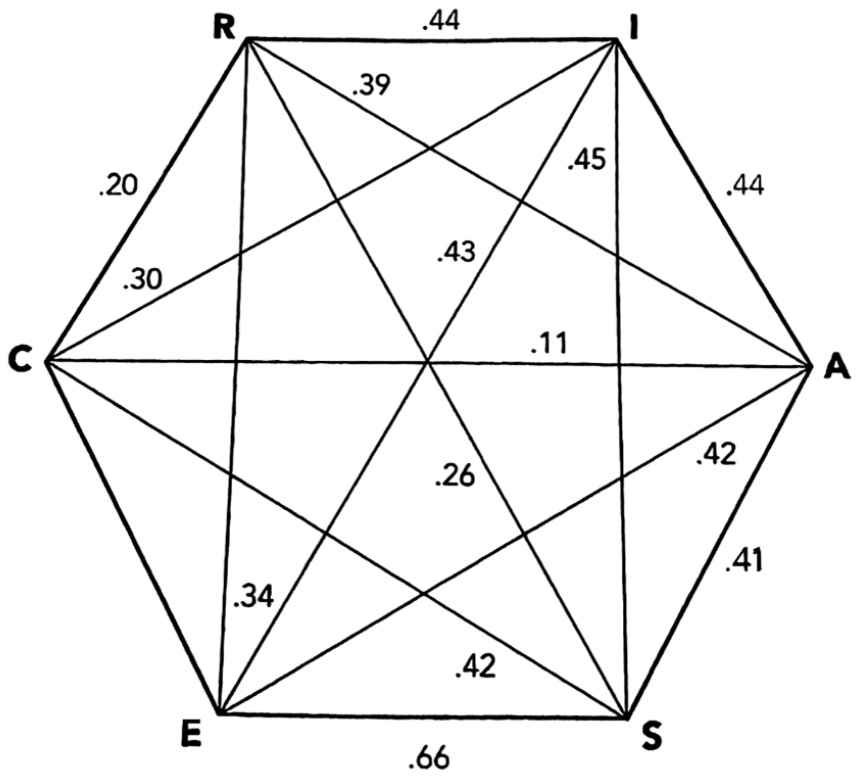
Secondary Constructs

The simplicity of Holland's theory is refreshing, and the potential to use the theory's more complex concepts is powerful. Holland himself squeezed RIASEC theory a little and described some additional concepts to express the complexity and uniqueness of someone's interests. These are often referred to as secondary constructs, diagnostic signs, secondary

assumptions, or personality patterns and include the concepts of *consistency, differentiation, congruence*, and *profile elevation* (Bullock & Reardon, 2008; Holland, 1997; Reardon & Lenz, 2015). We refer to them as secondary constructs here. Secondary constructs serve as a way to better formulate the implications of a person's very particular interest patterns. It is important to recognize that knowing an individual's Holland Code, the dominant areas of personality and interest, is only part of understanding their interest patterns. Two people with the same Holland Code can actually have very different personality patterns, interests, and resulting preferences. These secondary constructs provide us with a way of understanding those possible differences, especially among those with similar Holland Codes.

Figure 3.1, like Figure 1.1, shows the RIASEC types located on the hexagon figure. However, Figure 3.1 also shows the intercorrelations or relationships of the six types on the figure. For example, the numbers are larger for types that are adjacent on the figure, e.g., E-S, because they have more in common and are in a closer relationship psychologically to one another. In contrast, the numbers for types that appear alternate on the hexagon are a little smaller because these types have less in common, e.g., R-A, R-E, and the types that are opposite on the hexagon have the least in common and have the smallest numbers, e.g., C-A. The average correlation is 45.3 for the types adjacent on the hexagon, and it is 26.7 for those opposite on the hexagon and 36.7 for those in alternating places. Understanding these relationships among the six types as shown on the hexagon is important in more fully understanding the secondary constructs in RIASEC theory described below.

Figure 3.1. RIASEC Hexagon Showing Correlations (Relationships) among Types



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Consistency refers to how similar the elements of one's RIASEC personality profile or Holland Code may be, as certain RIASEC types have more in common than others. For instance, if a Holland Code includes both Social and Enterprising interests, a person has some common elements and likely wants to be around and work with people. This would be considered a highly consistent code or personality profile. If a Holland Code consists of Social and Realistic interests, that code is inconsistent. Given the opposing nature of some key elements of the Social and Realistic personality interests, a person may struggle to satisfy both wanting to work with people and work with things (although options do exist, e.g., athletic trainer). Review Figure 3.1

to see that the Social and Enterprising types are next to one another on the hexagon while the Social and Realistic types are opposite one another. The hexagon graphically reminds us of this component of the theory and thus helps us to more fully understand a personality or interest profile. Through the years, Holland and other researchers noted some difficulty with finding strong support for the predictability of consistency. Yet, recent research supports the relationship of consistency with job stability and satisfaction (Tracey et al., 2014) and verifies the applicability of consistency in our understanding of interests.

Differentiation refers to the distinctness of a person's interests. Two individuals may have the same basic RIASEC interest pattern. Let's say we have two people in front of us with an Investigative-Realistic-Artistic (IRA) Holland Code. One of those people may have nearly the same level of interest in all three of those areas, meaning their interests are not very distinct or undifferentiated. The other person may have an extremely high level of interest in Investigative and actually very little interest indicated in the other two areas. The second person's personality profile or Holland Code would be highly differentiated in that their interests could be largely defined within the Investigative arena. Research has supported links between being highly differentiated and being clearer in one's goals, having less difficulty in making career decisions, and being satisfied and stable in one's work (Im, 2011; Johnson et al., 2014; Tracey et al., 2014).

Congruence refers to the relationship between the code of a person and of an environment. More specifically, congruence helps to explain the degree to which a person's Holland Code and their work or field of study match. For example, if one has mostly Investigative interests and works as a research scientist, a largely Investigative job, they can be considered highly congruent with their environment. However, if one has interests mainly in the Artistic area and is working as an accountant, a largely Conventional job, they are considered to

be highly incongruent with their environment. Again, review Figure 3.1 to see the relative locations of the types mentioned here. Figure 3.1 shows us that the Artistic and Conventional areas are very different, as they appear opposite one another on the hexagon and have a low numerical correlation. Knowing this helps us understand how poorly the Artistic person may feel they fit with their work as an accountant and how dissatisfied a boss may be with this person's performance as an accountant—most people don't want a creative accountant.

There are several possible implications associated with environmental congruence. Persons may find themselves in places or environments where they did not feel that they fit in very well. Consider how that might have impacted their thoughts, behavior, and interest in returning to that place or situation. We typically seek out congruent environments that allow us to fully be ourselves and be with people we appreciate and appreciate us.

Congruence has received more research attention than all of the other secondary constructs, although the accurate measurement of congruence is considered to be fraught with problems (Arnold, 2004). Even so, there has been some recent research showing the importance of congruence (Harris & Rottinghaus, 2017; Nye et al., 2017) that is discussed more fully in Chapter 5. This research tells us we are more likely to be happy and perform well in our jobs if the job fits with our RIASEC-based interests. Therefore, there is reason for an individual to know their RIASEC Code if they want to be happier in their work and all the places where they spend time.

Profile Elevation is a secondary construct that Holland did not initially elevate to the significance of the other signs. However, he spoke to profile elevation's importance several times (Fuller et al., 1999; Holland, 1997; Holland et al., 1994). This secondary construct is becoming more common to consider when understanding an individual's personality or interests (Chason et

al., 2013). Profile elevation refers to the total amount of like or yes responses across all RIASEC categories. For example, some people indicate very little overall interest in hobbies, jobs, fields of study, etc., and others seem interested in almost everything. There could be multiple reasons why someone has a low-profile elevation score and few varied interests. They could have narrowed their interests so completely that they only indicate interest in one or very few RIASEC areas. This low-profile elevation could be highly adaptive for someone that is completely decided about what they enjoy or what work they care to pursue.

Low profile elevation could also be an indication of some larger problematic issues. One key symptom of depression is lack of interest in previously enjoyed activities (American Psychiatric Association, 2022). Someone is unlikely to indicate high interest across RIASEC categories if they are dissatisfied with life in general. Therefore, we might find someone experiencing depression to have low profile elevation (Fuller et al., 1999). Seeking help for the depression will be the first step in making any progress in career, education, leisure, or relationship choices.

High profile elevation could indicate some important issues to consider as well. High profile elevation could result from immature interests where an individual knows so little about everything that it all sounds good. Of course, an individual with many interests and talents coupled with abundant energy might engage in a variety of activities and work roles. As stated earlier, John Holland was interested in and pursued activities in almost all RIASEC areas (Weinrach, 1996). Holland commented that elevation across all RIASEC areas could either indicate a wide variety of interests or a great deal of confusion. Research has supported the relationship between profile elevation, extraversion, and openness to ideas (Bullock & Reardon, 2008; Edralin, 2019). These findings indicate that a person with high profile elevation is likely to

be engaging and open to exploring many kinds of interests; however, these same people could have difficulty deciding on one option to pursue.

RIASEC Resources

Information about the RIASEC paradigm and related products regarding interests, occupations, education, and other career information is pervasive. One can find RIASEC almost anywhere! For example, Holland's publisher, Psychological Assessment Resources (PAR), provides links to an extensive bibliography (https://www.zotero.org/groups/4534922/self-directed_search) through Zotero (Zotero | Groups > Self-Directed Search) which is searchable using key words, e.g., women, country, elementary.

Students, job hunters, and others making career or life decisions often seek more information about their RIASEC interests. They are often intrigued by how they can access information relevant to their interests on free government websites. For example, O*NET, accessed at https://www.onetonline.org/, is a website created and regularly updated by the US Department of Labor. It serves as a hub for government-based career exploration and job search tools and includes over 1,016 occupations in August 2023. One component of the site allows an individual to learn more about occupations based on their RIASEC code, e.g., Interest Profiler. On the home page, individuals can select *Interests* under the *Advanced Search* option, and this will take them to a page where the RIASEC areas are defined.

For example, if someone indicates that they most relate to the Investigative area and they click on Investigative, the site will take them to a searchable page with Investigative listed as their Holland area of interest. All occupations included in O*NET that are coded as Investigative will appear. An individual can further limit the occupations listed by entering the second and third letters of a Holland code or searching for occupations associated with any 1, 2, or 3 letter

Holland code combination. Each occupation listed is clickable and will lead to detailed information (e.g., work tasks, associated values, education needed, salary estimates) on the occupation.

We should note here that the Department of Labor used RIASEC theory to do this and Holland, himself, was not directly involved in this work. The Department could do this because a theory cannot be protected through copyright or trademark in the same way as tests, inventories, or other products.

In addition to RIASEC theory, Holland also created standardized and validated interest inventories and other assessments to help assess an individual's RIASEC code, and these are available from his publisher for a fee (https://www.parinc.com/Products/CAREER-DEVELOPMENT). These include the Vocational Preference Inventory (VPI) and the Self-Directed Search (SDS; Holland & Messer, 2015; https://www.parinc.com/Products/Pkey/506; https://www.parinc.com/Portals/0/Product/UploadFiles/Fact%20Sheet%20SDS_2017A.pdf).

In addition, there are many other inventories that use the RIASEC paradigm in one form or another. The Strong Interest Inventory also integrates the RIASEC components into the assessment report. The free interest inventory on O*NET mentioned earlier (Interest Profiler) also produces RIASEC-based results. Honestly, it is difficult to find a career interest inventory that does *not* use Holland's theory in reporting the assessment results. *However, we should note that not all these career interest inventories produce the same results in terms of occupations or fields of study. In other words, the instruments are not equivalent. We provide more information about formal interest inventories and other career-relevant assessments in Chapter 5.*

The Essence of RIASEC

We explored some facets of Holland's theory and its applications in this chapter and identified some resources. But remember that Holland (1997) wanted his theory to be accessible to anyone and for its simplicity to be appreciated. Rayman and Atanasoff (1999) touted the theory's simplicity as a main hallmark that leads to its usability and proliferation. While we can gain much from the depth of the theory and the complexities of the associated research, the simplicity of the theory is key in the RIASEC model's power. The theory is used worldwide and, as noted previously, has been the subject of over 2,200 research studies.

Nevertheless, Holland (1997) noted that, "The theory's origins were in career assistance, its applicability is best understood in that area" (p. 217). Holland was trained in a world based on the idea that to receive assistance with your career or life decisions an individual must have an appointment, see a professional, and wait weeks for the test results to return and be interpreted. Holland challenged this practice believing that many individuals can receive the career and life planning assistance they need through a variety of means, including self-help and possibly through reading this book.

Summary

This chapter "squeezed" Holland's RIASEC theory by including information about the life and personality of this influential theorist, as well as the basic assumptions covered in Chapter 2 of this popular theory. It then shifted to an exploration of RIASEC types in relation to other personality paradigms, including the Big Five. This chapter introduced us to how the hexagon graphically demonstrates several components of the larger theory, including the secondary constructs. It described how the secondary constructs of the theory, e.g., consistency,

differentiation, congruence, and profile elevation, are useful in developing a more complete understanding of the RIASEC typology in practice.

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CHAPTER 4

HOLLAND'S PARADIGM IN EDUCATION AND EMPLOYMENT

Holland's RIASEC theory is about matching persons and environments, and this chapter focuses on environments. It is necessary to do this because psychologists often focus primarily on the personality dimension of P-E fit. This chapter introduces new ideas relating to RIASEC theory, especially on the environmental side. After a brief focus on the environmental aspects of Holland's theory, this chapter moves to a review of how the educational environment can be analyzed using RIASEC ideas. Next, the chapter reviews RIASEC theory and employment, including occupations used to describe the labor market and income related to RIASEC occupations.

The Environmental Side of RIASEC

Kang and Gottfredson (2015b) reminded us that we often rely on only one leg of Holland's theory. We typically focus on our personality and RIASEC interests while ignoring the RIASEC implications for the environments in which we operate. Holland outlined a theory with

dual taxonomies for person and environment. We rob it of its power if we ignore the environmental side.

Most individuals that have written about and conducted research relevant to Holland's theory have focused on the personality aspect of his theory or how RIASEC applies to people. However, Holland focused equally on the environmental side of the theory and the importance of the interaction between people and their environments. Kang and Gottfredson (2015a) provided an overview of environmental theories with relevance to career development. In their account of Holland's theory, they described how the theory accounts for the development of personality and environments through gradual shaping. This shaping begins in childhood as individuals are rewarded for certain activities and interests and not for others. This leads to a development of differentiated interests and competencies within our culture that resemble the RIASEC system.

An important finding related to the utility of the RIASEC schema was reported by Tracey and Darcy (2002). They found that college students without an *intuitive* RIASEC schema for organizing information about interests and occupations experienced greater career indecision. This finding suggests that the RIASEC hexagon may have a normative benefit regarding the classification of occupations and fields of study. There is increasing evidence that a RIASEC cognitive structure is associated with positive career decision variables (Tracey, 2008). Persons adhering to this structure had stronger career certainty, interest-occupation congruence, and greater career decision-making self-efficacy at the beginning of a career course than those not using the RIASEC structure. Moreover, teaching this structure in a career course led to increased certainty, congruence, and self-efficacy at the end of the course for those adhering to the model. This finding of adherence has implications for parenting children regarding educational and career decisions that are discussed in Chapter 6.

The work environments we inhabit are partially defined by institutional demands such as the products they produce or job descriptions of employees. Yet, Holland's theory additionally asserts that people working in the environment also largely influence what an environment is like. In other words, people make the place—workers make the workplace. Both the person and environment side are gradually shaped into their prevailing RIASEC type through these social and behavioral forces or factors. Workers are shaping the environment, and the environment is shaping the workers all at the same time.

We also limit the theory when we only consider paid work environments in decision-making. Kang and Gottfredson (2015b) described the ways in which we can determine RIASEC codes for all influential environments, starting from childhood. Research supports that our past environments can predict our satisfaction in present and future environments (Gottfredson, 1977; Nafzinger et al., 1974). Wille and De Fruyt's (2014) study of college graduates over 15 years supports the idea that we are also gradually shaped by our interpersonal environments. They found we are likely to become more RIASEC congruent with the places we work over time. Knowing more about the past from a RIASEC perspective is important in present and future satisfaction and success.

A history of environmental influences is illuminating. Consider the skills, interests, and values parents rewarded a child for demonstrating. Were parents most pleased when the child helped someone (Social), was creative (Artistic), or kept an organized bedroom (Conventional)? Did the parents introduce the child to new interest areas such as gardening (Realistic)? In middle school did a teacher give the child logic problems to solve in free time (Investigative)? Holland's (1962) research even shows us that the famous people an individual may desire to emulate are likely related to a RIASEC code. Consider an individual's favorite classes moving into high

school and college. Think about a person's work history and how those jobs might be classified by RIASEC codes.

All of this is predictive of how satisfied an individual might be in their current environment and where they might move in the future. In other words, if a person has always enjoyed and been involved in Social and Artistic environments, it is unlikely they will be satisfied in the typical Realistic and Investigative environment without a good deal of change or compromise. Every environment an individual may have occupied, even those involving fantasies about the famous lives of others, impacts the way RIASEC interests develop and the environments which individuals will continue to occupy or avoid.

RIASEC in the College Environment

Holland's theory was born in the higher education environment. Higher education (i.e., postsecondary schools, colleges, universities) was the first environment where Holland tested his theory before moving on to employment and other settings. Educational environments have been coded using RIASEC much like occupations have been given a Holland code (Holland & Messer, 2013). Holland's theory is filled with information to help individuals choose and succeed in an educational environment.

Holland (1997) noted that RIASEC theory suggested that types "search" for congenial environments, and research has supported the idea that college students search for such situations. Holland and Nichols (1964) found that students leave fields where they lack interests and seek fields for which they possess interests and aptitudes. In another study, Holland (1962) found that students tend to be attracted to students like themselves, i.e., same field of study. Finally, Kunce and Kappes (1976) found that college men who preferred structured

environments resembled the Realistic and Conventional types more and the Artistic and Social types less.

RIASEC and Academic Disciplines

John Smart (Smart et al., 2000) and his colleagues were diligent in assuring that Holland's theory was understood within college environments and they published a score of papers on this topic. Smart pursued the idea that workers make the workplace also applies to the college environment. In college, the faculty make the department, major, field of study, or class. Faculty or college professors require, reinforce, and reward abilities and interests of students majoring in their area in a pattern that is consistent with Holland's theory (Smart et al., 2000). For example, majors that fall in the Investigative area such as chemistry are likely to socialize students consistent with the Investigative traits outlined in Table 4.1. Investigative faculty members will require students to complete math and science problems and to be precise in their measurement of important variables. They will reward a rational approach to problem solving and a proclivity to be curious.

In fact, Smart and colleagues found that the Investigative and Artistic areas were the strongest socializers of students in an educational environment while the Social and Enterprising college environments were much less strict socializers. This suggests that there is likely more tolerance and room for differences in personality patterns in majors that fall into the Social and Enterprising area. This may be important for some students in choosing a college major. Surviving in the Investigative and Artistic majors may be more about matching successfully than in other areas.

Table 4.1. Summary of Holland Types Related to Major Fields

Type	Examples of Fields/Majors	Typical Traits
Realistic	computer engineering, forestry, surveying, poultry science, mining technology, computer installation, heating/AC technician, animal training, pharmacy technician, massage, meat cutter, carpentry, turf management, furniture design	mechanical and athletic abilities, likes to work outdoors and with tools and machines; might be described as conforming, frank, hardheaded, honest, humble, materialistic, natural, normal, persistent, practical, shy, thrifty
Investigative	biology, chemistry, physics, geology, anthropology, laboratory assistant, medical technician, social psychology, computer science, pharmacy, criminology, geography, general studies, liberal arts, psychology	math and science abilities, likes to work alone and to solve problems; might be described as analytical, complex, critical, curious, independent, intellectual, introverted, pessimistic, precise, rational
Artistic	composer, music, stage director, dance, interior decoration, acting, writing, drawing, languages, painting, speech, philosophy, comparative literature, industrial design, landscape architecture, historic preservation, housing studies, journalism	artistic skills, enjoys creating original work, has a good imagination; may be described as complicated, disorderly, emotional, idealistic, imaginative, impulsive, independent, introspective, nonconforming, original
Social	education, speech therapy, counseling, clinical psychology, nursing, dental hygiene, sports medicine, ministry/theology, music therapy, special education, home health, food and nutrition	likes to help, teach, and counsel people; may be described as warm, cooperative, friendly, generous, helpful, idealistic, kind, responsible, sympathetic, tactful, understanding
Enterprising	marketing, television production, business, sales, hospitality management, sports administration, urban planning, acting/directing, advertising, entrepreneurship, educational administration, financial planning, pre-law, insurance, political science, real estate	leadership and public speaking abilities, is interested in money and politics, likes to influence people; described as acquisitive, agreeable, ambitious, attention getting, domineering, energetic, extroverted, impulsive, optimistic, self-confident, sociable
Conventional	bookkeeping, accounting, office management, court reporting, desktop publishing, medical laboratory assisting, computer operator, hematology technology, business communications	clerical and math abilities, likes to work indoors and to organize things; described as conforming, careful, efficient, obedient, orderly, persistent, practical, thrifty, unimaginative

Note. From "Revitalizing Educational Counseling: How Career Theory Can Inform a Forgotten Practice," by R. C. Reardon & S. C. Bertoch, 2011, *The Professional Counselor*, *1*(2), p. 112 (https://doi.org/10.15241/rcr.1.2.109).

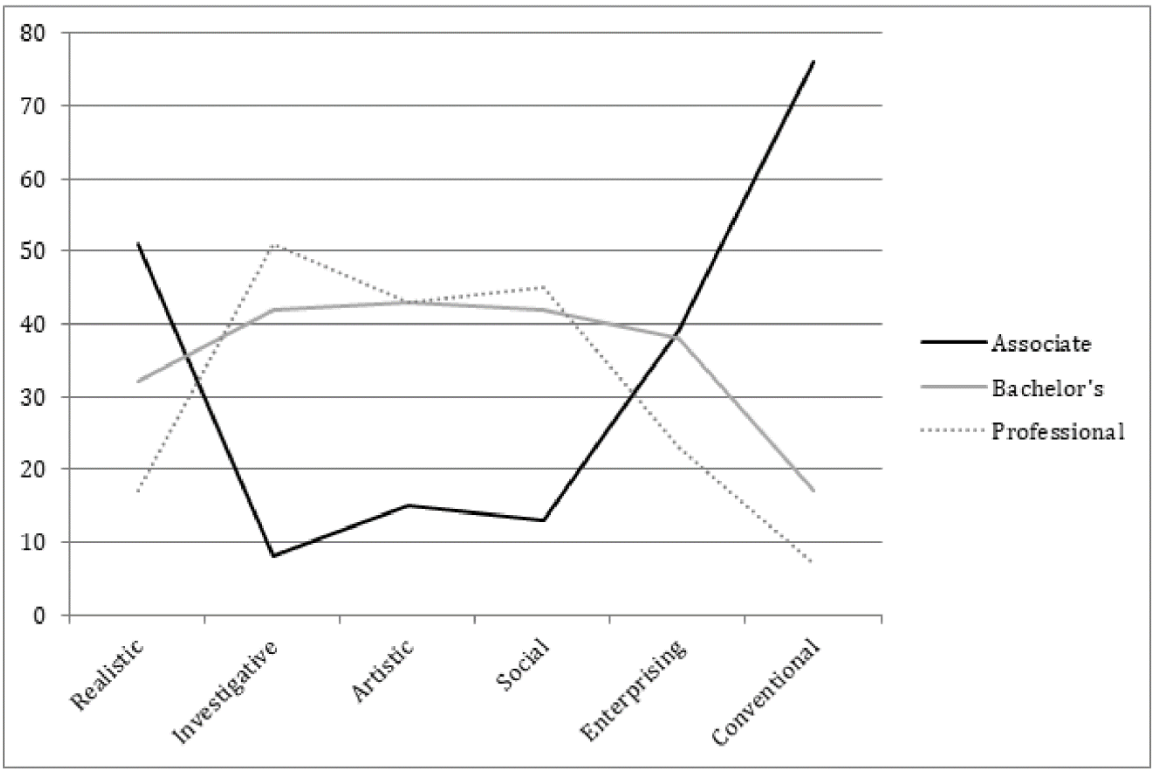
An important finding from Smart's work was the small number of college majors, faculty members, or college students that could be categorized as Realistic or Conventional. As a result, much of Smart's research focused on the IASE interest and environmental areas more frequently found in college environments. It is critical to note that one can still engage Realistic and Conventional interests in a college environment and with college majors, but those environments are not as common as other RIASEC areas.

However, Table 4.1 and Figure 4.1 reveal that there are opportunities at all educational levels in nearly all of the RIASEC areas. For instance, a computer engineering major is in the Realistic area and at least a bachelor's degree would be required to enter that field. Conventional includes the accounting major (degrees available at the bachelor's and graduate levels). Social includes dental hygiene and Investigative occupations include medical technician, which are two jobs that typically require an associate degree for entry. In other words, Holland's theory not only provides a guide to how majors align with one's interests but also if one's interests, access, time, values, and resources better align with a particular level of educational attainment.

Reardon and Bertoch (2011) used information from the *Educational Opportunities Finder* (Rosen et al., 1997) to show the distribution of three postsecondary degree levels in relation to RIASEC categories. Figure 4.1 shows how three levels of educational degrees, bachelors, graduate, and professional, appear in relation to RIASEC categories, and examples of academic fields by RIASEC area are shown in Table 4.1. Associate degrees would include those obtained from community colleges; professional degrees would include postgraduate training in law, medicine, and other fields; and bachelor's degrees would include undergraduate college or university degrees. This chart illustrates how educational degrees can vary across RIASEC fields. For example, there are many more educational opportunities at the associate degree level

(typically offered at community colleges) in the Realistic and Conventional areas than at other degree levels. Professional or graduate degrees are largely dominated by the Investigative, Artistic, and Social categories.

Figure 4.1. Percent of Three Degree Levels Obtained in Relation to RIASEC Categories



Note. From "Revitalizing Educational Counseling: How Career Theory Can Inform a Forgotten Practice," by R. C. Reardon and S. C. Bertoch, 2011, *The Professional Counselor*, *1*(2), p. 115 (https://doi.org/10.15241/rcr.1.2.109). Copyright © 2011 by National Board for Certified Counselors, Inc. and Affiliates.

Reardon and Lenz (2015) provided an example of how college majors could be categorized using RIASEC codes at one institution and how this information could be used with students choosing their major. They noted that students with Realistic or Investigative interests who wanted to major in engineering, a Realistic Investigative environment, could find themselves in an institution that does not offer engineering as a major. Similarly, majors such as

film design and occupational therapy are not offered everywhere. Plus, some important educational pursuits are not available at a typical 4-year college or university and can be best pursued at a local community college. Court reporting (CSE), drafting and design technology (IRC), and HVAC repair (RES) are wonderfully lucrative and potentially satisfying career paths, but they are not often majors at a university.

Some majors and areas of professional training, such as those in the medical field, require the selection of specialties along the educational and career path. Woods et al. (2016) supported Holland's theory, in combination with the consideration of the Big Five personality traits, as a relevant framework for selecting a specialty within one's chosen educational or career path. Certain fields such as law, psychology, medicine, and engineering have such a wide variety of specialty areas that one RIASEC profile cannot fully depict all of the options in the field. RIASEC information on a field's specialty areas would be much more informative for those seeking to specialize.

In the medical field, Woods et al. (2016) showed that junior medical doctors with higher levels of agreeableness tended to choose more Social medical specialties. Those with higher levels of neuroticism seemed to avoid those specialties requiring dominant Realistic (e.g., surgeon) and Enterprising (e.g., medical administration) tasks with the idea that the stress and personal accountability of these job roles would be overwhelming for those with a high level of neuroticism. Actually, those higher in neuroticism tended to choose specialties with Artistic aspects (e.g., Psychiatry). While this research (Woods et al., 2016) is just one example of applying Holland's theory within educational and career specialization, it is interesting to consider how the theory applies at the broad and specific levels while making an occupational

choice. If an individual is already in a chosen field, consider how different specialized options within that field vary in RIASEC patterns and how this might affect future career decisions.

Finding a RIASEC fit for interests and a college major or specialization has some important, practical implications. RIASEC fit, or congruence, between interest patterns and the college major environment selected, has been found to be related to college grades and the tendency to continue enrollment (Nye et al., 2012). In other words, finding a RIASEC congruent major may increase the chances of actually obtaining the degree and making better grades while doing it. The implications for RIASEC in an educational environment should be used and appreciated in career and life decision-making.

UMaps

The UMaps project at the University of Maryland was an elaboration on Holland's Corridor Approach to career decision-making described in Chapter 1. It is another good example of applying RIASEC theory as primary prevention in higher education (Jacoby et al., 1984). Working out of an Office of Commuter Affairs in the Division of Student Affairs, the authors reported a program to help these students become aware of and attracted to diverse campus opportunities, options, and resources related to RIASEC types. They created large posters displayed on bulletin boards that provided an overview of RIASEC theory and applications, and smaller handouts describing each of the six RIASEC interest types individually. All of these items were distributed to students, faculty and staff throughout the university.

An example of UMaps is shown here Find+Yourself.pdf (squarespace.com). [This is a large file and may load slowly.] As you can see, each of the six RIASEC UMaps had a standard layout including majors and areas of study (with office locations and phone numbers), sample career possibilities, internship and volunteer options, and student organizations and activities

related to each type. Each map also had a brief description of the RIASEC type and a brief self-assessment related to interests and skills. The UMaps included examples of personality traits (self-ratings); stereotypical descriptions of types; types assessed by inventories and scales; lists of values; examples of life goals; aptitudes and an option to indicate the area of greatest ability; and identification with historical figures, i.e., Henry Ford, Jane Addams. A sample UMap was included in Spokane and Schultheiss's (1996) chapter on Holland's theory.

Jacoby et al. (1984) reported initial evaluation efforts, formal and informal, that focused on students' awareness, use and satisfaction with UMaps. Students exposed to UMaps during orientation reacted favorably to them and felt that they were a helpful way to organize campus information. When UMaps were displayed at campus information fairs, many students were attracted by their graphic design and readily identified with one or more of the posters. The smaller UMaps became a popular decoration in student rooms.

Moreover, staff, like students, reacted to UMaps in a very positive way. Recruiters, counselors, advisors, and program staff made UMaps an integral part of their functions. One career counselor suggested the creation of an advisor's guide to using UMaps. The UMaps were also valued and used by faculty in their teaching and program activities.

Jacoby et al. (1984) noted that the conceptual foundation of UMaps based on RIASEC theory could be adapted in a variety of settings to make a large, complex environment more comprehensible and understandable. Corporations could use RIASEC-based materials to help employees find opportunities that match their interests. They concluded that as society and institutions become more complex, person–environment congruence, as outlined in Holland's RIASEC theory, can become more and more difficult to attain. Therefore, it is important that human services professionals take concrete steps to enable individuals to achieve the benefits of

congruence. The UMaps concept, because it was both grounded in developmental theory and adaptable to many practical applications, is one means available to bring about these desired outcomes.

Finally, an article by Jacoby (2024), *UMaps still help students "Find Themselves,"* includes updated information about UMaps and is located at https://career.fsu.edu/tech-center/topics/career-theory-research-and-practice/holland-riasec under the heading Holland/RIASEC Practice. It includes links to the most recent information about UMaps and the story behind the creation of this tool. We might add that UMaps are a living example of primary prevention that Holland first described in his 1968 talk about the Corridor Approach to career assistance introduced in Chapter 1.

RIASEC Game

Holland stood firmly against discarding the hexagon or modifying it in some way for the simple reason that individuals can relate to it. It provides a simple, easily understandable, yet complex means for relating personal characteristics to occupational and educational alternatives.

The RIASEC Game, another application of Holland's Corridor Approach to educational and career planning, was described by Reardon and Lenz (2015). This activity provides students in a class, workshop, or individually with an opportunity to read brief descriptions of the RIASEC types (see Figure 1.1), decide which one sounds most like them, and then rank their top three interest preferences, i.e., SEA.

At this point, the leader asks participants to go quickly to the station with their first letter in a room marked with each of the RIASEC letters. When the group leader gives a signal, all participants should go to the letter that represents their first choice; once gathered at a letter, group members should have three minutes to mingle with the other persons gathered at that

letter, exchange names, interview each other, find out about their interests and what drew them to that letter, and so forth. The exchange might feature the following questions: “Why did you select this letter?” “Was it easy to decide where to go?” “What are your hobbies?” “Where will you go next?” “What is your least preferred RIASEC letter?” This process is repeated for the second and third letters.

As the game concludes, the leader may distribute copies of *The Occupations Finder*, and/or *The Educational Opportunities Finder*, or *Leisure Activities Finder* (depending on the needs of the group) and let group members look up their three-letter code to see the related occupations, majors, or activities. Participants may share their reactions to the occupations or fields of study listed for their code. How well do these fit with the ideas that they have about options they wish to pursue?

Reardon and Lenz (2015) noted that secondary constructs important in Holland’s theory (1997), i.e., code, congruence, differentiation, coherence, consistency, profile elevation, are readily assessed in the RIASEC Game. For example, “Did you go to a letter adjacent to your first choice (consistency)?” “Did you go to a letter opposite from your first choice?” “Did you have difficulty picking a second letter (differentiation)?” Thinking about these secondary constructs may provide some insights for participants about the nature and structure of their RIASEC interests.

RIASEC and Educational Resources

Holland’s publisher, PAR, has several resources or tools that provide lists of college majors or fields of study related to RIASEC codes. These are available for a fee from the publisher at https://books.google.com/books/about/The_Educational_Opportunities_Finder_for.html?id=UWi

WGwAACAAJ. *The Educational Opportunities Finder* (EOF) was authored by Donald Rosen, Kay Holmberg, and John Holland. The current edition was first published in 1987 as the *College Majors Finder* and then revised in1994. The EOF is a comprehensive source that lists programs of study (including 3-letter Holland codes) offered at 2- and 4-year colleges and postgraduate institutions. It includes more than 758 programs coded with 6-digit ID numbers in 40 broad categories with similar characteristics. These descriptions were derived from the *Classification of Instructional Programs*, published by the U.S. Department of Education's National Center for Educational Statistics.

Using RIASEC with Elementary Students

Holland's Corridor Approach to educational and career planning has even been extended to elementary school students with remarkable success. Ed Hidalgo (2023, personal communication) was the chief innovation and engagement officer for the Cajon Valley Union School District where he focused on integrating a system-wide career development model in classrooms led by teachers. The approach received national recognition as one of the best models to begin in the early grades by developing a common language of career activated through the use of the RIASEC language. He is currently self-employed with Ed Hidalgo Consulting in San Diego, CA.

Hidalgo reported using Holland's RIASEC model in 28 schools of the Cajon Valley Union School District and in other districts in California (How RIASEC Helps Teachers Take Relationships to the Next Level | LinkedIn) (A District Wide Approach to Integrating Career Development From K to Grey | LinkedIn). These links include graphics showing how the RIASEC model was used with elementary students. Hidalgo (Vail, 2023) indicated that the RIASEC model was a district-wide pedagogical model of children and adolescent career

development known as the World of Work Initiative™ (WoW), mainly deployed by teachers in the primary grades through high school more than six years ago.

The WoW approach, which includes community partners and families, features an innovative emphasis on using Holland's RIASEC typology. The initiative is designed to holistically access students' self-awareness, explore academic and career options, and construct their unique career narratives in order to make more informed educational and career decisions. Hidalgo indicated that deploying the RIASEC model has revealed an unexpected benefit that goes beyond self-efficacy and career exploration; it has become a *common language* that helps teachers build more powerful and insightful relationships with students. Although the RIASEC paradigm may be best known for organizing careers and personal interests through assessment, Hidalgo reported that in the school districts it is the *common language* for integrating career-related learning for every child in every grade.

Hidalgo (Vail, 2023) indicated that for many working in career education, coaching, and counseling, the RIASEC model has been tethered to assessment with tools like the Strong Interest Inventory or O*Net Interest Profiler. However, the WoW intervention involves a teaching approach that involves conversations between teachers and students as an approach to improve learning starting in the early grades and later coupled with career exploration and career management. The goal is to lead every student on a better path toward gainful and purposeful career outcomes. Hidalgo reported that after he made a presentation to high school seniors, introducing them to the language of RIASEC for the first time, their reaction could be summarized in one question, "Why are we just now learning about this language?"

Perhaps the most unexpected benefit of the WoW approach is the outcomes for classroom teachers who implement it. Hidalgo reported that one teacher described a conversation with a

fourth grader who said, “I thought I was just going to be a football player, but now I’m thinking about being a geographer or engineer.” The teacher asked another student what his themes were, and he confidently said he was Conventional. He then went on to explain his Conventional theme and how he wants to be a soccer player when he grows up. What Hidalgo learned from the student’s teacher was that the student’s behaviors and engagement had completely changed after learning about his interest theme and that his teacher had developed and deployed differentiated assignments that matched his interest style.

This story illustrates how students can respond when teachers introduce an agentic learning approach using a common RIASEC language that develops higher-order cognitive and socio-emotional skills. It also develops a strong sense of self-efficacy and resilience. (The word *agentic* can described as an individual's power to control their goals, actions, and destiny. It stems from the word agency, which Webster's Dictionary defines as the capacity, condition, or state of acting or of exerting power.) The WoW outcomes do more than activate a career-related possible self because they also bring intrinsic motivators aligned with student hope and engagement. Moreover, it is another example of using the RIASEC system as primary prevention with elementary school children.

RIASEC and the Employment Environment

The RIASEC-based interaction between jobs and people is reciprocal, each influencing the other. This constant interaction creates stability within an individual’s interests and the job choices made. This considers Kang and Gottfredson’s (2015b) idea about how environments, starting in childhood, help shape an individual’s RIASEC Holland Code. Popular and social media frequently discuss the changing nature of work and how people switch careers constantly. Actually, interests fluctuate some before age 25 (Reardon & Lenz, 2015), but they are fairly

stable in how interests are expressed through jobs after that (Kang & Gottfredson, 2015b). In other words, the RIASEC code of one job is probably fairly similar to the RIASEC code of the next job.

Gottfredson (2005) discussed how occupations that existed in the development of older technologies are essentially the same occupations when the job roles are applied to the development of new technologies. For instance, electrical engineers working with electricity for solar energy today have very similar job tasks as those that produced coal powered energy yesterday. While individuals may change jobs and jobs may change, neither tend to change very much from a RIASEC perspective. In the next section, the focus shifts to learning about how to understand employment and jobs through a RIASEC lens.

Holland Codes for the Labor Market

Jobs available in the U.S. labor market can be organized by Holland codes. As mentioned in Chapter 3, O*NET, https://www.onetonline.org/, is a website created and regularly updated by the U.S. Department of Labor. One can search for occupational titles based on a Holland code and career interests. Peace and Reardon (2022) RIASEC classified the job titles respondents provided in the most recent U.S. Census to demonstrate how existing employment opportunities in the United States are distributed across the six types, as well as the income distribution reported in the census across the same six types.

Peace and Reardon (2022, 2024) defined *occupation* as a group of similar job positions found in different industries or organizations; a specialized term not used interchangeably with career, job, position, or profession. They analyzed civilian occupations and employment data collected by the U.S. Census Bureau over seven decades (1960-2020) with respect to six kinds of work (e.g., Holland's RIASEC classification). The focus was on (a) occupational titles used, (b)

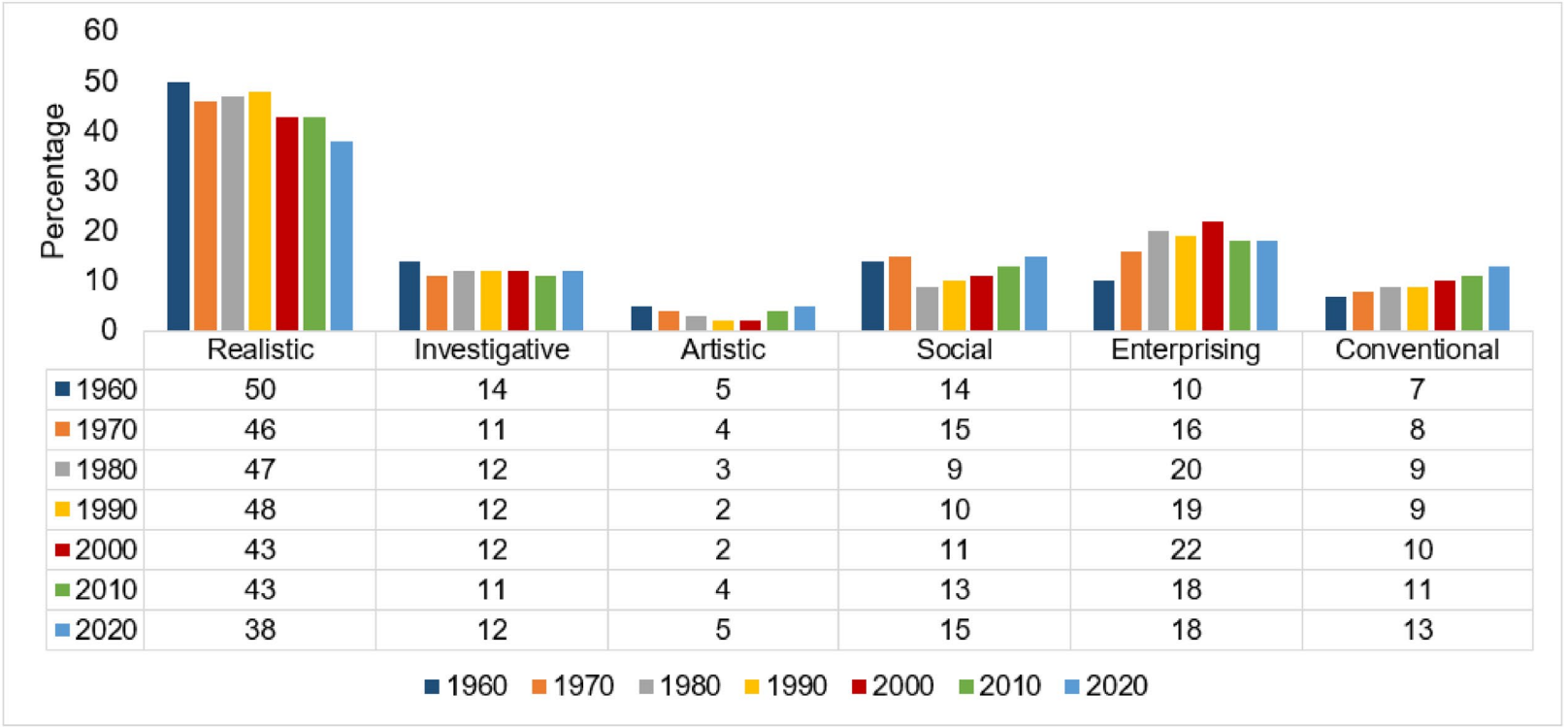
civilian employment, and (c) income. This study was one of nine published articles authored by 11 different scholars. As such, it represents a unique contribution to career development and vocational psychology literature with respect to the environmental aspects of Holland's theory. The principal findings of this study are presented graphically in terms of the three questions that guided the research.

Table 4.2 reveals that most occupational titles included in the U.S. Census from 1960 through 2020 were Realistic, and the fewest across all census years were Artistic. In other words, the language used to describe the labor market is based on occupational titles, but this may provide a flawed or incomplete way of looking at people and jobs.

Table 4.3 reports the actual number of people employed across the RIASEC areas rather than the count and categorization of occupational titles found in Table 4.2. Although slightly more people are employed in the Realistic area, it is not substantially more than in the Social, Enterprising, and Conventional areas respectively. At the same time, substantially fewer people are employed in the Investigative area and especially in the Artistic area. Said another way, there are many more Realistic job titles listed in the U.S. Census; but the number of actual people in jobs are similar across Realistic, Social, Enterprising, and Conventional areas.

Peace and Reardon (2022) used census data and examined the incomes for six different kinds of work from 1990-2020. Inspection of Table 4.4 shows the results of this analysis and also shows that the highest average salary was found among those employed in Investigative environments, and the lowest average salaries were found in Realistic and Conventional environments. This finding is consistent with the graph shown earlier in Table 4.1 revealing that associate degrees were most frequent in these two areas.

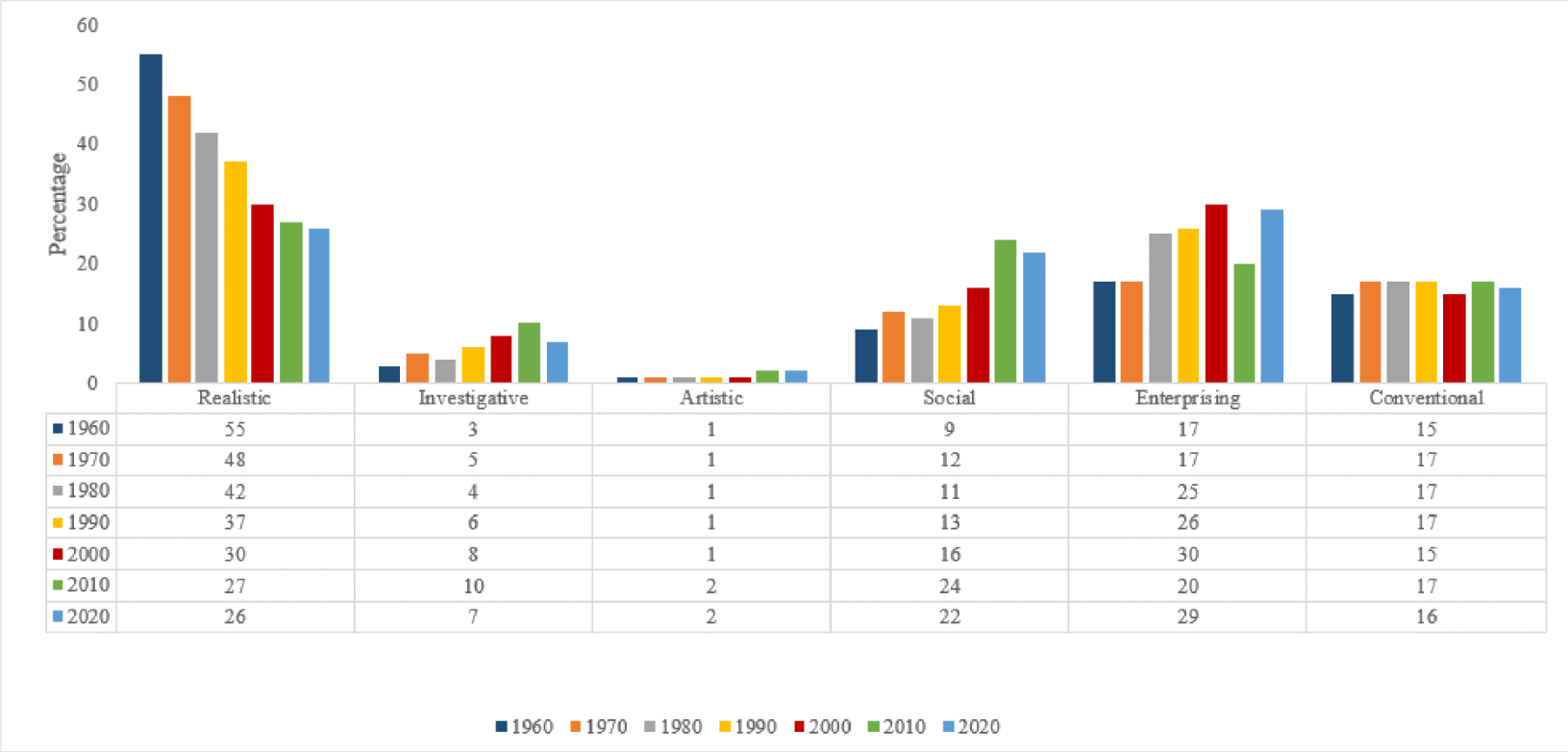
Table 4.2. Percentage of Census Occupations by Six Kinds of Work, 1960-2020



	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
1960	50	14	5	14	10	7
1970	46	11	4	15	16	8
1980	47	12	3	9	20	9
1990	48	12	2	10	19	9
2000	43	12	2	11	22	10
2010	43	11	4	13	18	11
2020	38	12	5	15	18	13

Note. From Peace, C., & Reardon, R. (2022, June 28). *A RIASEC view of employment data from the U.S. census (1960-2020)* [Paper presentation]. National Career Development Association Conference, Anaheim, CA.

Table 4.3. US Census Employment by RIASEC Code



	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
1960	55	3	1	9	17	15
1970	48	5	1	12	17	17
1980	42	4	1	11	25	17
1990	37	6	1	13	26	17
2000	30	8	1	16	30	15
2010	27	10	2	24	20	17
2020	26	7	2	22	29	16

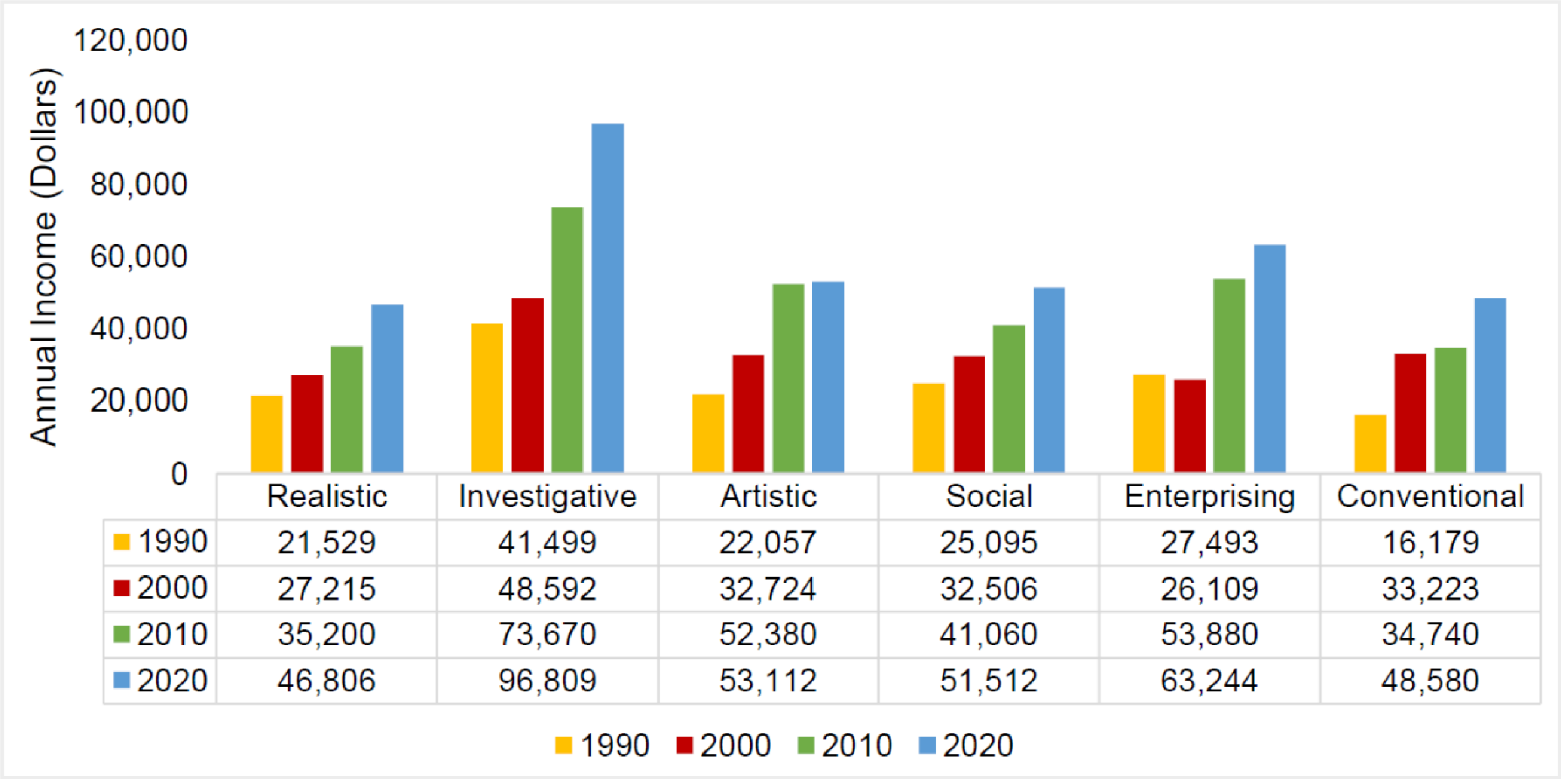
Note. From Peace, C., & Reardon, R. (2022, June 28). *A RIASEC view of employment data from the U.S. census (1960-2020)* [Paper presentation]. National Career Development Association Conference, Anaheim, CA.

These data reveal the continued discrepancy with regards to income among the Holland types across the three most recent census periods. The RIASEC profiles for highest to lowest income were **IESARC**, **ISEARC**, **IEASRC**, and **IEASCR** in 1990, 2000, 2010, and 2020, respectively. The average income over the four decades for the Investigative area was $65,142 compared to Conventional, $33,180 and Realistic, $32,620.

These findings indicate that income is not equitable across the six RIASEC areas, with the Investigative area consistently having the highest income and the Realistic and Conventional areas among the lowest from 1990 to 2020. Huang and Pearce (2013) reported that higher annual incomes in 2010 were in occupations associated with greater Investigative and Enterprising traits, and this is consistent with the findings in 2020 (see Table 4.4).

In an earlier study, Reardon et al. (2007) examined income by kinds of work and found the average income profile for six kinds of work ranging from highest to lowest was **IESARC**. In the current study of 2020 census data, the income profile was very similar, **IEASCR** with the first two letters in the same position and other letters changing one position in order. Given that the Investigative area of work requires more education and training than the other five areas, these findings from census data provide evidence that education pays. Reardon et al. (2022) reported that persons with more education are less frequently unemployed and have higher weekly earnings—more education is connected to more income.

Table 4.4. Income for Six Kinds of Work over Four Decades



	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
1990	21,529	41,499	22,057	25,095	27,493	16,179
2000	27,215	48,592	32,724	32,506	26,109	33,223
2010	35,200	73,670	52,380	41,060	53,880	34,740
2020	46,806	96,809	53,112	51,512	63,244	48,580

Note. From Peace, C., & Reardon, R. (2022, June 28). *A RIASEC view of employment data from the U.S. census (1960-2020)* [Paper presentation]. National Career Development Association Conference, Anaheim, CA.

RIASEC and Census Data

There is an important lesson demonstrated in Tables 4.2 and 4.3. The opportunity to express one's interest through paid work can be either potentiated or restricted by the opportunities in the labor market. In other words, if one is interested in the Realistic area, there appear to be ample opportunities to be paid to express that interest and work in a congruent environment. Of course, this would likely be at one of the lower pay rates in the labor market. Individuals interested in the Artistic area are less likely to get paid to express that interest and less likely to obtain paid work in an environment they find completely congruent. If one's interests are in the Investigative area, there are fewer jobs but they tend to pay well. Because of the education level necessary for most Investigative jobs, fewer people may be qualified for the jobs. Fewer qualified applicants help to lower the competition for the relatively fewer open positions. To summarize, R jobs are plentiful but don't pay as well as some others. There are many more people interested in Artistic jobs than there are paying jobs in that area. While there are relatively fewer jobs in the Investigative area, they pay well and there is likely less competition for these positions due to the education needed to qualify.

Reardon et al. (2007) used U.S. Census data and found that about 10% of people had Holland codes dominated by the Artistic area and only about 1% of people were employed in Artistic jobs in 2000. This means there may be many people with Artistic interests that will not be paid to do this work. In Chapter 5, we explain how to satisfy interests that are not utilized in one's paid work. For example, artistically interested people do not have to abandon these interests. They may not be paid to focus on art, or it may be a smaller aspect of their work such as a conservator in a museum. A museum conservator would largely be responsible for Realistic tasks like measuring and locating museum artifacts. However, they would have a large, but

secondary, Artistic component due to the artistic nature of many artifacts and the creativity used in displaying those works.

Based on U.S. Department of Labor projections from 2012 to 2022, McClain and Reardon (2014) also provided a RIASEC description of those occupational titles most likely to offer job openings. The 30 large growth occupations were dominated by the Conventional area, followed by the Social area. These data indicated that the U.S. Department of Labor projects there will be more job openings in environments or jobs dominated by the Conventional and Social areas. There are a couple of ways to integrate this information into career planning. First, one seeking to enter these types of jobs should be prepared to tailor themselves to a Conventional or Social environment. Second, if an individual desires employment in those areas with fewer job openings but higher potential pay, i.e., Investigative or Artistic, then they may need to begin to set themselves apart from other Investigative or Artistic type applicants. Taking these steps will increase the chances of being hired into one of those limited Investigative or Artistic openings.

Summary

This chapter focused on RIASEC theory and the connection of an individual's interests and opportunities for training and employment in the environment. It integrated information on how to help others use the RIASEC hexagon as a stand-alone intervention in educational and career services and it described RIASEC interventions used in colleges and elementary schools. The information in this chapter is relevant for counselors, teachers, human resource professionals, business executives, business owners, parents, or anyone seeking to engage proactively in life and career decision-making.

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CHAPTER 5

RIASEC AND ORGANIZATIONAL FIT

Now that we have examined individuals and their interests in relation to education and labor market environments, this chapter focuses on how interests connect to factors in the environment that contribute to an individual's *fit* in an organizational environment.

In introducing these ideas of "organizational fit," we share an anecdote from a former student reflecting now on his introduction to Holland's RIASEC theory in graduate school, an area of little interest to him at the time.

> I just thought I would share that, while I work as a licensed, forensic psychologist, I find myself referencing the Holland code types with relative frequency. They help to understand individual differences in a very simple and practical way. I even discussed them yesterday while interviewing a doc student for a practicum position at our hospital. Working with graduate trained individuals exposes me to a lot of multi-potentiality people, and RIASEC helps me to create a schema for how and why certain individuals develop professionally the way they do (e.g., ***E*** - the person who does private practice on

the side, ***I*** - the person who is interested in research projects, ***S*** - the person who won't stop talking and leave my office... etc.). It's been fascinating how the training in career development and school psychology has pervaded my life personally and professionally despite not formally operating in those specialties.

Philosophers, psychologists, and others have noted the importance of understanding one's self in living a good life. Holland's theory provides a pathway to explore one's self and how to use that information in relation to the external world. Clarifying how *one's fit* within the RIASEC structure can help individuals to move forward with life goals and preferences, where they might be successful and happy.

Work, an activity that produces something of value for self or others (Reardon et al., 2022, p. 6), typically has much to do with what type of life one leads outside of work (e.g., choices for relationships, housing, transportation). Understanding if one's interests fit with work can help a person understand how well they will perform in a job. Additionally, an employer's understanding of a job applicant's interests can be useful in determining if the individual will do a good job for the organization (Nye et al., 2012). Interests are important concepts to understand. They affect the life one is able to live and are integral to the success of organizations.

Sometimes, a person will say that they have trouble with understanding their interests because "My interests are always changing!" It can feel frustrating to think one cannot make a good choice about work because interests fluctuate so often that a good choice now may not be a good choice six months from now. While it is important to acknowledge that interests can change, some research has shown that interests do not typically change in a substantial way over time (Wille & De Fruyt, 2014). Given the overlap between personality and interests and how interests are likely an expression of personality, many persons are comfortable with the idea that

personality is stable and changes little over time (see Chapter 4). As we covered in Chapter 3, interests and personality typically develop at the same rate in a lifespan and in similar ways that mirror one another (Hoff et al., 2020).

Research studies have shown that in many cases, both personality and interests remain fairly constant. Much of what we attribute to constantly changing interests is really just a lack of understanding about the structure of our interests and how seemingly unrelated activities, college majors or job options, may actually fit well within the same RIASEC interest area. This is a reason for appreciating the importance of understanding how our interests fit into the RIASEC structure.

Understanding our interests from a RIASEC perspective provides the language needed to explain our goals to family, friends, work colleagues, strangers, and ourselves. As a manager, for example, conceptualizing your employees from this perspective can provide justification for hiring, firing, and making work assignments. As noted earlier in Chapter 4, this RIASEC language can also be used in teaching children in elementary school.

Penny's Story

Perhaps the story of Penny will help explain the way RIASEC can help highlight the consistency in a seemingly scattered career history. Penny breezed into a career counseling office one Friday afternoon and announced, "I have changed careers a million times and it is time for another one!" The counselor listened with interest as Penny described her career history. She said she just completed a four-year contract working for the city. She stated that her job before the city contract was with the city historic society and "that's how I got the city contract job." Before the historical society work, she explained she was a teacher at various schools. She said, "Teaching was good work when I had young kids but I never seemed to be able to grade my

papers on time. So, a few places didn't renew (Penny used air quotes when she said "renew") my contract for the next year. Before teaching I was home with my kids for a few years. Before that was my first job out of college in that fabulous art museum!"

The counselor thought, "OK, that does seem like a lot of 'career' changes," so the counselor asked Penny to tell her more about these jobs. Penny's explanation of her specific job tasks within each position is where Holland's RIASEC theory came alive! Penny majored in art history in college and got a graduate degree focused on French art. Her museum job was as a tour guide and eventually she was a curator with the museum. She left the larger city and her museum job to follow her husband's work. They soon had children, which led to her time home with her children. Even her work as a homemaker was typified by her love for art. She described writing and illustrating unique books based on each of her children's interests. She did some home renovation during this time which involved hand painting tiles that highlighted some of their family travels and her children's personalities. In her teaching jobs, she taught art history for several colleges in their hometown. It turns out that teaching about art and bringing it alive in the classroom was her gift, but the grading papers piece led to her contract not being renewed a few times.

The work with the historical society involved her interactions with homeowners that had historic homes under renovation. She would review, suggest, and approve renovations consistent with the period of the home to keep the unique look of the town's historic district. The city contract job grew out of the historical society work. The city contract involved helping with the organization and distribution of several large donations of art and funds for the revitalization of the city's downtown art scene. She had spent the last four years organizing a new downtown art museum and developing a series of artistically focused events for the city. Penny's "career"

changes were not dramatic career changes at all. While she worked in a museum, school, home, and city office they were all to some extent Artistic pursuits. It was so much easier to help Penny find her next job when she and her counselor looked together at her career path through a lens of Holland's theory with RIASEC as a guide.

The environmental aspect of Holland's theory has two main implications for employees. First, they may want to consider their interests, goals, and values in terms of RIASEC types and find jobs with those kinds of people and types already employed there. Second, employees should remember that people do have the power to effect change in their environment. If one is in a job that is not completely consistent with their RIASEC interests, they may have the power to change their specific work environment, job, or aspects of their job to be more consistent with their interests. This reflects upon Holland's statement about the variability within RIASEC types, and that there can be more variation within a RIASEC type than between RIASEC types. While RIASEC types can be a strong guiding factor, they are not a rigid classification.

RIASEC-Based Organizational Culture

RIASEC type may affect an organizational culture. Environments composed of mostly Social types are likely to adjust work hours for issues that are helpful to the workers' personal lives, such as picking up their children from school, providing eldercare, or working from home. Enterprising environments are likely to highly value financial gain and may not consider picking children up from school as central to helping the company achieve their financial goals. An individual's fit in an organization's culture often comes down to how well their RIASEC interests and values align with the environment. If pay is something highly valued, then that value is more likely to get met in the Enterprising environment. If it is essential to an individual to have more time with their family, perhaps the Social environment is a better fit for them.

An organization seeks behaviors from workers that are valued in the workplace and it then rewards employees when they perform in a way valued by the organization. The behaviors and rewards will differ based on the nature of the RIASEC environment. Therefore, it is important to know what RIASEC-based behaviors and rewards an individual may prefer before committing to a particular environment, whether a paid job or some other environment.

Tolerance for and interest in changing jobs, both within the organization and between organizations, differs across RIASEC types. In other words, certain RIASEC types are more likely to change jobs or be more likely to be tolerated in certain environments. Wille et al. (2010) hypothesized that Enterprising types are more ambitious than the other types and more likely to change jobs. This was supported in their study of Enterprising types across 15 years showing Enterprising types did change jobs (not occupational RIASEC interest areas) both within their current organization and across organizations. In contrast, Conventional types are typified by the preference for familiar, routine tasks and familiar surroundings. Conventional types changed jobs significantly less than those in other RIASEC areas. This is just one more piece of information to consider in how interests and an organizational culture may affect one's work life. If the people make the place, environments comprised of Enterprising types may be more supportive of change. Conventional environments may more highly value those employees that are loyal. Employees can consider how their preferences for change may be affected by the environment in which they operate.

Work Performance and RIASEC Fit

Nye et al. (2017) examined work performance as an important outcome related to RIASEC person and job fit or congruence. They analyzed the findings of 92 research studies that surveyed over 30,000 people. This research provided clarity and comprehensiveness to what was

known about congruence or fit. They found that congruence is indeed related to performance on the job including how a worker performs tasks, how they treat others at work, persistence on the job, and training performance. Also, Harris and Rottinghaus (2017) broadened the definition of satisfaction to look at overall life satisfaction or well-being rather than just satisfaction at work. They found that those in more congruent work tended to report a greater sense of overall well-being in their lives and those in incongruent work reported a significantly lower sense of life well-being. In other words, choosing a job that fits with one's RIASEC interests can increase the likelihood of good performance, good treatment of co-workers, continued employment, and satisfaction with life in and outside of paid work. These are important reasons for finding a RIASEC fit in terms of interests and organizational culture, person, and environment.

Using RIASEC in Advising, Counseling, and Managing

Given the review of environment fit in education, organizations, and employment, we focus in this section on some of the ways this RIASEC information can be used by advising and counseling practitioners in working with students, or managers in working with employees in their organizations. At this point, we reiterate that RIASEC theory is not protected, copyrighted, or trademarked and we have demonstrated how it can be used freely and creatively for a variety of purposes. For example, Kronholz (2015) reported a successful case study involving a client with a high level of readiness for career decision-making and a good understanding of Holland's RIASEC hexagon which enabled them to engage in self-help career advising (Tracey, 2008). However, tests and other assessments developed according to the standards for the use and development of psychological tests are protected and almost always available for a fee and have restrictions on the use of instruments by persons without training. In accordance with the *Standards for Educational and Psychological Testing* (Joint Committee, 2014) and PAR's

competency-based qualification guidelines, the assessments reviewed here report the qualification required.

Counseling with RIASEC Tools

Holland created more than 10 assessment tools to measure RIASEC types in individuals and environments. Most of these are available from his publisher, Psychological Assessment Resources (PAR) and current information about these products including features and costs is available on the PAR website https://www.parinc.com/. In this section, we begin with a review of a few of the assessments that Holland and his colleagues authored, followed by several other assessments, not developed by Holland, that assess personality and interests with results reported in a RIASEC format.

The Self-Directed Search (SDS; Holland & Messer, 2015). Holland developed this interest inventory in 1971 and all the items, scales, and results are completely consistent with RIASEC theory. The SDS has scales that assess the user's liked occupations, activities of interest, competencies, and self-estimated abilities across RIASEC areas. A feature not found in other interest inventories is Holland's inclusion of self-estimated abilities from a RIASEC perspective, rendering this inventory a RIASEC-based interest and abilities assessment. Because of Holland's belief that expressed interests are just as powerful as assessed interests, the SDS begins by asking users to list their occupational aspirations, daydreams, or work history. These occupations can then be coded using Holland's theory and provide a way to assess the coherence of a person's expressed interests as well as the congruence between their expressed and assessed interests.

The SDS can be purchased and taken in paper-and-pencil or online formats and there are no special qualifications required to use it (Qualifications Level A). The SDS is available in over

40 languages in two editions, StudentSDS for middle and high school students and StandardSDS for college students and adults. The publisher, PAR, estimates over 40 million persons have used the SDS since it was developed. The SDS links score results to more than 1,400 occupations in the Occupational Information Network (O*NET) system, a continually updated online database developed and maintained by the U.S. Department of Labor/Employment and Training Administration. A searchable SDS bibliography of over 2,000 references in MS Word is available on the PAR website using Zotaro (Self-Directed_Search_(SDS)_References.docx (live.com)).

A practitioner can describe the SDS as a career planning simulation, a point of view promoted by John Holland. There are several reasons to do this. First, the SDS is not identified as a test or inventory on any of the materials and the cover of the Assessment booklet carries the subtitle "A Guide to Educational and Career Planning." Second, the SDS, as a guide or simulation, can be dissected and broken down into its component parts in order to more fully understand how an individual's career decision-making process works. Third, the SDS is a simulation of what might typically occur in a career counseling interview. For example, an individual might be asked to describe their interests, hobbies, abilities, or occupational aspirations which are all sections in the SDS.

The Vocational Preference Inventory (VPI; Holland, 1985). The VPI was one of Holland's early inventories that he used to learn more about the RIASEC typology. The VPI is a Qualifications B assessment meaning that a 4-year college degree in psychology or a counseling-related field is required. It is available from the publisher, PAR, for a fee.

Recognizing the power of occupational stereotypes and the meaning that individuals attach to them, Holland created an unobtrusive, innocuous personality/interest inventory that records user responses to occupational titles. The VPI includes 160 occupations representing

RIASEC personality types, and it appears, on the surface, to be an innocuous personality assessment measure. The VPI report includes scores on the six RIASEC Holland types and 5 other dimensions, i.e., Self-Control, Status, Masculinity/Femininity, Infrequency, and Acquiescence. The VPI can be completed in 15-30 minutes and scored in one minute. VPI raw scores can be used with *The Occupations Finder*, *The Leisure Activities Finder* (LAF), and the *Dictionary of Holland Occupational Codes* (DHOC) to explore options in relation to the client's code.

Although the Vocational Preference Inventory (VPI) has a long history in Holland's work, it is not as familiar to most practitioners as the SDS. The VPI's development led to the development of RIASEC theory, which in turn led to the development of the SDS. As a result, the SDS and VPI have similarities in that both are measures of Holland's theory and both can be used by individuals as career interventions. Holland (Holland et al., 1994) compared and contrasted the VPI and SDS as follows:

1. The VPI enjoys wider use in research and organizational psychology applications; it is more oriented to traditional one-to-one interventions, while the SDS relies more on client initiative.
2. The VPI is a psychological inventory and the SDS is a career counseling simulation.
3. The VPI assesses four dimensions not included in the SDS,
4. The SDS evaluates activities, competencies, and self-ratings in addition to occupational likes and dislikes.

In summary, the VPI provides a quick means of generating a scientifically valid Holland RIASEC code; it generates a Holland code without providing the more intensive intervention that follows from use of the SDS; and it allows for the assessment of additional personality

factors in an unobtrusive manner. Rose (1996) discussed using the Holland typology in business settings for employee selection and development and providing numerous case examples based on an individual's VPI results.

At this point, we want to review two widely-used interest inventories that are based on RIASEC theory but were not authored by John Holland.

The Strong Interest Inventory (SII; Donnay et al., 2005). The SII did not originally include the RIASEC typology in the interest profile results, but Holland reached out to David Campbell, a classmate at the University of Minnesota working for the publisher, Consulting Psychologists Press, and arranged a trade. Holland gave the SII access to RIASEC theory for use in reporting score results, and Campbell gave Holland interest data that he could use in a validity study of the SDS. The SII is one of the oldest interest inventories available in the United States. It was empirically derived and originally developed in 1927, and now incorporates the RIASEC model into its results. The SII produces results in a sort of hierarchy. The General Occupational Theme score is the broadest and reflects a test-taker's Holland Code or top RIASEC areas. The Basic Interest Scales are areas of test-taker interest (e.g., health care services) that are more specific than RIASEC-level interests but not as specific as an occupational title. The Occupational Scales reflect the interests the test-taker has consistent with people in a particular occupation (e.g., minister). The personal style scales diverge from the other scores focused on interest and provide scores on other areas of preference such as risk-taking.

The SII can be purchased in an online format from the Myers-Briggs Company. It is intended to be administered and interpreted by a qualified practitioner.

The O*NET Interest Profiler (OIP; National Center for O*NET Development, 1999). The OIP has 60-items consisting of RIASEC-relevant work activities to which respondents

answer “like” or “dislike.” The OIP was developed by the U.S. Department of Labor Employment and Training Administration (USDOLETA) about the time the O*NET was created in order to help persons identify which of the hundreds of occupations in the system might be most useful for initial career exploration. The agency contracted with psychologists to develop the instrument, which became the property of the federal government. This is noteworthy because it means the contractors did not have an ongoing relationship with the agency similar to that of an author and a commercial publisher. There is no author name on the OIP and the contractors are not financially invested in the product’s success (Reardon & Lenz, 2015).

USDOLETA sought to develop a self-scoring, reliable, brief instrument compatible with Holland’s RIASEC theory that would produce lists of occupations based on a RIASEC score. Holland was not involved in this development process. Brown (2005) and Michael (2005) reviewed the OIP and concluded that USDOLETA had accomplished its goal in developing an instrument for career exploration. However, unlike the SDS, the OIP does not include items measuring daydreams, competencies, or abilities, but focuses on work activities, e.g., direct a play, fix a broken faucet, teach a high school class. While the OIP is “free,” Reardon and Lenz (2015) noted that the score report is provided in a 24-page booklet for manually adding scores and the O*NET master list of 700 occupations is provided in another 20-page booklet. While these interpretive materials and OIP results can be downloaded at no cost, the user would incur printing and paper costs for these reports.

In summarizing their review of the SII and OIP, Holland and Messer (2013) found significant correlations for all six RIASEC codes between the OIP and SDS. Similar to the SII, they found the SDS code was the first letter in the OIP code in 54.9% of the cases. However, they found 11.8% where the first letter in the SDS code was not included anywhere in the OIP

code. While Holland and Messer (2013) reported convergent validity for the SDS in their analysis, practitioners should be aware that the three-letter SDS code is not always identical to the codes in the SII (2%) and the OIP (11.8%). In addition, Holland and Messer found the first and second letters of the SDS code matched the first and second letters of the other two codes 13.7% (SII) and 9.8% (OIP), respectively. *These findings indicate that the SDS RIASEC codes are not completely the same across different interest measures*. Practitioners should be mindful of this fact when using RIASEC codes obtained from various instruments.

At this point this chapter moves from interest inventories that produce a RIASEC code to two other instruments Holland developed that help us understand more about the reliability or stability of a RIASEC code in terms of person/environment fit. This section examines the My Vocational Situation and the Career Attitudes and Strategies Inventory instruments.

The My Vocational Situation (MVS; Holland et al., 1990; Holland et al., 1993). The MVS is an example of Holland's creativity and attention to practical matters. This work began when Holland and his daughter Joan (Holland & Holland, 1977) conducted research on "undecidedness" which led to the development of the Career Decision-Making Difficulty Scale. They wanted to understand more fully what "being undecided" about an occupation or career really meant to individuals.

Rather than finding a complex structure of characteristics associated with undecidedness, they found that one large factor or variable seemed to be most important. This variable was eventually labeled "Vocational Identity" (VI) in the MVS, and consisted of 18 items. With the MVS, Holland wanted to create a simple screening instrument that would enable a career practitioner to quickly identify individuals who might not benefit from taking the SDS without practitioner intervention. For this reason, all MVS items are scored in the same direction, and the

practitioner simply counts the number of "true" or "false" responses to obtain a score for vocational identity, and the "yes" or "no" responses for the need for information and perceived barriers items. The MVS can be completed in 10 minutes or less and scored in seconds. True responses to the 18 VI items may indicate a lack of readiness for career decision-making that should be discussed before taking the SDS or another interest inventory. In other words, the Identity Scale provides a measure of the stability of a person's interests, roles, goals, and values which is important in using the RIASEC typology. Indeed, vocational identity may be the overriding factor contributing to the lack of person/environment (P/E) fit for an individual related to the RIASEC typology. The MVS is available for free and may be downloaded at https://www.sralab.org/rehabilitation-measures/my-vocational-situation. Additional information about the MVS was reported by Reardon and Lenz (2015).

In short, the evidence about the Identity Scale implies that it is a general measure of psychological health, although it was developed to assess only vocational decision-making difficulties and related problems. Early reviews of the MVS were negative. In spite of this, Holland (1997) concluded that "the evidence for the validity of the VI [vocational identity] scale is substantial and relatively unambiguous" (p. 150).

The Career Attitudes and Strategies Inventory (CASI; Holland & Gottfredson, 1994). Like the MVS, the CASI was developed by Holland and Gottfredson (1994) to assess those career decision-making factors that might fall outside of the RIASEC conceptualization, especially for unemployed or employed adults. These factors were seen to contribute to issues with person/environment fit in RIASEC theory. Nine scales on the CASI include Job Satisfaction, Work Involvement, Skill Development, Dominant Style, Career Worries, Interpersonal Abuse, Family Commitment, Risk-Taking Style, and Geographical Barriers.

Results from this inventory will help one integrate issues such as family commitments or aversion to risk taking into career decision-making. This paper-and-pencil assessment is available for a fee from PAR Inc. and is Qualification Level A, meaning that no specific qualifications are required to use it (https://parinc.com/Products/Pkey/43). In addition to these scales, the CASI includes a checklist of 21 career obstacles that many persons express concerns about in relation to their career development, e.g., health, finances. The CASI is self-scored, self-profiled, and can be self-interpreted in about 35 minutes.

The CASI can be used as a tool in a number of service delivery modes. For example, in a setting where there is both brief, self-directed assistance, and one-on-one counseling, the CASI might be used as a screening tool to determine who needs more in-depth assistance. The CASI could also be used with an adult transitions group and the issues assessed by the CASI could be the focus of group discussions. Like the MVS, it can be used as a readiness measure for career decision-making based on RIASEC theory. In summary, the CASI focuses on some events and issues presented by persons seeking career services or having career problems that are not captured or explained by the SDS and the RIASEC typology. The CASI can supplement other Holland assessments and provide further information about how individuals view their work situation, and what the source of their difficulties might be.

Managing with RIASEC Tools

Managers can assist employees in finding organizational fit using several RIASEC tools described in this section. For example, managers can consider how teams may be more productive if RIASEC theory or RIASEC-based assessments informed hiring practices. Dissatisfied employees may benefit from insight into their RIASEC type to help them find a better fit in the organization or adjust their expectations of self and co-workers based on that

knowledge. This section describes two tools available to managers in facilitating organization fit with employees.

The Position Classification Inventory (PCI; Gottfredson & Holland, 1991). The PCI is the environmental counterpart to person-based interest assessments such as the SDS. Workers and others familiar with an environment or job can answer the PCI items to determine the 3-point RIASEC code of a job or position. This assessment allows people to use RIASEC theory to classify very specific environments and employment positions rather than relying on the environmental coding in resources such as O*NET that depict the average work environment associated with an occupation. The PCI is available in a paper-and-pencil format and, like the SDS, is available for purchase from Psychological Assessment Resources (PAR, Inc). The PCI is a Qualifications B assessment, meaning that a 4-year college degree in psychology or a counseling-related field is required (https://parinc.com/Products/Pkey/317).

The publication of the PCI made it possible for managers and employees to focus on positions within an organization and to classify them according to the RIASEC typology. The PCI consists of 84 items and can be completed and scored in less than ten minutes. Items are organized under the following headings: (1) activities, (2) outlooks, (3) personal style or values, (4) skills/abilities/personal characteristics, (5) abilities/skills/talents and frequency of activities, and (6) personal characteristics.

The PCI can be useful in several ways. For example, similar positions within an organization may be classified differently when the PCI is used. Helping workers and their supervisors understand the demands of particular positions using the RIASEC typology and how these demands fit or do not fit with an employee's personality type can be valuable information in employee supervision. Reconciling a discrepancy in the P/E codes for a person and position

may improve organizational fit for an employee. For example, an individual in a front desk position with a PCI code of SCE would likely be an unhappy worker if they had an SDS code of REC. Moving the worker to a position more aligned with their personal interest code of REC could improve their organizational fit.

The PCI can also be used in individual coaching sessions between employees and supervisors. If the employee is happy in their present position with a code of CRISEA, they could complete the PCI items across the six areas according to their view of an ideal position for them which might be ASEIRC. The level of agreement or congruence between the present position and the ideal position code in terms of the RIASEC typology could lead to some adjustments in the current position or an employee's move to another position closer to their ideal job code.

In addition, the supervisor could fill out the PCI as they see the position and the employee could complete the PCI as they see it. If the two views of the position are not congruent, an exploration of the RIASEC typology could provide a new and common language for discussing divergent views of the position between the supervisor and employee. Lenz (1996) described how the PCI could also be used in supervisor-employee discussions of training and development activities.

In addition to individual supervision, the PCI can be used with work teams to explore perceptions of work tasks for a particular position. Organizations often have problems when employees assigned to the same position have different perceptions of what the job demands or requires. A supervisor could ask employees in the same position to complete the PCI and this might provide useful information for a small group discussion with the supervisor about how to work more effectively as a team. A variation on the activity might involve a team where persons

actually have different roles on the team and are not in the same positions. They could use the PCI as a "shorthand" way of describing their unique contribution to the team. This group activity might be a way of focusing on the strengths of each team member and the special set of skills, values, and perspectives they bring to the team.

The Environmental Identity Scale (EIS; Organizational Focus Questionnaire; Gottfredson & Holland, 1996). The EIS was published in Appendix C in *Making Vocational Choices* (Holland, 1997) and it is a 16-item instrument that assesses an individual's perceptions of their work environment. Individuals respond by endorsing the degree to which each statement characterizes their employment by filling in circles representing *False*, *Mostly False*, *Mostly True*, or *True*. Sample items include "This environment clearly signals to workers what performance is expected of them," and "In this workplace people know what to do and when to do it." A high score on the scale indicates that the environment is characterized by clear and stable goals, rules, and rewards, while a low score indicates a lack of consistent direction and reward (Holland, 1997). The research version of this instrument is alternatively called the Organizational Focus Questionnaire. The EIS is not rated as either a Qualifications Level A, B, or C assessment instrument.

Holland (1997) defined environments with strong or clear identity as having a limited set of consistent and explicit goals, while those with a weak or diffuse identity have a large set of conflicting and poorly defined goals. Nauta (2020) noted that "strong environmental identity is present when an environment or organization has clear, integrated goals, tasks, and rewards that are stable over long time intervals" (p. 69). A high level of environmental identity suggests that RIASEC codes for that organization or environment are more likely to be accurate and useful. As noted earlier, environments can include a school, business, organization, association, or personal

relationship. Smart and Thompson (2002) noted that “the construct of environmental identity essentially defines the clarity and focus of environments” (p. 438).

G. D. Gottfredson (2000) employed the EIS (Organizational Focus Questionnaire) in a study of school environments. The results demonstrated relationships between scores on the EIS and important school-related outcomes such as morale, parent involvement, administrator leadership, and school orderliness. These results supported the association between the environmental identity of schools and positive organizational effects. G. Gottfredson et al. (2005) reported that schools in which students perceived greater fairness and clarity of rules indicating higher organizational focus had less delinquent behavior and less student victimization.

Perdue et al. (2007) and Vernick (2003) found support for the importance of environmental identity for examining multiple facets of job satisfaction, and the role of person-environment congruence or fit and self-efficacy in satisfaction with work. Their findings indicated that employees are likely to be more satisfied with their jobs if they perceive the goals, rules, and rewards of their organization to be clear and consistent, a high level of environmental identity in the organization. The clarity and consistency of the goals, rules, and rewards of an organization have important implications for employees’ job satisfaction and the managers supervising them. Inspection of an employee’s responses to EIS items might serve as a point for discussion with a supervisor.

Some Final Thoughts on RIASEC and Organizational Fit

Person/Job Incongruence in Society. What happens to RIASEC types who can’t find a compatible environment? RIASEC theory suggests that career satisfaction is the result of a good person-environment match but what if that does not happen? In an ideal world, there would be a

correspondence in the relative frequency of RIASEC persons and occupations in the economy and P/E matches would be possible.

However, Whyte and Rayman (1985) examined the unevenness or lack of fit with respect to RIASEC codes among people and jobs in the environment. Using U.S. census data for jobs and an SDS male sample of high school age and older, Gottfredson et al. (1975) showed that the IAS code accounted for 18% of jobs and 51% of the male sample. Likewise, the RCE code accounted for 52% of jobs and 49% of the sample.

Whyte and Rayman (1985) offered several observations about this lack of fit between people and jobs and how a society might deal with the problem. On the one hand, circumstantial incongruence is relatively temporary and may occur when unemployed persons take temporary jobs to make ends meet while looking for more congruent, permanent positions. On the other hand, structural incongruence is relatively permanent because it is related to the systemic lack of RIASEC congruence in society between persons and jobs.

What does this mean for managers or career practitioners? Whyte and Rayman (1985) identified possible redistribution mechanisms operating at the societal level to increase the P/E match. These included the idea that persons in incongruent jobs are less likely to model this option for others, i.e., incongruent parents may encourage their children to pursue more congruent options. Moreover, persons who must change their jobs because of structural incongruence (e.g., factories close and Realistic jobs are lost) may find it easier to make a transition to other jobs in related areas, e.g., selling building supplies (ESR work). Also, individuals whose personality type is incompatible with available jobs may find leisure activities and/or entrepreneurship a useful mechanism to increase congruence in their lives. For example,

Realistic persons experiencing low person/job fit because of factory closings might explore R-type hobbies or start a lawn maintenance business.

Teams and Types. Muchinsky (1999) detailed how industrial-organizational psychology, employee development, and human resource professionals could better utilize Holland's theory to create work teams and aid employees in making lateral moves necessary for continued efficiency in the organization. Muchinsky highlighted how some RIASEC types are more amenable to reorganization of their job roles (i.e., Enterprising, Conventional, and Social types) and others may be quite resistant (i.e., Artistic and Investigative types). Enterprising types are typically up for change and movement in their job roles. Conventional types typically seek stability and familiarity. They may see the request to change roles with their current employer as a way of avoiding a job search that leads to a new, unfamiliar work setting or organization. Social types are often looking to help out. They likely see the request to take on a new job as "taking one for the team" and experience fulfillment in doing so. In Muchinsky's reported organization consulting experience, the Investigative and Artistic types (remember these folks like dealing with ideas more than people) were quite resistant to change and saw their original work as a calling. Muchinsky warned that any planned lateral moves and reorganization needs to take into account the tendencies of the Holland types. Supervisors should consider if there are RIASEC-congruent moves that could be made. These are important reasons for managers to know the Holland types of their employees.

Social Power. How do RIASEC environments affect people? How do they pull and attract more congruent types or push and repel the less congruent types? What is the nature of the social power of an environment? Holland (1985) offered speculations about these processes. Staying within the typological theory, Holland suggested that environments that were more

consistent (i.e., first two letters adjacent) or more *differentiated* (i.e., proportionally higher numbers of persons with the same high-point code) would have a more powerful impact on persons than environments marked by low consistency and low differentiation. The consistency and differentiation of an environment could be readily determined by assessing the distribution of types in the environment. For example, in a bank employing 200 persons, counting the number of RIASEC codes represented would provide indications of consistency and differentiation in that environment.

Identity. Holland also suggested that environments characterized by high identity would have more power and influence on people. Holland defined an environment's identity level as being *inverse* the number of behavior settings, where behavior setting was defined as positions with different RIASEC codes. For example, the more positions in an organization with varied RIASEC codes, the lower the identity of the organization. In a small accounting firm, the identity score might be very high because only a small number of occupations are represented (e.g., secretary, accountant, lawyer). We could imagine that most people in such a firm would probably have some C in their code. On the other hand, a large university would have a very low environmental identity score because several thousand persons might be employed in several hundred different occupations, including glass blower (works in the chemistry lab), football coach, housing manager, and nuclear physicist. A large, complex organization with a very low environmental identity will have a very different impact on persons with regard to the RIASEC typology than a small firm with a very high identity, i.e., workers in a small firm may feel the need to conform to the dominant RIASEC code.

Proximity. Gottfredson (1985) suggested another factor that might help us understand how environments influence individuals' behavior. He defined *proximity* of an environment as

the probability that it will reward or punish behavior. Within the typology, a *high*-proximity environment would punish behavior or traits *incongruent* with the environment and praise or reward *congruent* behavior. A *low*-proximity environment may be thought of as weak, in that it does not clearly specify the most desirable behaviors for members, the behaviors are difficult to observe and monitor, and rewards or punishments are not available or used in the environment. While one environment (e.g., a large company or university) may exercise weak social power or proximity over persons, another one (e.g., a small, family-owned business or an individual's spouse) could provide much more social power for shaping behavior.

The implications of these ideas about environments for career practitioners and managers can be summarized as follows. First, the social power available in an environment might be related to its history, size, and complexity. Individuals can research organizations to learn more about these variables if they are seeking employment. Weak environments with low proximity or low identity might be more likely to tolerate varied types. A high level of congruence between a worker and job might be much more important to consider in organizations having high proximity and identity. Such organizations might be more likely to *not* reward employees who did not have a code congruent with the position.

Second, it is important to remember the nature of the RIASEC types themselves in considering environments. For example, we might expect that large Social organizations would be more tolerant of diversity than small Conventional environments. Organizations or work environments with low consistency and differentiation, low identity, and low proximity are less likely to punish incongruence or to reward congruence. Finally, in work environments with high levels of proximity associated with higher education levels and on-the-job training, there may be

more of a tendency to not hire, not promote, or not reward those who do not have the necessary degrees and training experiences to work in such an organization.

Summary

This chapter focused on how interests connect to factors in the environment that contribute to an individual's organizational fit and career/life satisfaction. It reviewed how the RIASEC typology can impact organizational culture and how work performance by an individual can vary depending on the organizational environment and the dominance of varied types. The chapter then examined ways RIASEC information can be used with special tools, e.g., SDS, VPI, PCI, CASI, developed by Holland and others in individual counseling and organizational management. Finally, the chapter examined some several special considerations regarding issues in person/environmental fit, e.g., incongruence, organization teams and types, identity, social power, proximity.

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CHAPTER 6

RIASEC AND LIFE ROLE SITUATIONS

Every individual has life roles outside of their paid work and this chapter uses RIASEC theory to address the person/environment matches in these roles, including spouse or partner, parent, volunteer, retiree, and citizen, i.e., roles that typically involve some degree of leisure activities. The chapter discusses how even a relationship with another person involves creating an environment with that other person, and this includes family relationships. In addition, the chapter examines research involving parent's RIASEC types and the effect this can have on the interests of their children. Finally, the chapter explores how an individual's RIASEC interests are involved in leisure choices, i.e., discretionary activities and experiences, and how these choices can enhance life satisfaction.

RIASEC and Varied Life Roles

Most individuals do more each day than go to work or school and they maintain a variety of responsibilities outside of their paid work. They may be active in community roles (e.g., civic clubs, religious organizations, political causes), family responsibilities (e.g., children, elder care),

hobbies (e.g., knitting, sports, the arts), and all kinds of other roles that make up their lives. Holland's RIASEC theory can help provide effective person/environment matches in these other roles and it provides a language for talking about this using the terminology for the six RIASEC types. For instance, individuals may find some hobbies that are more satisfying than their paid work. This could happen because their RIASEC interests are more congruent with their hobbies than their job.

An individual might also find that some of their life roles are more dissatisfying than others. While one may value these roles, they may not be congruent with their RIASEC interests. For example, a mother might find herself drawn into volunteer activities with kids. Although she values the roles of caretaking, educating, and entertaining her children and others their age, it is a role that she finds exhausting. Her interests are more congruent with writing a book than the Social, Artistic areas (with a side of Enterprising) that childcare requires. The RIASEC typology can help her understand what is happening. Rather than feeling like others are better parents and school volunteers, she can just acknowledge that these roles are more challenging for her given her interests and personality.

Individuals can consider how their other roles fit into their life, shape their identity, and affect their days. For example, a person was asked the common question, "So, what do you do?" and answered, "I am paid to sell shoes but I am a painter." This was likely an Artistic person that could not get a paid job to paint and, therefore, had a job outside of their interest area selling shoes. Another life role, their painting hobby, defined their identity more than their paid work.

There are some life circumstances when necessary or desired life roles are inconsistent with one's interests. Such roles require individuals to accommodate or fit the incongruent environment in order to engage these roles. Individuals can reflect on how they feel after

engaging in some of their life roles. Are they excited, drained, or relaxed when they leave the tasks associated with a role? This can provide clues on whether or not this role is consistent with their RIASEC interests or their broader personality. For instance, the event one just attended could have required more extroversion than they were comfortable providing, and now they are tired. The importance of integrating one's interests and personality applies to all life roles engaging the environment. Life satisfaction may hinge on an individual's ability to identify the RIASEC category of everything they do, not just what they are paid to do. In the following sections we will explore in more detail the roles of marriage and parenting and how they intersect with RIASEC theory.

RIASEC and Spouse/Partner Relationships

This book has been focused on examining John Holland's RIASEC theory of vocational personalities and work environments and extending it to other life decisions that involve effectively matching persons and their options. Research has also supported the ability of Holland's theory to explain marital satisfaction and provide a resource for building greater life satisfaction. While opposites are sometimes said to attract, we are likely to marry someone who is similar to us in almost every variable (Buss, 1985).

RIASEC theory provides a way to explain how spouses or partners can serve as environments for one another (Gottfredson & Holland, 1996). As a result, one's marital relationship can be as much a RIASEC environment as one's paid work. One study found that married couples' interest patterns become more similar to one another over time (Shultz et al., 2017).

Holland's theory draws upon many of the theories of interpersonal attraction, including the idea that people seek environments where they can express themselves and are happy (Bruch

& Skovholt, 1985). Regarding spouse/partner relationships, researchers have sought to see if more congruent RIASEC types reported higher levels of marital satisfaction. Several studies in the 1980's examined marriage outcomes in relation to the congruence of the married couple's RIASEC types, and it was consistently found across these studies that those with more similar RIASEC interests reported more satisfying or happier marriages (Bruch & Skovholt, 1985; Wiggins et al., 1983).

For example, Ton and Hansen (2001) examined six variables related to person/environment fit predicting satisfaction with work and marital roles. They found that the perception of congruity of interests accounted for about 30% of work and marital satisfaction. Moreover, the degree of congruence with their spouse/partner interests and values was a stronger predictor of marital satisfaction than many other variables examined in the marriage and family literature. Bruch and Gilligan (1980) even found that women entering second marriages tended to choose spouses or partners with more congruent Holland codes than they had in their first marriage. In another study (Wiggins & Weslander, 1979), the personality typologies of couples who sought marital counseling were generally incongruent as determined by Holland RIASEC codes. Moreover, the Holland hexagonal model was useful in predicting which spouse would initiate marriage counseling, obtaining a cognitive understanding of specific conflicts, and helping couples resolve concerns (Wiggins & Weslander, 1979).

Wiggins et al. (1983) investigated the effect of personality typologies, years married, educational level, job congruence, children, and previous marriages on ratings of satisfaction with 125 married couples. Correlational data indicated that the measured compatibility between the individuals' personalities seemed to be a major factor in achieving and maintaining marital satisfaction. Findings included the role of spouse perceptiveness in determining reported

satisfaction in the marriage. Moreover, findings indicated that couples who develop methods of interaction that facilitate communication and improve their understanding of each other's feelings and perceptions were more likely to have greater marital satisfaction. For both the husbands and wives, the compatibility of the couples' tested personality typologies was the most significant predictor of reported marital satisfaction. Findings support the notion that individuals express satisfaction with and seek interaction in environments that meet their psychological needs.

However, two doctoral dissertations produced negative findings (Mathis, 1977; Dorset, 1978) regarding RIASEC interests and marriage compatibility. Mathis (1977), using the Vocational Preference Inventory, found that congruence level between vocational types was not significant in predicting marital satisfaction. Another study, Rouse and Roach (1984) found no support for Holland's contention that greater congruence between one's self and one's environment (marital relationship) leads to greater satisfaction.

An individual not married presently and anticipating what might happen in the future may want to consider how similar their RIASEC interests are with potential partners. However, if an individual is married and now realizes that their spouse or partner's RIASEC type is very different from their type, there are reasons to be hopeful. RIASEC/marriage researchers have pointed out that one cannot assume that these relationships are headed to negative outcomes if spouses or partners have widely different interests, but they do suggest that such couples may need to take the time to learn about one another's interests and personality. When RIASEC interests vary widely, individuals tend to approach problems in a different way, enjoy spending free time in different activities, and express emotions differently or with varying frequency.

Knowing how a spouse/partner may approach these situations differently may give an individual the empathy needed to make changes in communicating and understanding. We can illustrate how this might work by sharing the story of a couple that had a wonderful marriage but very different interest patterns. The wife, Anna, was a strong Enterprising and Social type. The husband, Lamar, was a strong Investigative type combined with Realistic and Artistic interests. Anna preferred to express her feelings multiple times a day, loudly and with great enthusiasm. She craved interpersonal contact from Lamar and a broad social group. While Lamar loved spending time with Anna, he had little desire to regularly socialize with others outside his family. He had a wonderfully creative imagination and could become engrossed with a wide range of topics from calculus to gardening. He rarely expressed his emotions and would often retreat when he or Anna's emotions became too strong.

How were two such different people so happy in their marriage together? The answer to this is complex, but essentially Lamar and Anna were aware of each other's differences and preferences, and after 20 years, they had come to appreciate those differences in one another. Their expectations of one another were tailored to what they knew of each other's interest patterns or RIASEC profiles. For example, Lamar encouraged Anna to socialize with friends without him when he had had enough socializing. Anna knew she was not going to get daily emotional expressions from Lamar and saved her demand for these expressions when the issue was critical.

These lessons from Anna and Lamar apply to many varied relationships. This knowledge of RIASEC interest patterns and those of others can help all of social relationships, including those with friends and co-workers. Continued research is needed in this area to explore the modern issues of marriage.

RIASEC and Parenting

Parents often serve as the first and most powerful influence on the interests of their children. If parents are going to support the career interests of their children, there are some enlightening research findings from work with RIASEC theory that may be useful. For example, one study found that interest levels tend to gradually rise across all RIASEC areas as individuals age (Hoff et al., 2018). At the same time, there is a fairly universal decline in interest levels in young adolescents before rising again as they get older. These teen years are often when parents prompt their children to identify their interests and consider the next steps in education and work (i.e., college major, work after high school). Parents should remember that this may be the time adolescents are least likely to be interested in identifying an educational or career path for the future.

Barclay et al. (1972) analyzed the effect of paternal occupation, as classified by RIASEC theory, on the social interaction, vocational awareness, self-report and teacher expectations of their children in elementary school. The paternal occupations of 1,386 elementary school children were identified. The results indicated that social interaction differences in children are generally in agreement with environmental thrusts related to paternal occupation. In another study, Trice (1991) interviewed 620 full-time employed adults to identify their first career aspirations and the ages at which they were made. Aspirations and occupations were classified according to Holland's (1985) RIASEC occupational categories. While exact matches with current occupations were rare, they increased in frequency with the higher age of the first aspiration. Those reporting early aspirations in the same category as their fathers' occupations were more likely to remain within the same category at middle age than those whose early career aspirations did not match their fathers' occupations.

Another study focused on the development of offspring RIASEC personality types when both parents possessed the same type (Schneider et al., 1980). Female offspring tended to develop personality types more congruent with their parental-pair type; however, the degrees of congruence between male offspring and their parents' personality types conformed to chance expectation and were not congruent. This finding was at variance with previous studies showing that individual parent personality types encourage similar personality development in offspring.

A final study in this section explored the relationship between the career aspirations of 89 preadolescents from low socioeconomic backgrounds and the actual occupations of the working adults in their homes with regard to status, job gender identification, and RIASEC interests (Holland, 1997). There was a significant relationship between boys' career aspirations and the occupations of the working male adults in their homes, specifically job gender identification and interest. More adult males had stereotypically male jobs—classified as Realistic by Holland (1997)—that was mirrored in the preadolescent boys' career aspirations. There were no significant matches between the boys and working women or with the girls and the working adults of either gender.

At this point, we can return to the work of Tracey (2008) and others reviewed in Chapter 4. They found that college students without an *intuitive* RIASEC schema for organizing information about interests and occupations experienced greater career indecision. This finding suggests that the RIASEC hexagon may have a normative benefit regarding the classification of occupations and fields of study. Students adhering to this structure had stronger career certainty, interest-occupation congruence, and career decision-making self-efficacy at the beginning of a career course than those not using the RIASEC structure. This finding of RIASEC adherence has implications for parenting children regarding educational and career decisions given that students

who have learned to use RIASEC to organize an array of occupational titles have fewer career decision-making difficulties.

Moreover, in Chapter 4 we noted that Ed Hidalgo reported introducing the RIASEC schema to elementary students and that it became a *common language* that helped teachers build more powerful and insightful relationships with students. Although the RIASEC paradigm may be best known for organizing careers and personal interests through assessment, Hidalgo reported that in the school districts it is the *common language* for integrating career-related learning for every child in every grade. Parents can use this information to help their children incorporate the RIASEC schema into their understanding of work, school, and leisure options.

Much of the scholarly work related to parental influence on children's interests occurred in the 1960's and 70's. That research consistently supported the idea that "types produce types" (Holland, 1997). In other words, earlier research supported the notion that children were more likely to have interests, college majors, and occupational choices aligned with their parents' interests. This alignment of interests was even more likely if the parent and child were biologically related, supporting the idea that some of this parental influence may be genetic (Grandy & Stahmann, 1974; Grotevant et al., 1977).

This body of research also supported the idea that the methods of supervision and teaching that parents use may influence RIASEC interests of their children. One study found that authoritarian parents were more likely to have girls with Conventional interests and boys with Realistic interests (Holland, 1962). In addition, the same study found that parents with a more democratic parenting style were more likely to have boys with Investigative interests.

The influence of parenting practices, gender perceptions, and gender socialization on the interests and future work roles of their children has evolved considerably since the bulk of this

research was completed four decades ago. However, a more recent study found that adolescents' RIASEC interests aligned well with their parents' interests (Naylor et al., 1997). The adolescents' interest areas also mirrored the prestige and sex-type (i.e., the gender most people associated with the occupation) of their parents' work. Given the consistency of these research findings across time, it appears that parents can have confidence that the occupations they have chosen and the way they parent can affect their children's interest development and the occupational choices they consider. Being aware of the efficacy of RIASEC theory and the hexagon may be helpful to parents in raising their children. Finally, parents should remember that the verbal and nonverbal messages they send about their career interests and their job satisfaction may shape the life and career interests of their children.

RIASEC Interests and Leisure Options

This book has been focused on using RIASEC theory to examine matches in education, work, and relationships, but the theory also addresses issues related to leisure time. What do we mean by leisure? Reardon et al. (2022, p. 42) defined leisure as "relatively self-determined activities and experiences that are available due to discretionary income, time, and social behavior; the activity may be physical, intellectual, volunteer, creative, or some combination of all four." Many individuals spend some portion of their day or days in leisure as it is defined here.

Reardon et al. (2022, p. 43) further noted that leisure may be (a) complementary, (b) supplementary, or (c) compensatory (Blocker & Siegal, 1981). These three areas of leisure are defined below.

• **Complementary** leisure extends and magnifies one's job activities. For example, a professional musician in a symphony could spend weekends teaching other gifted musicians the fine points of mastering a musical instrument.

• **Supplementary** leisure could enrich one's life in ways that go beyond job satisfaction. A high school football coach could join a class in woodworking as a way to meet different kinds of people and enjoy solitary work.

• **Compensatory** leisure could make up for deficits and dissatisfactions in one's job. An office manager of an accounting firm wanting to be more active and work with children might coach a youth soccer team.

Work and leisure-related interests have been found to fall along Holland's RIASEC categories (Leuty et al., 2015) and we elaborate on this idea in the following paragraphs.

Holland's RIASEC theory can make a difference in an individual's life satisfaction and it can help them plan ways to spend their leisure time. Some individuals may be on the cusp of retirement and frightened to think about life after steady work for many years. Maybe they have never had free time or hobbies in the past and they keep having the reoccurring thought of, "What am I going to do all day!?!" Holland's RIASEC theory can help with second careers and adjustments to retirement.

In retirement, a new hobby, volunteer opportunity, or second job might fall into one of three leisure categories described earlier: complementary, supplementary, or compensatory. These three categories can connect a relationship between one's leisure activity and their paid work. In other words, do they want leisure or a second job to complement, supplement, or compensate for what they already do or have done in the past (Blocker & Siegal, 1981)?

Holland was interested in leisure beginning in the 1970s, and reported efforts to study and learn more about avocational preferences and activities (Holland, 1997). Later, he was involved in creating the Leisure Activities Finder (LAF; Messer et al., 2013) first published in 1990 that incorporates the RIASEC the typology of one's interests to explore the leisure area. The LAF was in booklet form and included more than 800 leisure activities with a two letter Holland code (Greene et al., 2016). Flipping through this booklet was fun. It is interesting to see the RIASEC codes of one's favorite hobbies (e.g., yoga is SR, fishing is RE, sudoku is AI) and to learn about leisure activities not previously known that could help tie together some varied interest areas like Ukiyo-e which is in the CA interest area and Steeplechase in the RS interest area. (The LAF can be accessed through the PARiConnect Digital Library. It is free to register for PARiConnect and individuals can access the resource if they have a PARiConnect account. Individuals who do not have an account can call 1.800.331.8378, Monday through Friday, from 8 am to 6:30 pm ET to register for an account and to indicate that they would like online access to the LAF.)

One of the early criticisms of Holland's theory was that it was too simple, too limiting, tended to slot people into specific jobs, and did not help individuals consider broader life and career issues. Some individuals with limited employment options can have difficulty finding opportunities to express their interests, values, and skills in their jobs and need to look outside paid employment to find life satisfaction. The LAF provides a link between RIASEC codes and leisure options. Considering what may be the RIASEC code of some leisure activities you enjoy or are considering can be particularly useful in career, outplacement, retirement, rehabilitation, educational, social networking, and leisure planning. An individual can use the RIASEC code of

their last job or their current occupational aspiration to create a two-letter code to explore leisure options.

Greene et al. (2016) reported that the LAF includes more than 840 leisure activities in a 23-page reusable booklet. It includes hobbies, sports and other pastimes listed alphabetically and by two-letter Holland codes. Each activity is identified with one of 54 category labels, e.g., collecting, nature, entertainment, science, animal, adventure. These activities range from accordion playing to Zumba® with Magic and needlepoint in between. Many leisure activities have familiar names but others may be new, e.g., bouldering, capoeira, footbag (Hacky Sack®), koi raising, smocking. Almost all leisure activities listed in the LAF have an organization, website, or publication for additional information. *The Encyclopedia of Associations: National Organizations of the U.S.* (Gale Research, 2015), available in many public libraries or as an eBook (https://www.gale.com/ebooks/9781414487847/encyclopedia-of-associations-national-organizations) provides users with contact information for activities and includes 23,800 nonprofit membership organizations located in the U.S. In addition, the Career One Stop website in O*NET also has a professional association finder that can be used to locate information about leisure activities and related organizations (https://www.careeronestop.org/Toolkit/Training/find-professional-associations.aspx).

One study (Miller, 1991) examined the use of the LAF with a group of 70 graduate students who completed the SDS and then listed their preferred leisure activities. These activities were coded using the LAF, and the level of congruence between the RIASEC codes of the SDS and the leisure activities were computed. The author found a moderately high level of congruence between the two sets of codes, indicating some support for using the LAF to identify possibly satisfying leisure activities. However, it might be noted that some practitioners working

in educational settings have been critical of the LAF because it includes leisure activities considered to be morally wrong or illegal for youth below certain ages (e.g., beer making, gambling). Our experience indicates that SDS users find the LAF activities interesting and stimulating for increased understanding of RIASEC theory, and for thinking about new options enhancing life satisfaction. You can partially recreate the experience of using the LAF by considering the code for leisure activities of interest and how they may match or not with previous pursuits.

Summary

This chapter focused on RIASEC theory in relation to life roles other than student or paid worker, including spouse or partner, parent, and volunteer or retiree, i.e., roles that involve leisure. The chapter explained how even a relationship with another person involves living in an environment created with that person, and this includes family relationships, i.e., spouse/partner. In addition to this family role, the chapter examined research involving parents' RIASEC type and the effect on interests of their children. Finally, the chapter explored how an individual's RIASEC interests are involved in leisure choices, i.e., discretionary activities and experiences, and how these choices can enhance life satisfaction.

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CHAPTER 7

RIASEC MYTHS, REFLECTIONS, AND CONCLUDING THOUGHTS

This final chapter will explore and address some false beliefs or myths about Holland's RIASEC theory that can lead to confusion. This chapter also includes some concluding thoughts about future work with RIASEC theory that will continue to influence career and life options for individuals and organizations.

Myth or Fact

Several myths have emerged over the years about RIASEC theory that are sometimes presented as facts. When a theory has been around for more than 50 years and used in practice, research, and labor market organization around the world, some myths may develop. Such myths are typically a misrepresentation of truth, or a widely held false belief or idea. In this chapter we address ten of these RIASEC myths to make sure that individuals interested in this theory are able to refute those myths. Having knowledge of these facts can help ensure appreciation and use of RIASEC theory to its fullest. We have shared our views on RIASEC theory and myths

associated with his work previously and we summarize them here along with facts and information that we believe contradicts these myths (Bullock et al., 2008; Reardon & Lenz, 2015).

Ten RIASEC Theory Myths

1. Myth: The theory is simply matching an individual's career interest codes to occupational titles.

This is a common myth refuted or disproved in this book as we showed how RIASEC theory is about more than a job-matching process and includes other life roles. Some of that matching is inherent in the simplicity of the theory that Holland was dedicated to maintaining, but a long-standing, nuanced, and productive understanding of career development and decision-making is inherent in the depth of the theory explored in this book. Holland was committed to pragmatism and simplicity in his work with RIASEC theory and its applications, and the idea that it could be useful to any individual (Nauta, 2022). A google search of "Holland's hexagon" yielded about 3,660,000 results in 0.45 seconds on 8/7/23. We did a Google search for the term "RIASEC theory" and got 189,000 hits in .35 seconds, which suggests that this theory is about more than just matching individuals and occupations.

2. Myth: Six types cannot capture the complexity of today's world of work or the new job titles and roles emerging.

Given the six RIASEC interest types in Holland's theory, there are *720 different* possible *code combinations*, i.e., ISERAC, AIRSEC, or CSERIA. This suggests that the full application of the theory provides for complex ways of understanding occupations. At this point, we can also remember that RIASEC codes for occupations discussed in Chapter 3 are more generalized than the many thousands of specific job position titles found in varied kinds of organizations. Holland

developed the concept of RIASEC through observations of the expressions of vocational interests by individuals (Rayman & Gottfredson, 2020; Weinrach, 1980). The proliferation of the RIASEC concept in assessment, career counseling and advising, and labor market organization occurred because research studies repeatedly supported the notion that interests and environments tended to fall into these six areas (Nauta, 2010). As discussed in Chapter 4, Holland's RIASEC model is used to categorize every occupational title in the U.S. Census and has been shown by researchers to help explain the labor market from an income and employment option perspective. Holland provided the Position Classification Inventory (PCI) to aid in the coding of new jobs. The PCI can also be used to check the validity of the coding of long-existing occupations that have undergone some change in today's market. Gottfredson (2005) gave the example of how solar energy was expected to produce a whole new category of occupations that the RIASEC method of coding jobs could not accommodate. What actually seemed to happen was that solar energy companies employed a familiar mix of trades and professions such as plumbers, carpenters, and chemical engineers. RIASEC coding of these jobs applies regardless if the person in the job is generating electricity for old or new technology.

3. Myth: Matching personal characteristics to occupations is no longer possible or useful in today's work world.

Individuals endorsing this myth are likely referencing the variety of external forces we cannot control with regards to our career choices (e.g., economic downturns, climate change, pandemics, structural racism). These are legitimate issues that must be dealt with separately, but eliminating any consideration of an individual's personality, interests, skills, or values because of inequitable, unforeseen, or unfortunate forces in the environment is not prudent or warranted. Individuals having knowledge of themselves and their environment gives them the power to

manipulate their situation to the extent they can with the most leverage possible. An individual has the power to learn more about themselves and environments from a RIASEC perspective, and this can increase the chances they will be prepared and in the right place to take advantage of available opportunities.

4. Myth: Holland's theory of career choice is static and does not account for the development of a person's type.

This issue was directly refuted in Chapter 4. Those propagating this myth tend to talk about how Holland's theory provides a RIASEC label that limits or categorizes them. Indeed, as we have shown in this book, RIASEC theory gives individuals a schema and language to think about their career/life interests and options in the environment that might provide a good fit for them. Moreover, an individual learning about their career interests at one point in time does not mean that their interests will not change later. Holland emphasized the way in which the person and environment were shaped by their interactions with one another, and for individuals this continues throughout their lifetime.

5. Myth: Holland's theory can't be used with persons who have chaotic work histories.

As we explained in Chapter 4 and the case of Penny, Holland's theory may provide new and important information for an individual believing their work history is chaotic. There is a chance that what is perceived as chaotic can be better understood when conceptualized in RIASEC terms.

Sometimes a chaotic work history is due to external forces (e.g., layoffs, prison history, family care duties, natural disasters) that launch individuals into options or patterns that are not self-directed. After Hurricane Katrina devastated a large area along the Gulf Coast, counselors worked with dislocated clients that could no longer return to their job site. They felt like their

world was in chaos. Holland's theory provided them with a familiar and stable foundation for understanding how the job they lost could be reimagined using RIASEC-congruent options in their new environment. In a chaotic time, a bit of concrete information about how to translate what an individual has done in the past into new work was a relief and provided some hope.

6. Myth: The RIASEC types are not applicable to persons of different racial, cultural, and diverse backgrounds.

In the last twenty years there has been an increased interest in the applicability of RIASEC theory to diverse groups. Several reviews and comprehensive accounts of diverse groups and situations have shown that RIASEC theory is applicable (Bullock et al., 2010; Foutch et al., 2014; Sargent & Kennelly, 2016). Information has also documented the use of RIASEC theory in South Africa (Spokane et al., 2016), Serbia, Croatia (Hedrih & Sverko, 2007), Taiwan (Tien, 2009), India (Vijaya, 2011), and China (Yang et al., 2005; Yu & Alvi, 1996) and other countries.

This research notwithstanding, this myth persists as some believe that a theory created in the 20th century by a white Anglo-Saxon man, and within the context of U.S. white-majority culture, may not be applicable to a 21st century world focused on diverse groups across the globe. Some scholars in vocational psychology have suggested that traditional matching models perpetuate a focus on the privileged, well-educated worker, describing this as the "traditional career narrative" (e.g., Blustein, 2006). Others have said that matching theories, such as RIASEC theory, focus on the parts and not the whole career development experience. They have urged the use a contextualized life-designing model based on social constructionism, recognizing that an individual's knowledge and identity are the product of social interaction and that meaning is co-constructed through discourse (Savickas et al., 2009; Savickas, 2018). In addition, some have

suggested that translations of theories and instruments originating in the U.S. for use in other cultural settings often do not account for the context in which they will be used (Stead & Watson, 1998).

In contrast to these views, we believe that RIASEC theory can meet this challenge for diversification. For example, there are over 40 language and cultural translations of RIASEC-based assessments available in countries spanning the globe (Bullock et al., 2010). Their review included research with RIASEC theory in Africa, Asia, Europe, and South America, and it revealed that RIASEC theory is used across the globe to help individuals organize and understand person/environment fit in their work, education, family, and leisure. Holland's theory is in use almost everywhere to help people organize their work, environments, and lives.

Another study of 22,394 Americans showed the applicability of the RIASEC structure across a diverse set of students and working adults, notwithstanding their ethnicity as Asian Americans, Middle Eastern Americans, and Native Americans (Kantamneni, 2014). Moreover, Day et al. (1998) demonstrated support for the structure of RIASEC interests in a large sample of African Americans, Mexican Americans, Asian Americans, Native Americans, and Caucasians.

Finally, we can report that a few studies have explored RIASEC theory in relation to the LGBTIQA+ community i.e., lesbian, gay, bisexual, transgender, intersex, queer/questioning, asexual or other non-binary and pansexual terms. Mobley and Slaney (1996) suggested the use of RIASEC theory to assist individuals in this community. They suggested a need to increase the understanding of the theory in diverse groups by researching whether certain RIASEC environments are more receptive to hiring LGBT individuals as a way of expanding the congruence concept of the theory to meet diverse fit needs. Chung and Harmon (1994) looked at RIASEC interest patterns in gay men, finding that RIASEC theory was applicable to their

interests in the Artistic and Social areas at a higher rate than the straight men in the sample. Together, these studies demonstrate that as the United States continues to diversify, RIASEC theory remains applicable to the way people understand their interests and options in the environment, but research must continue to stay relevant to current experiences and perceptions.

7. Myth: Holland's theory encourages continued gender-based stereotypes.

Foremost among past RIASEC controversies were accusations that Holland's theory and instruments (especially the SDS) were (a) culturally biased against women and a variety of minorities, (b) had origins in research of highly talented sample groups rather than appropriately representative samples, and (c) were invalid and unreliable because of simplified measurement techniques. These criticisms concerned and offended Holland, and he sought to defend his life's work using the scientific tools with which he was most adept—research, persuasive scholarship, and persistence—all anchored in Midwestern dustbowl empiricism (Rayman & Gottfredson, 2020). In 1973, many participants in this controversy believed that the definition of sex-bias could be determined by simply looking at words and items, i.e., seeing if the endorsement rates for items were about the same for females and males, or by seeing if the distributions of interest inventory outcomes for females and males were similar (Rayman & Gottfredson, 2020).

The issue of sex bias haunted RIASEC theory and Holland's work with the Self-Directed Search in the 1960s and 1970s, and this troubled him a great deal (Rayman & Gottfredson, 2020). It was widely understood that individuals tended to associate certain occupations with men and other occupations with women. Additionally, these gender-based associations tended to fall into RIASEC categories (e.g., Realistic environments associated with men; Conventional environments associated with women). Holland was bothered a great deal by charges that differences in the measured interests of men and women reflected sex bias rather than valid scientific

information about the true variance in vocational interests. With reference to this controversy, Holland was especially pleased with the report by Swan (2005) showing 411 female carpenters and 137 male carpenters both had vocational interests dominated by the Realistic area as measured by the SDS.

The matter of bias and gender stereotyping can be addressed by examining the distribution of employment for men and women over five decades (1960-2000) in six kinds of work as reported in census data (Reardon et al., 2007). Most men were employed in the Realistic area, followed by the Enterprising area. Over the five decades, between 75% and 85% of male workers were in these two areas. This means that only 15% to 25% of men were employed in the other four areas. However, male employment in the Realistic area decreased over the five decades while the total and percentage of employment in the Realistic area remained the highest for the six kinds of work (44%). Realistic employment was only 0.4 million higher in 2000 than in 1960.

In comparison to men, women have been employed in more varied kinds of work, including Conventional, Realistic, Social, and more recently, Enterprising areas. Indeed, the percentage of women in the Enterprising area more than doubled over five decades, from 13% to 28%. In contrast, there were slight decreases in the Conventional and Realistic areas. For example, the percentage of women employed in Realistic occupations decreased from 33% in 1960 to 15% in 2000 in spite of some efforts to encourage nontraditional work for women. Yet the percentage of women in Investigative occupations increased from 1% in 1960 to 6% in 2000. From 1960 to 1990, Conventional was the area of work in which most women were employed, but in 2000 that shifted to the Enterprising area. In 2000, 28% of women were employed in Enterprising occupations and 26% were in Conventional occupations. The percent of women

employed in the Social area remained relatively constant over the five decades, although the actual number employed increased from 3.8 million in 1960 to 13.5 million in 2000. Artistic work consistently showed the smallest percentage of employment for women from 1960 to 2000.

Aside from the claims of stereotyping and bias made against RIASEC theory, we believe that gender or sex is an important variable to consider in career decision-making (Heppner & Jung, 2015). Nauta (2022) noted that future research might examine how RIASEC scores of transgender and non-binary gender minorities might differ from those of cisgender men's and women's scores and how this might aid in interpreting norm-based RIASEC inventories. It is hard to avoid the effects of gender identification or sex at birth on the choices individuals make, including career choices. In classes and workshops that we conduct on career planning, many of the women commonly report they have always considered how having children will impact their career choice and way of working. On the other hand, many of the men look confused or surprised by this revelation and honestly report they had not really thought about this issue.

Our current understanding of RIASEC theory with diverse groups supports its use with varied individuals and that the applicability of the RIASEC structure to men and women is useful in creating person/environment matches (Tracey & Sodano, 2013). Still, there is much to be known about the applicability of RIASEC theory to some groups, such as those with disabilities (Szymanski et al., 2003).

8. Myth: Holland's theory doesn't work well with the creative and intuitive type individuals.

This myth seems to ignore the fact that Holland saw himself as an Artistic and intuitive type person who created novel ways to help individuals think about life/career decisions. It is true that some Artistic and intuitive types do not like a rational or linear structure in their

decision-making, they like to think outside of boundaries, and they tend to focus on "gut feelings" or what just seems right. Yet, the heart of RIASEC theory still applies to them because creative persons might best learn about their RIASEC interests by studying the hexagon figure showing the arrangement of the six types. An Artistic type may prefer to draw their own version of how their interests are structured with graphics and all kinds of creative tools, perhaps using circles of varied sizes.

Artistic types may particularly appreciate assessing their career aspirations through expressed methods (e.g., listing occupational daydreams). An artistic or intuitive person might take the RIASEC code of an occupational daydream and then use that code to generate lists of occupations using O*NET or *The Occupations Finder*. They could also use the Position Classification Inventory to create a RIASEC code for their ideal job. Moreover, they could examine Table 2.1 to see how the six types and environments are described. Individuals engaged in intuitive or instinctual thinking may see many things at once or have a vision that other individuals do not see. They may view the big picture and engage in thinking that contains perspective, is heart centered, oriented in space and time, and tends to the real or concrete. It may involve a piece of information that one is not exactly conscious of, and it often involves an emotional element. Therefore, a highly intuitive person will be capable of generating information without using a known logical or rational process, and/or they may find creative ways to combine RIASEC types in their life/career planning.

9. Myth: Holland's RIASEC theory ignores variables outside the six types or characteristics other than career interests. (e.g., values, abilities)

In original work by Holland (1997) and in Chapter 2, we showed how the RIASEC types include not only a description of interest areas but also of values, skills, and other personality

traits. Chapter 3 discussed the importance of other theoretical concepts that aid in understanding the depth of RIASEC theory such as the Secondary constructs (e.g., congruence, differentiation), and also presented information about how researchers are currently using RIASEC to help organize a variety of person-specific factors including intelligence and general personality traits. These concepts help to specify the RIASEC areas to a particular person and are what give the theory its depth.

10. Myth: More complex models than the RIASEC hexagon are needed to provide more help to individuals.

In addressing this myth, we provide some evidence from a report that used RIASEC theory as an assessment intervention in workshop settings with a wide range of Australians living in regional, rural, or remote areas, e.g., "the bush" (Leeson & Reardon, 2009-2010). The article draws upon the experiences of the first author using RIASEC theory in providing career guidance services to underserved populations in that country, including disengaged secondary students and unemployed people living in difficult social and economic circumstances. This workshop, never given a name, draws upon the ideas in Holland's Corridor Approach to career decision-making introduced in Chapter 1. We simply refer to this program now as the *Australian Workshop*.

Background. Individuals receiving Australian Government income support were required, as a condition of receiving financial assistance, to prepare to enter the workforce. All participants were long-term unemployed or underemployed, and they included single parents returning to the workforce, young people who were disengaged from secondary education, people of mature age, ex-offenders, people with English as their second language, and those who were recently made redundant (unemployed). Participants were living in difficult social and

economic circumstances, and often had limited employment opportunities in their location. Very few had postsecondary education, and many had no experience using computer programs or reliable access to the Internet, but all were interested in exploring options for work and the possibility of further training. The authors noted that these workshop participants had not had previous satisfactory experiences regarding person/environment fit relative to work.

Procedure. The participants in this Australian Workshop were asked to construct an imaginary world to which they could relate. They could imagine a time 200 years ago, being on an uninhabited tropical island, living in primitive society, where occupations were gender biased and permanent. They were invited to identify those activities, competencies, attitudes, and values that would contribute to the survival of the group, and those activities that would allow them as individuals to best contribute to the well-being of their families and the community.

Following this workshop introduction, participants were asked to review the six (RIASEC) descriptions of work available in this remote hypothetical community and to identify the three most attractive to them (see Table 7.1). It was stressed that the work which needed to be done would ensure the group's survival and prosperity, and that it would be unpaid. The six areas of work would together form an integrated and comprehensive web of activities in the environment that would meet the needs of the community. Gender roles were included in the six descriptions to encourage participants' discussion of relationships and responsibilities regarding work.

Table 7.1. Australian Workshop RIASEC Scenarios

R: REALISTIC
Past: Meeting the material needs for survival could include hunting to get food, finding water and collecting it, making primitive tools, building a shelter or excavating a cave, constructing some form of clothing, carving tracks through rough country, building simple bridges, protecting the group from danger, etc. These roles were mainly undertaken by men.
Now: A parallel can then be drawn to contemporary living by relating those activities to food production, tool making, construction and protection industries where people now have paid work, and how these relate to our survival needs and some of our safety and security needs. Men and women undertake these roles in contemporary society.
I: INVESTIGATIVE
Past: In every early community there has been an emerging need to do things in a more effective way through innovation and calculation — the people who preferred these activities would be the research arm of the community and would exemplify the research and development paradigm that includes input from the applied learning from the Realistic types. Achievements may include making more effective weapons and tools, growing better crops, calculating the seasons and tides, developing a computational system and investigating medical remedies for tribal ills. These roles were mainly undertaken by men.
Now: Easy parallels exist in contemporary society with science, abstract mathematical and medical occupations seen to be filling the needs of society by constantly searching for new knowledge and improvements in the quality of life for all. These roles may now be undertaken by men and women.
A: ARTISTIC
Past: The need to express the culture, values, and beliefs of any community has been filled by people with a preference for the expressive and performing arts—dancing, singing, carving, painting, decorating, singing or telling stories from the past. Early struggles for survival would be transformed into tales of heroic deeds, songs to celebrate valour, and creative dance to celebrate and influence significant events. These roles were undertaken by men and women.
Now: The value of these activities can be seen in similar occupations with modern technology allowing greater visual and audio transformations of creativity through sound and visual effects. Print technology has allowed the creative oral histories to be stored more effectively and provides greater access to community members.

S: SOCIAL

Past: In every primitive community, social needs have been the province of the women of the tribe. These include the need for nurturing the young, caring for those who are sick or injured, teaching the social mores and values of the community, assisting in the development of younger members of the community and helping them to understand their future roles, and supporting the elders of the tribe.

Now: In today's society, the roles that meet community needs are those related to teaching or helping others with a heavy emphasis on interpersonal relationships. Some of the roles undertaken include teacher, counsellor, social worker, nurse, welfare worker, and religious worker. The predominance of women in these occupations is understandable, but many men are also drawn to a more collaborative and empathic way of assisting in their communities.

E: ENTERPRISING

Past: In primitive communities, certain individuals rise to positions of power and influence through their energy, influential communication skills, and leadership qualities. The tribal leaders and significant figures were able to provide a sense of purpose for their people, and persuade them to be more adventurous, embrace change, and focus on the acquisition of material wealth. Most of the leadership positions were automatically filled by men, but many of them were profoundly influenced by women who historically took more traditional roles.

Now: Enterprising roles have gained greater importance in assisting communities to meet their needs in our contemporary society. Material wealth is gained, often through persuading others to invest in goods or concepts that will benefit them and provide the entrepreneur with wealth, status, or power. There is a need for leadership in communities, and politicians, lawyers, salespeople, and managers have key roles in influencing the vision and the economy of the community. Women are increasingly taking on these roles that were formerly held by men.

C: CONVENTIONAL

Past: Recording material information of food production, construction techniques, and seasonal changes, bartering with other communities, and keeping records of birthing and death were all facilitated by people who were able to operate within a system that could be accessed by all, and where the tasks of collation, storage, and retrieval of information were critical to the well-being of the community. Many of these roles would have been undertaken by women in their daily routines of meeting family needs.

Now: In contemporary society there are critical needs for clerical and administration skills and for basic recording of societal, economic, financial, and numerical data. The accuracy of records and the need to conserve information have a high priority. These roles are performed by both men and women.

Note. Adapted from Leeson, J., & Reardon, R. C. (2009-2010). Using the RIASEC schema in expressed vocational assessment: An Australian experience. *Career Planning & Adult Development Journal, 25*(4), 59–73. Pp. 72–73.

The rationale for this initial workshop activity was to help participants understand their own needs as well as those of the community in which they lived in order to meet both career aspirations and priorities for survival and satisfaction. In this discussion, participants often realized that human needs have changed very little over the years, but the ability to meet them more effectively has been changed by advances in technology, communications, and the globalization of the workforce.

The workshop discussion centered upon reflections about the RIASEC scenarios in Table 7.1, and it often evoked enthusiasm and humor as individuals started to identify their areas of interest in more primitive societies and then translate those into the contemporary world. Once participants had reviewed and discussed the six RIASEC areas of work and personally clarified their meaning, they were invited to pick one, two, or three of the areas and arrange the letters in a priority order. Using varied classifications based on Holland's theory, e.g., *The Occupations Finder* or *The Educational Opportunities Finder*, the participants were encouraged to analyze a number of occupational titles and speculate on the skills, interests, values, and personal characteristics that would help to make people successful. Using these tools, they could view the lists that matched the RIASEC summary codes as examples of options for further exploration. Participants were then able to develop descriptions of occupations for themselves where they could shift the emphasis from their first letter to their second and third letter, or other permutations of the letters, and identify the changes in occupational titles and focus. They were also able to recognize areas that were of little interest to them where they would not be motivated to gain additional skills.

Outcome. RIASEC theory and related tools provided a pragmatic, helpful framework to discuss life/work roles and options found throughout the world and in varied contexts. The

authors reported that this Australian Workshop intervention enabled many hundreds of participants to appreciate that the six RIASEC areas of community contribution through work have not changed over the centuries even though the technology has changed, and that all occupations are part of a system that sustains the life and infrastructure of the community (Leeson & Reardon, 2009-2010). This reduced the confusion of having too many choices and not having a comprehensive understanding of new occupational titles or opportunities. It gave participants permission to set their own priorities, rather than meeting the expectations of others, i.e., an agentic approach, and to examine what was available to them in their locality. This Australian Workshop approach may be suited to those people who have a less sophisticated view of the world, and it encourages them to use the knowledge they have gained to make realistic choices from among occupations that are available in their community, particularly if there are reduced options in regional, rural, or remote locations.

The use of RIASEC theory in this unusual circumstance in rural Australia enabled individuals to express their interests and find a framework for analyzing potential occupations. It provided many hundreds of ordinary Australians with the means to gain insight into their potential contributions to society and to gain a greater understanding of the world of work. Moreover, the authors reported that many of the participants over the past twenty years have gained higher-level education so that they can make a greater contribution to their communities and have a greater sense of achievement (Leeson & Reardon, 2009-2019).

This story of how RIASEC theory was used in a unique place highlights the utility of this approach to helping a wide range of individuals in special circumstances to apply this person/environment fit model developed by Holland to make satisfying life/career choices. It

also helps debunk Myth No. 6 regarding RIASEC relevance for racial and ethnic minorities presented earlier.

Some Reflections on RIASEC Theory

Holland's RIASEC theory has influenced career and life planning ideas for over 50 years (Holland, 1959; Nauta, 2010, 2020). The last comprehensive account of the theory was published over 25 years ago (Holland, 1997), but the theory and its applications have continued to spread. Indeed, Holland was thinking about the future of RIASEC theory when he provided a list of research suggestions for students and others in Appendix E of *Making Vocational Choices* (Holland 1997, pp. 280-287). In many ways, that list of ideas, principles, and homilies covers every aspect of the state of RIASEC theory at the time and calls attention to a score of topics that need further work. Many of these ideas are reviewed later in the concluding remarks at the end of this chapter.

These developments make it important to summarize what we have learned about the theory in the intervening years. Nauta (2022) provided some observations after reading Holland's autobiography (Rayman & Gottfredson, 2020). First, Nauta noted Holland's commitment to pragmatism and simplicity, and how he used simple descriptive statistics rather than more complex statistical analyses in his research. The commitment was evident in creating RIASEC tools for assessing vocational interests of individuals, and occupational and job classification systems that reflect current work environments. Future RIASEC research might focus on the classification of occupations in non-Western cultures where occupations with the same name might encompass very different work activities depending on local customs, norms, or laws.

In a similar vein, Peterson (2022) reviewed Holland's autobiography (Rayman & Gottfredson, 2020) and reflected on RIASEC theory and Holland's contributions. He noted that

one can see from this brief sketch of Holland's works how RIASEC theory progressed from a classification system, to a measure of interests (VPI), to the hexagon, to a new assessment measure (SDS), to books about the theory, to additional measures, e.g., MVS, PCI, and finally to the means for linking interests to occupations in *The Occupations Finder*. Holland's path was marked by continually perfecting the theory and developing operational forms of it in a variety of measures and career resources.

Peterson noted that he did not find anything in Holland's autobiography regarding his efforts to institutionalize work with RIASEC theory and research in a university or foundation center or institute. Moreover, no individuals were identified to continue work on his legacy, although Rayman and Gottfredson (2000) contributed to sustaining interest in Holland's work with the publication of his autobiography.

Peterson concluded that RIASEC theory will most likely continue until the hexagon, SDS, and *The Occupations Finder* become outmoded, either by new theory, new instruments, or when links between interests and occupations change due to broad variations in work environments. In addition, the online environment may offer a way to deliver the theory components with greater accessibility at lower cost, but the RIASEC theory, as an integrated system, will most likely remain intact and relevant for the foreseeable future. Moreover, the fact that RIASEC codes are incorporated in O*NET (https://www.onetonline.org/) and other online tools will also sustain Holland's legacy.

Unfinished Work

In thinking about future work with RIASEC theory, we turned to Gary Gottfredson, Holland's friend and colleague, for some ideas about this matter. Gottfredson coauthored with Holland on 20 occasions, more than anyone else, so we thought his ideas about what might

happen next with RIASEC theory mattered. Gottfredson (1999) identified four areas of work that would be fertile soil for future scholars and practitioners: (a) how individuals develop and become socialized, (b) personal and environmental change, (c) assessment of environments, and (d) effects of vocational interventions delivered in varied ways.

Development and Socialization. Children have biological dispositions and learned preferences that shape their interests, which eventually lead to competencies, skills, values, and beliefs. In other words, they develop their RIASEC interests and personality. These interests become more stable with increasing age. This does not mean that they are unchanging, because as individuals interact with their environment, they often make choices that increase their satisfaction and fit. There is a need for more information about the experiences individuals have interacting with their environments, i.e., family, job, education, leisure, that facilitate further development of interests, skills, and dispositions. This could also increase understanding of occupational achievement and satisfaction.

Incongruent Environments. Research and further investigation are needed to understand how individuals cope with incongruent environments. We touched on this in Chapter 5. When do individuals try to change the environment and when do they accept the lack of personal fit in it? How does the identity of the environment or of the individual impact this decision? Some observers speculate that job changers are moving from one RIASEC coded job to one with another code, but evidence seems to suggest that there is stability in the RIASEC code involving job changes. This matter merits further study given the recent pandemic experience and the varied ways that workers have responded to changes in the way they work with artificial intelligence (AI).

Environmental Assessments. In Chapter 4 we noted that occupations, jobs, fields of study, and leisure environments have not been sufficiently studied from a RIASEC viewpoint. For example, how do employer biases, discrimination, gender segregation, and ethnicity affect environment fit for individuals? What is the impact of the social power of an environment on an individual's sense of fit in a job or field of study? A more complete understanding of environmental influences will require investigations of diverse occupations and the individuals in those environments.

Outcomes of Career Interventions. Finally, there is a need to build, understand, select, and evaluate appropriate career interventions for use in varied settings with diverse individuals. For example, various interest assessments, SDS, SII, O*NET Interest Profiler, do not produce the same RIASEC codes or lists of occupations and there is a need to know why this happens and which ones produce the most satisfying lists for individuals. The delivery system used for the intervention should also be examined, i.e., self-help, brief-staff assisted, individual case-managed (Sampson et al., 2023). Gottfredson (1999) noted that "There will never be enough fully trained and skillful psychologists or counselors to provide one-on-one assistance to everyone who can benefit. Accessible, valid, and helpful career assistance for everyone will depend on progress in the development and evaluation of inexpensive, valid, and helpful interventions" (p. 33). Holland also shared this view. This is one of the reasons why we have emphasized and illustrated the use of the RIASEC theory and the hexagon together as stand-alone instruments and tools for helping individuals and organizations find satisfactory connections and fit in work and life decisions.

Ubiquitous is a good word to describe the current state of RIASEC theory. In this book, we have written about RIASEC theory from its inception and how that was shepherded by the theorist himself. Holland molded and cared for this theory his entire career, which did not end

until his death in 2008. The purpose of this book was to provide readers with an account of RIASEC theory and associated research in a way that would help with life and career choices. This updated account of Holland's model today is a mix of self-help, our experience, research, and the inspiration of John L. Holland.

Summary

This chapter began with a review and a discussion of 10 myths associated with RIASEC theory and then offered facts and information to refute those ideas. It also summarized what we have learned about the theory since its founding over sixty years ago. It continues with some reflections on RIASEC theory by several observers and Holland's ideas about unfinished work with the theory, and finishes with concluding thoughts from Gary Gottfredson, one of Holland's closest associates.

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AFTERWORD

This book emphasized how RIASEC theory and the hexagon can be used freely in primary prevention as a stand-alone intervention to help individuals and organizations achieve a person/environment fit and life/work satisfaction. We believe the theory can be used in practice by *itself* in conjunction with instruments, booklets, and other materials developed and based on the theory. We illustrated this idea using conceptions such as

1. Holland's Corridor Approach to career decision-making in Chapter 1,
2. the World of Work (*WoW*) initiative with school children described by Hidalgo (Chapter 4),
3. the work with college students using *UMaps* at the University of Maryland (Chapter 4),
4. the *RIASEC game* at Florida State University described by Reardon & Lenz (Chapter 4),
5. the notion of *adherence* regarding intuitive and learned RIASEC schema for increased career certainty described by Tracey (Chapter 4), and
6. the *Australian Workshop* intervention with bush people described by Leeson and Reardon (Chapter 7).

Imagine that an organization used a Corridor Approach or UMap as primary prevention in a self-help way for individuals making life/career choices. This could also happen with a website using RIASEC and the hexagon. This use of RIASEC theory would be free and available for persons at varied ages, ethnicities, and genders in order to become more self-reliant and agentic (an individual's power to control their goals, actions, and destiny). We hope this book has provided new insights and ideas that will enable individuals, practitioners, and others to reimagine the use of Holland's RIASEC theory, his assessments, and other RIASEC-based tools in their lives.

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